Exploring the Effects of Formalised, Targeted Municipal Food Planning Initiatives on Access to Healthy Food

Kareem M. (Kareem Malik) Usher
EXPLORING THE EFFECTS OF FORMALISED, TARGETED MUNICIPAL FOOD PLANNING INITIATIVES ON ACCESS TO HEALTHY FOOD

By

KAREEM M. USHER

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Kareem M. Usher defended this dissertation on April 9, 2015.
The members of the supervisory committee were:

Timothy Chapin
Professor Co-Directing Dissertation

William Butler
Professor Co-Directing Dissertation

Keith Ihlanfeldt
University Representative

Christopher Coutts
Committee Member

The Graduate School has verified and approved the above-named committee members, and certifies that the dissertation has been approved in accordance with university requirements.
To
Chenikka my lovely and gracious wife
Amadi, Camille and Kareem (The Younger), for being the wind beneath my wings.

My parents
Mr. Arthur Usher, Sr. and Ms. Elizabeth Humes, who are my rudder and sail.

I am the richest man in the entire world.
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ABSTRACT

Over the past sixty years, many cities in the United States have experienced the evaporation of independently owned neighbourhood grocery stores and the proliferation of large, full-service suburban supermarkets, leaving behind ‘grocery gaps’ in central cities. This phenomenon, influenced by powerful economic forces, has made access to healthy food a challenge for some in these food insecure areas. In addition, easy access to fast-food restaurants, higher food prices, lower quality food and the lack of transportation has contributed to glaring health disparities where higher incidences of diet-related diseases are evident in low income and largely minority communities. Often policies designed to address the negative health outcomes and co-related ‘grocery gaps’ focus on availability, affordability and quality of food in neighbourhoods. Few address other psychosocial components of food access. This mixed-methods study extends our understanding of access by exploring five dimensions of access: acceptability, accessibility, accommodation, affordability and availability in a study of four neighbourhoods in Louisville, Kentucky. Through spatial analysis, analyses of stakeholder interviews and ANOVA tests of questionnaire results, I found that the neighbourhood and living in an initiative area affected residents’ perception of availability of fruits and vegetables. In addition, residents’ perception of accommodation was affected by age. Race, sex, income, food cost, receiving food assistance and vehicle access did not significantly affect access as perceived by participants. Furthermore, access is enhanced through cultural norms and relationships, including relationships among corner stores, corner stores and families, and among neighbourhood residents. Successful corner store initiatives to improve access to healthy food in urban areas should include objective and perceived components of access as well as a temporal component that incorporates inter- and intra-community relationships among neighbourhood residents, corner stores and wider community stakeholders. This relationship amongst the objective, perceived and temporal components of access is conceptualised as the ‘Three Pillars of Access’. Finally, this study also holds saliency for communicative action in critical theory of urban planning as a path to move us towards authentic and qualitatively deeper perspectives concerning healthy food access.
CHAPTER ONE

INTRODUCTION

Municipalities are implementing urban food policies to improve access to affordable, culturally appropriate, non-emergency food to improve both citizens’ health and local economic development agendas. However, these policies have been costly and results have been inconsistent as much remain unknown concerning residents’ attitudes towards accessing healthy food in their neighbourhoods. This dissertation project evaluates one such food policy in Louisville, Kentucky. In addition to an evaluation of the Healthy in a Hurry Corner Store Initiative, I explore the attitudes of community stakeholders and perceptions of access held by a sample of residents in four Louisville neighbourhoods.

Background to Study

Food has long been an essential component in the formation of human settlements (Mumford, 1961; Steel, 2008). According to Childe’s (1936) analysis, human development proceeded through four stages, Palaeolithic, Neolithic, Urban and Industrial, delineated by three developmental ‘revolutions’. The Neolithic Revolution marked by agricultural activity - the domestication of plants and animals, pronounced the end of semi-nomadic Palaeolithic communities, and resulted in the production of surplus goods that could be traded at markets. The second, was the Urban Revolution of the Fourth and Third Millennia Before Common Era (BCE). During this period, social surpluses from agricultural goods released labour to be involved in other productive activities such as commerce, defence, and governance – social hierarchy and administration was based on the proximity, security and provision of food (Childe, 1950; Mumford, 1961). The earliest ‘cities’ developed written records, archives, kingships, priests, monuments, full-time specialist craftsmen, and mathematics begun to appear in the cultural centres such as Uruk, a Sumerian city in Mesopotamia, Harappa and Mohenjo-daro in the Indus Valley, cities in Egypt and Maya cities in Mesoamerica circa 3500-3000 BCE (Childe, 1950; Mumford, 1961; Steel, 2008). The Industrial Revolution of the Eighteenth and Nineteenth Centuries followed with economies becoming more complex and was characterised by increased mechanisation, manufacturing and less agrarian focused (Childe, 1950). Since then, long-range, public planning was developed as a tool to address the increasing complexity for social issues
including access to services and amenities, land use and sustainable economic development (Campbell, 1981; Klosterman, 1985; Mumford, 1961; Smith, 1991; Steel, 2008).

Cities have since evolved. Western European and North American cities shifted from an agro-dominant economic base to economies built on manufacturing and industry during the Nineteenth and early Twentieth Centuries (Childe, 1950; Davis, 1965). The labour force also had to adjust. In the United States (U.S.) displaced farmworkers from rural areas, European immigrants and freed African-Americans migrated to these rapidly industrialising cities seeking improved opportunities and a place in the new industrialising economy (Du Bois, 1994 [1903]; Hall, 2002; Levy, 2011; Sies and Silver, 1996). City services and resources were overwhelmed eventually by the rapid population growth; in addition, these ‘wicked’ problems were compounded by the interplay of environmental degradation, suburbanisation, ‘urban renewal’, social justice, power and politics (Flyvbjerg, 2002; Forester, 1989; Friedmann, 1987; Jacobs, 1961; Rittel and Webber, 1973). Planning theory and practice evolved to address these issues. Planning’s Gilded Age of the late Nineteenth Century, which focused on an imposed ‘blueprint’ of rational thought, slowly gave way to the Progressive Era characterised by ‘communicativeness’ and participatory-pragmatic approach in adapting its rational comprehensive roots (Arnstein, 1969; Faludi, 1970, 1973, 1991; Hoch, 2007; Sies and Silver, 1996) to safeguard the ‘public interest’ – public health, safety and wellbeing (Callies, et al., 1999; H. Campbell and Marshall, 2002; Farmer et al., 2012; Flyvbjerg, 2002; Friedmann et al., 1973; Klosterman, 1980; Tugwell, 1939, 1940; Yiftachel, 1998).

City Planning and Public Health

Indeed the very foundation of modern-day city planning at the turn of the Twentieth Century (planning’s Progressive Era) was established to address public health concerns such as air pollution, crowding, potable water and sanitation (Sies and Silver, 1996). In addition to the reform tradition recognised as The City Beautiful Movement (1901 – 1915) that sought to alleviate widespread economic, social and political challenges through urban design and aesthetics, the invention of the water carriage sewer system required the construction of comprehensive urban infrastructure for its functioning. Charles Booth’s sanitary survey, a rudimentary form of urban planning, was a study of the conditions of the poor in London’s East End that systematically mapped the sanitary conditions on every parcel of land in the area (Hall, 1989, 2002). Booth’s work also prompted city planners at the time to think comprehensively of
physical aspects of the city such as circulation, land uses, utilities, amenities and community facilities (Hall, 2002; Sies and Silver, 1996).

However, the City Beautiful Movement was heavily panned for being too concerned with design and aesthetics and less with addressing the observed injustices of urban problems (Sies and Silver, 1996). These critiques galvanised the City Social Movement that directly addressed social and economic injustices in the conditions of settlement housing, childcare, health care, education and recreation. Two reformers, Mary Simkhovitch (1867 – 1951), who formed the Cooperative Social Settlement Society in 1901, and Florence Kelley (1859 – 1932) who co-organised The Committee on Congestion of Population (CCP) in 1907, held that overcrowded and unsanitary tenements were due to ‘unregulated concentration and social neglect… rather than the normal operation of economic and social forces’ (Sies and Silver, 1996). The CCP would secure the first New York zoning ordinance to reduce density in the central city. And Simkhovitch would organise and address the *First National Conference on City Planning and Problems of Congestion* held in Washington, D.C. in May, 1909 that queried city planning from hygienic [public health], economic and social perspectives. Among its recommendations, the conference called for an affordable transit system, regional planning, ‘conscious suburbanisation’ and neighbourhood planning (Sies and Silver, 1996). These Progressive Era reforms also addressed food access in cities. Public markets provided most of residents’ produce, meats and dried goods (Morales, 2000). In Chicago, for example, indoor and outdoor street markets were seen by the City Council to contribute to the health of residents as well as addressing the issue of immigrant unemployment. And by 1912, the Chicago Municipal Market Commission was established to managed these markets that they may better serve residents and enhance the local economy (Morales, 2000).

These recommendations reflected new ideas about the role of planning. Reformers pursued tools that were more practical and effective at addressing social ills – public health in particular, than were the prior approaches of urban design and architecture. The City Functional (or Practical) Movement (1916 – 1939) was the result. During this period the legal and legislative grounding for ‘zoning’, the use of a jurisdiction’s police power to separate incompatible land uses for public safety, which begun with New York City’s Zoning Ordinance in 1916 was established (Callies et al., 1999; Hall, 1989). This was followed by the Standard State Zoning Enabling Act a decade later that empowered municipalities to adopt zoning
regulations to promote the community’s ‘health, safety, morals, or general welfare’ (Callies et al., 1999). And by the end of the 1920s, along with the landmark Village of Euclid, OH v. Ambler Reality Co. (US 1926) case where the United States Supreme Court upheld the constitutionality of zoning, more than 750 other communities had adopted zoning regulations (Callies et al., 1999; Hall, 1989).

**Food and Modern Cities**

It is peculiar, then, that food upon which modern cities were established, is essential for life and considered a public health issue, had fallen out of the purview of city planners (Clancy, 2004; Eisenhauer, 2001; Pothukuchi and Kaufman, 1999; Steel, 2008). There are three topics to consider for this shift, urbanisation, technological advancement and the retail economy. During the Nineteenth and early Twentieth Centuries, rural-to-urban migration was the leading factor contributing to urbanisation and the growth of cities. This departure from the hinterlands was triggered by technological advancements in farming equipment which meant less farm workers were needed; at the same time, rural workers were attracted to employment opportunities in factories located in the cities (Davis, 1965). In addition, advancements in transportation and packaging - the development of the railroad system and refrigeration, meant that the provenance of food can be from distant locations (Steel, 2008). Furthermore, the separation of urban planning from food was due to the changing nature of agriculture and the food retail economy. Large agricultural firms dominated farmlands driving family-run farms, which usually supplied small urban grocers with food, out of business. Although small independently owned food stores dominated the retail sector during the early-Twentieth Century - towards the end of the Second World War, from the 1950s through the 1980s, larger self-service supermarkets gained a larger share of the retail market (Eisenhauer, 2001).

Although all contributing factors are difficult to decipher, the work of city planners has been identified as a determinant. Urban housing and highway policies that provided the pathways to ‘green fields’ in sub-urban areas, supermarket ‘redlining’ in central cities and zoning and land use ordinances, among others, weakened neighbourhood grocery stores and placed large supermarkets physically out of the reach of some urban families (Peters and McCreary, 2008; A. Short et al., 2007). The result has been the loss of small neighbourhood grocers and the lack of access to fresh fruits and vegetables by many residents in central city communities (Eisenhauer,
Food Justice. The ‘social medicine’ of early Twentieth Century reformers, with its ties to social justice focused on housing, public health and food, eventually gave way to policies that have led to the systemic limitation of food choices in many communities (Morales, 2011). Many observers have commented that the uneven distribution of health-promoting food and the convenient access to cheap, unhealthy food are rooted broadly in global corporatization of the food system, and locally, in deep historical contexts of race and class prejudice that ultimately impact who has access to nutritious, affordable food across space (Alkon and Norgaard, 2009; Gottlieb and Joshi, 2010; Guthman, 2008b; Kwate, 2008; Zenk et al., 2005). The movement encompasses the sovereignty of peasant farmers of the global south to grow food for their subsistence. It considers the rights of immigrant farm workers and fast food restaurant workers to better wages and benefits, and to central city families’ rights to adequate transportation to access healthy food (Bello, 2008; Gottlieb and Joshi, 2010; Mares and Pena, 2011).

The term Food Justice, which also describes the movement, characterises a framework that connects food access to power and community political efficacy. Thus, it is conceptualised as a theoretical and political bridge between sustainable agriculture, food security – access to healthy, affordable, culturally appropriate food – and environmental justice that speaks to the disproportionate burdens of environmental degradation and lack of access to environmental benefits being placed on low-income, immigrant and communities of colour (Alkon and Norgaard, 2009; Holt-Giménez, 2011b; Mares and Peña, 2011). It is from this point that the current food movement, expressed through community mobilisation, extends. And it is at the confluence of food as a social justice issue and public policy that urban planners have regained their footing in addressing core planning topics such as the environment, sustainable land use, access to affordable and healthy food, worker rights, and global economic and political forces that have local impacts.

Planning for Urban Food Access

The momentum has shifted again, and recent calls from public health experts and geographers have re-energised planning academicians and practitioners to return to urban and regional food systems planning (Campbell, 2004; Clancy, 2004; Morgan, 2009; Pothukuchi and Kaufman, 1999, 2000; Raja et al., 2008). Planners have contributed their expertise in
information gathering and analysis through community food assessment studies by organising food policy councils of community stakeholders (Blay-Palmer, 2009; Cohen et al., 2002; Jennings, 2011; Slocum, 2006). They have also offered creative zoning and land-use reforms to attract food stores, establish farmers’ markets, community gardens and urban agriculture to improve access (Beil et al., n.d.; Rutt et al., 2008). Planners have advocated holistic, sustainable initiatives that address the interconnections between food, other traditional planning issues such as transportation, economic development (healthy corner stores) and public health as well as social issues such as food justice (K. Morgan, 2009; Pothukuchi and Kaufman, 2000; Pothukuchi, 2005; Raja, Born, et al., 2008a; Slocum, 2006, 2007). Given these, this research study marks the continued commitment of planners to urban food access. By exploring the Healthy in a Hurry Corner Store initiative implemented in Louisville, Kentucky from 2009 through Spring of 2012, this study extends the discussion on food access beyond ‘objective’ measures to incorporate subjective and emotive variables that characterise families’ perceptions of access in low income, low access communities.

**Research Problem**

As more local governments are beginning to recognise the importance and benefits of planning for urban and regional food systems, food initiatives are becoming more impactful through community-wide comprehensive planning, new land use regulations, zoning ordinances and transportation policies (Wegener et al., 2012). Food system planning also influences sustainable local economic development through urban land-banking to attract retail grocery stores, community development and social capital through place-making and public markets, sustainable resource management, and through efforts to improve public health, food security and social justice (Beil et al., n.d.; Feenstra, 1997; Morales, 2009; Morgan, 2009; Pothukuchi and Kaufman, 1999; Pothukuchi, 2005; Rocha and Lessa, 2009).

In both urban and rural communities, access to affordable, high-quality healthy food is important for better health outcomes and sustainable local economic development (Flournoy, 2011). However, initiatives to improve access to healthy food have had mixed results (Coveney and O’Dwyer, 2009; Cummins et al., 2014; Winkler et al., 2006). The issue at hand, then, is to identify the components that constitute access. Troublesome issues in food access policies stem from inconsistent and unreliable methods to define, categorise and measure neighbourhood food environments. Geographic information system analysis is used most often to define ‘food
deserts’ and access, consequently, access is usually measured on physical proximity, or as availability and affordability of healthy food alone (Charreire et al., 2010; Glanz, 2009; Lytle, 2009; McKinnon et al., 2009). While other studies measure food quality through nutrient analyses of a typical basket of food, less work is done on psychosocial elements of ‘acceptability’ and ‘accommodation’ that take into account residents’ perceptions of store hours and aesthetics, relationships between community residents and storeowners, and perception of the neighbourhood (Caspi et al., 2012; Giskes et al., 2007; Gustafson et al., 2011). More studies that utilise mixed methods approaches to explore cultural, non-rational and subjective measures of food buying and access are needed for a deeper and richer understanding of the complexity of the food environment (Alkon et al., 2013; DeLind, 2006; Walker, Block, & Kawachi, 2012; Walker, Keane, & Burke, 2010).

By responding to these gaps in the literature, this research project is timely, relevant and purposeful. I have identified three research questions to guide the study.

Research Question 1: How has the Healthy in a Hurry Corner Store Initiative (HHCSI) affected ‘objective’ access to healthy food in food insecure communities?
This first research question enquires into the general effectiveness of the initiative within the case study neighbourhoods. Has neighbourhood households’ ‘objective’ access (availability, affordability and accessibility/location) to healthy food improved since the HHCSI intervention? Has it remained the same or gotten worse?

Research Question 2: How has the Healthy in a Hurry Corner Store Initiative affected ‘perceived’ access?
Where the first research question addressed ‘objective’ measures of access, this second question guided the research to gather data on the attitudes of stakeholders and residents, to provide a more subjective understanding of ‘access’. This builds upon previous work and extends our ideas of food access in neighbourhoods.

Research Question 3: What factor(s) most influenced residents’ perceptions of access?
Through analyses of the survey results, the study identified which factors are the most influential in affecting the respondents’ perception of access. Answers to this question would allow us to pinpoint crucial factors that affect perceived food access, and would support planners and stakeholders in designing more effective food policies.
Ultimately, the broader purpose of the study is to re-invigorate our theoretical assumptions and understanding of food access. Deeper still, the purpose of the study is to nudge us beyond one-dimensional ideas of physical access and explore relationships as they intersect to generate conditions of improved food access in our communities. These relationships refer but are not limited to:

a) The relationships between neighbourhood residents and their food environment;
b) The relationships among residents in addressing food access;
c) The relationships between corner stores and residents;
d) The relationships among corner stores, and
e) The relationships among stakeholders, policy decision makers and the political economy.

Relationships make a difference in residents’ accessibility to healthy food. Jane Jacobs (1961) discussed the neighbourhood storekeeper who provided informal services such as watching the streets which helped to prevent crime (Ibid, pp. 35-37) and engaged in discussions with customers and residents, even holding their house keys. She defined this interaction as ‘togetherness’ based on trust (Ibid, pp. 59-62) and is essential in affecting perceived access to healthy food. In Louisville, residents have organised an ad hoc neighbourhood shopping shuttle service with their private vehicles to transport those with limited access to transportation to the grocery stores and return them home for a nominal fee of four of five dollars\textsuperscript{1}.

I believe a better understanding of these dynamics of access to food will improve public policies and our planning approach to healthy food access in urban communities. This study was also intended to provide a first step in the development of a psychometrically valid instrument to measure ‘perceived’ access to healthy food, which would be very useful in our efforts to address the growing health concerns of residents of food insecure communities. Lastly, by identifying emergent themes from the stakeholder interviews, this project will allow us to make methodological and analytic generalisations that are applicable to similar conditions in different cities (Creswell, 2009; Patton, 2002; Yin, 2003, 2009).

\textbf{Methods}

This dissertation study fulfils three broad aims: first, it examined the inception and implementation of a formalised municipal food policy. Secondly, I evaluated the Healthy in a Hurry Corner Store Initiative on its stated goal to improve access to healthy food and beverages to 50,000 households in the initiative designated neighbourhoods. And thirdly, the purpose of

\textsuperscript{1} This was mentioned in an interview with one of the stakeholders.
this research study was to draw out policy implications based on the expanded definition of access introduced in this study.

The Healthy in a Hurry Corner Store Initiative was developed in 2009 by the Young Men Christian Association (YMCA) of Greater Louisville and community advocates who identified food access as a major concern for families in West Louisville and East Downtown. Later programmatic support came through the Louisville Metro Department of Public Health and Wellness, and a major grant of $7.9 Million through the American Recovery and Reinvestment Act – Prevention and Wellness Initiative. These funds were used to expand the Healthy Corner Store initiative to eight stores. The idea behind the initiative was to lower rates of obesity – which might lead to preventable, diet-related diseases, by introducing healthy food options in areas where access to those foods are limited. And since it was difficult to attract large, full-service grocery stores, neighbourhood corner stores were recruited to participate. The programme invested in store renovations, equipment (refrigerator) and signage, while corner storeowners agreed to track produce sales. The initiative operated from March, 2010 through March, 2012.

In pursuit of these three goals, I selected four similar neighbourhoods (census block groups) in Louisville, Kentucky to conduct a mixed method, comparative case study inquiry into the effectiveness of the Healthy in a Hurry Corner Store Initiative. Two neighbourhoods are located within the city-identified initiative designated neighbourhood (IDN) area and two outside. One neighbourhood in the IDN is within a half-mile radius of a Healthy in a Hurry corner store, and one neighbourhood in the control area is within a half-mile radius of a food store. Randomly selected households were surveyed in order to measure their attitudes towards the healthy corner store initiative. Seven key stakeholders who were involved with the initiative at different stages in its formation were interviewed as well.

By exploring subjective dimensions of access, this study examined the effectiveness of our existing approaches to food access planning. In so doing, this study will inform future food policies – particularly those on corner store interventions and community stakeholders collaborative planning around food access, and make contributions towards theory in planning for urban food access.
Significance of Study

This study makes several significant contributions to our knowledge and understanding of urban food policies designed to improve access to healthy food in the low-income, low-access communities. Firstly, it reinforces the importance of place and neighbourhood-level policies for neighbourhood and community development plans (Dreier et al., 2004). The study addresses the core issue of ‘access’ in planning for food in cities (Bell et al., 2013). Access is multidimensional and extends beyond availability and affordability. This research develops this idea and explores ‘access’ as a five-dimensional construct – acceptability, accessibility, accommodation, affordability and availability (Penchansky and Thomas, 1981). Where most studies focus predominantly on physical access to healthy food, these five dimensions of ‘access’ are used to measure ‘perceived’ access and thus, advance our understanding of the dynamic interplay between physical or ‘objective’ access and ‘perceived’ access to food (Caspi et al., 2012; Eckert and Shetty, 2011). And in conjunction with the study of ‘perceived’ access, this project is a significant first step in developing a validated instrument to measure perceived access among neighbourhood residents. This instrument, once developed, would be applicable to other community services and amenities such as access to parks and playgrounds, pharmacies, and community centres.

Studying food access in this manner, that is, gathering different data types (both quantitative and qualitative), requires appropriate methodological conceptualisations for acquiring diverse types of data (geographic information systems data, stakeholder interviews, quantified questionnaire results and researcher observations). In using a pragmatic mixed-methods approach, this study responds directly to gaps in the literature and provides a more complete view of decision-making factors (for example, cultural, emotive and economic) in neighbourhood food environments.

Few studies are able to make comparisons on the effects of food policies across neighbourhoods. Being able to make comparisons within and across study areas (initiative and control areas) strengthens our policy recommendations, challenges our notions of ‘depravity’, social exclusion and inclusion, informs urban food policies (Walker et al., 2010; P. Williams and Hubbard, 2001), and contributes towards intra- and inter-city knowledge building and exchange (Sonnino, 2009).
Finally, this research goes beyond observations and descriptions, pulls on its advocacy roots and offers suggestions for substantive change that improves community resiliency through sustainable regional food system and social justice by providing for equal access to healthy foods to every resident at all times.

**Theoretical and Conceptual Frameworks**

In constructing this study, my hope is for this work to reach deep behind the research questions and numbers and to elevate the voices and sentiments of the residents who live in these communities. The idea is to be more than an extractor of data and information for my own use and ends, but to enter into meaningful relationships with families where there is honesty, understanding and compassion as we work together to solve mutual challenges. Inherently we realise that we are all in this together. These values are reflected in a *Critical Theory* of urban planning (Forester, 1980), that guides planners ethically and professionally. Given the fact that planning functions within a complex political space (Forester, 1989; J. Friedmann, 1987), often planners contribute to community mistrust by communicating false ideas and misperceptions of plans and their benefits to community residents. The critical theory in planning framework is a communicative and democratising practice to correct false perceptions of plans and reveal true alternatives to restore planner-community trust (Forester, 1980; Hoch, 2007; Marcuse, 2009).

The study’s methodological approach flows from this critical framework. The Pragmatist-Participatory theoretical paradigm in social science values participants’ contribution to the richness of the research. Epistemologically it provides for multiple data collection methods and is able to blend both quantitative and qualitative data in describing the life experiences of residents. The use of the multiple-case study method of inquiry within a convergent mixed method research strategy speaks to this pragmatic and collaborative foundation (Creswell and Plano Clark, 2011; Creswell, 2009, 2013). This research study also highlights ideas of equity, social justice and civic transformation that are also situated within the Transformative/Postmodern theoretical framework.

**Organisation of Dissertation**

The proceeding chapters build on the background that I established above. I provided a broad overview of the history of Louisville, Kentucky, the scarcity of supermarkets in West Louisville neighbourhood areas that contributed to the existence of negative health outcomes, and the Healthy in a Hurry Corner Store Initiative implemented to address this health issue. In
Chapter Two, through a review of the literature, I expand on the research problem of access that was introduced in this chapter. First, I describe the global food crisis and its manifestation in local communities. Next, I discuss our current understanding and measures of food access and how those determine our intervention choices for improvements. And finally, I present the Five Dimensions of Access as a more complete approach to understanding access and the food environment.
CHAPTER TWO

REVIEW OF LITERATURE

Introduction

Louisville as with many other similarly mid-sized post-industrial cities in the United States, has experienced growing health disparities among its citizens. Low consumption of fibre-rich fresh fruits and vegetables and physical activity, and high, prolonged exposure to energy-dense, highly processed foods have led to increased body mass index (or BMI) in children and adults in food insecure neighbourhoods (Black and Macinko, 2008; Block et al., 2011; Inagami et al., 2006; C. Smith et al., 2009). Residents of these neighbourhoods are also at greater risk for cardiovascular diseases such as Type Two Diabetes and some forms of cancer (Alliance, 2007; P. Smith, Pennington, Crabtree, and Illback, 2011). However, before I discuss the spatial unevenness of healthy food access and planners’ efforts at addressing this issue, I will provide background on the global food crisis. Then, I situate access contextually, and discuss municipal planning efforts to affect food access in food insecure communities. Lastly, I present the Five Dimensions of Access as a model that builds upon previous studies and contributes to a broader and more holistic view of the local food environment and healthy food access.

The Global Food Regime

An in-depth discussion of the major forces, trade policies, tariffs and regulations affecting food access globally is beyond the scope of this study, yet some background is warranted. The thesis of this dissertation centres on the scarcity of healthy food and food choices in low-income areas; however, food scarcity and poor distribution is not new. What is new is the heightened pace, scope and depth of these conditions that are now being registered in the daily experiences of North American (United States primarily) residents in the form of higher food prices, the disappearance of small, family farms, local food and food justice movements, and the displacement of small grocery stores from urban neighbourhoods (Allen and Wilson, 2008; Gottlieb and Joshi, 2010; Hinrichs and Lyson, 2007). Commentators added that although these conditions vary by geography and intensity, they emanate from a common source – the globalisation of food production, trade and distribution networks (Allen and Wilson, 2008; H. Friedmann, 1993; McMichael, 2009).
The first global food regime (1870s-1930s) was characterised by the extraction and shipment of raw food resources (such as sugar cane and wheat) from European colonies in the global South to power Europe’s Industrial Revolution (Burch and Lawrence, 2009; H. Friedmann, 1993; Holt-Giménez, 2011b; McMichael, 2009). This regime eventually dissolved as countries instituted new policies to protect their farmers and agricultural industries. The resultant global food crisis of the mid-Twentieth Century stemmed from the lack of regulations to sanction food production, consumption and trade between nations and transnational corporations. Conditions worsened when an alternative international proposal to establish a World Food Board failed in 1947 resulted in the establishment of the ‘food regime’ – ‘the rule-governed structure of production and consumption of food on a world scale’, shortly thereafter (H. Friedmann, 1993; Holt-Giménez and Shattuck, 2011). This recent shift in the transfer of foodstuff from North to South, however, was influenced through post-World War Two United States domestic farm policies that provided immense amounts of environmental subsidies, protective tariffs and price supports for Midwestern farmers (H. Friedmann, 1993; Holt-Giménez, 2011).

These domestic policies that were soon replicated by European countries and integrated by other donor and recipient nations globally, incentivised overproduction of grains (including cotton and corn), and stimulated the enactment of foreign policies (including Food Aid after 1954) designed to open foreign markets in the global South to absorb the food surpluses. Momentum also came from the Green Revolution which was originally intended to end world hunger during the 1960s and 1970s. Structural Adjustment Programmes (SAPs) imposed upon poorer countries of the South by the International Monetary Fund and the World Bank during the 1980s and 1990s, resulted in the monopolisation of seeds by northern companies, shrinking forests, the global shift to a fossil fuelled-based agricultural economy, the displacement of millions of peasant farmers and the formation of urban slums (Holt-Giménez, 2008; McMichael, 2008; Patel, 2007; Shiva, 2000). In addition, regional free trade agreements (North American Free Trade Agreement, for example) and austere World Trade Organisation stipulations further ensured the ‘dumping’ of surplus agricultural commodities by northern multinational companies, the erosion of Southern markets, and the continued dependency of countries of the South on those of the North (Holt-Giménez, 2011; McMichael, 2009b).
Scholars are now documenting a third food regime described as the ‘financialisation’ of the global food system (Burch and Lawrence, 2009). The corporate food regime, as it is called, is characterised by heavy financial investments by transnational agro-firms, food manufacturers and supermarkets. These actors seek to connect food to other issues such as animal welfare, environmental pollution, energy use, gender and racial inequalities, and even banking thereby creating new classes of consumers. Wal-Mart, for example, which is one of five firms that control 48 per cent of U.S. food retailing, caters to low-income families, while Whole Foods (a co-opted counter-cultural term) markets to higher income residents (Burch and Lawrence, 2009; Holt-Giménez, 2011).

The contemporary corporate food regime has other far-reaching effects such as the ‘de-peasantisation’ of the countryside – forcing many to the cities for employment. And with structural adjustment policies such as reduced social spending, there have been millions of rural and urban poor marginalised from the global market. In some instances, families are confined to small rural towns or suburban favelas where survival depends on subsistence farming with the threat of hunger ever present (Bello, 2008; Holt-Giménez and Shattuck, 2011). While others living in central city neighbourhoods adapt their lives to poor access to healthy food, higher food prices than those of supermarkets, and easy access to energy-dense food-products derived from the subsidised food commodities such as sugar, corn, wheat and soy (Allen and Wilson, 2008; H. Friedmann, 1993; Holt-Giménez, 2011).

Paradoxically, the global corporate food regime also galvanised local movements such as, the Food Sovereignty Movement, Fair Trade Movement, Slow Food Movement, and the U.S. Local Food Movement, intended to ameliorate its negative effects (Allen and Wilson, 2008). Allen and Wilson (2008) among other scholars noted that these local movements often reflect a short-sightedness, however, that is detached from global economic realities and may even unwittingly contribute to the identified injustices. Thus, there is a danger in focusing on the local without an acknowledgement of the ‘scope and depth of inequalities’ brought on by agrifood policies as in doing so may constrict broader political engagements for solutions (Allen and Wilson, 2008; Born and Purcell, 2006). This ‘global sense of the local’, as some scholar-activist envisage, requires that we interpret food as a human right first and as a commodity only after all nutritional needs are met. It requires that we depart from focusing on strategies to promote equal access, and develop those that engender democratic and participatory community-based control.
over the local food environment (Allen and Wilson, 2008; Guthman, 2011; Mares and Peña, 2011).

In the proceeding sections I describe the formation of ‘grocery gaps’ (also referred to as ‘food deserts’) and discuss their connection to observed public health outcomes. This discussion is contextualised in Louisville, Kentucky.

**Local ‘Grocery Gaps’**

The global restructuring of food production, consumption and distribution has had real effects on the lives of many families. These global policies have created regions of food unevenness within the same country – oftentimes areas experiencing famine coexist with regions of prosperity (Bello, 2008). In advanced economies of Europe and the U.S. particularly, ‘gaps’ in healthy food availability and disparities in food access have risen to the public agenda where policy analysts and planners work to address the effects. The term ‘food desert’, as these gaps are more commonly referred, was first used in Scotland, United Kingdom in the early 1990s and was later applied to the United States context (Cummins and Macintyre, 2002). Although popular, this term is less precise than ‘grocery gap’ which refers to the physical condition of the food environment where spaces exist between grocery store service areas (Treuhaft and Karpyn, 2010). As is often the case in ‘low access’ areas, energy-dense snack food and fast-food restaurants are nearby, this has prompted the term ‘food swamp’ as a more accurate term by some scholars (Fielding and Simon, 2011; Rose et al., 2009).

The formation of these gaps in healthy food availability in wealthy nations, closely mirror the global food policy trends. At the turn of the Twentieth Century, local independent grocery stores occupied a substantial share of the retail industry and had considerable political power to influence policies in their favour. They were able to control food pricing and mergers through the Robinson-Patman Act of 1936 (also known as the ‘anti-A&P law’) which restricted wholesalers from setting variable prices on goods to retailers in the same market when business transaction costs were the same (Eisenhauer, 2001). However, these conditions changed during and after the years of World War II. As men went off to fight leaving women and children with limited incomes, many independent retailers, who already had thin profit margins (1%) and suffered high owner turnover rates, were forced out of business. In the post-War years, federal housing policy that encouraged homeownership through long-term loans to returning servicemen and other citizens were not extended to minorities. In addition, transportation policies that
connected central cities to the burgeoning suburbs, and urban renewal and economic development projects eviscerated social networks in central city low-income, minority communities (Dreier et al., 2004; Eisenhauer, 2001). With ‘white flight’ now under way and retail stores weakened, self-service supermarkets transitioned to suburban spaces on cheap, large plots of land. After mergers and buy-outs, five firms, Wal-Mart, Kroger, Albertson’s, Safeway and Ahold, dominated 48 per cent of U.S. food retailing (Holt-Giménez, 2011). And by the 1980s central cities had a net loss in supermarkets. Safeway, for example, had closed more than 600 urban stores nationally, leaving gaps in food availability at the city’s core (Bitler and Haider, 2009; Raja et al., 2008; A. Short et al., 2007).

**Healthy Food Access**

Although far from universal agreement, many studies have suggested that the presence of supermarkets influence families’ consumption of fruits and vegetables and thereby, their health (Grigsby-Toussaint et al., 2010; Kwate, 2008; Pothukuchi, 2005; Raja et al., 2010). The notion is that supermarkets, which tend to be fewer in number in low income minority communities, are the best sources for affordable healthy food (Flournoy, 2011; Ploeg et al., 2012). This *deprivation amplification* theory suggests that low-income minority neighbourhoods tend to possess fewer health-promoting resources, such as supermarkets or other sources of healthy food, compared to their high-income ‘white’ counterparts (Cummins, 2007; Macintyre, 2007; D. M. Smith et al., 2010). As such, this theory has been influential in explaining the spatial health disparities and chronic diet-related diseases observed across neighbourhoods and in proposed strategies for its amelioration.

**Food Access and Health Outcomes.** Research on place and neighbourhoods increasingly show that the physical environment within which one is born, live, work, play and age substantively affects our life opportunities, health and well being. Place matters (Community Farm Alliance, 2007; Dreier et al., 2004; Laska et al., 2010; Lovasi et al., 2009; Macintyre et al., 2002; D. M. Smith et al., 2010; L. M. Smith, 2008; P. Smith et al., 2011). Although in 1998 a U.S. Centers for Disease Control (CDC) report stated that the overall health of Americans was improving, by 2012 a U.S. Department of Agriculture study found that 16.4
per cent of the population, or 50.1 million people, lived in food insecure\textsuperscript{2} neighbourhoods, and that 37.6 per cent of low-income households are food insecure. Conditions were more troublesome for low income African Americans, Hispanics and other minority groups (Bodor et al., 2010; Gottlieb and Fisher, 1995; Guthman, 2008a; Slocum, 2006, 2007; Zenk et al., 2005). The morbidity and mortality rates among these groups had increased while access to health care and rates of insurance coverage had fallen (Eisenhauer, 2001). The report continued that these minority groups were disproportionately suffering from ‘diseases of lifestyle’, namely, obesity, coronary heart disease and Type II Diabetes. They also found that race in conjunction with the lack of urban amenities such as parks and recreational spaces, public transportation, income, health care and large, full-service supermarkets contributed to this phenomenon (Eisenhauer, 2001; A. Short et al., 2007; P. Smith et al., 2011).

Other studies have shown a statistically significant link between the racial composition of a neighbourhood and the density of fast food restaurants. Fast food restaurants are geographically associated with predominantly Black (80 per cent or higher) and low-income neighbourhoods (Block et al., 2004), even after controlling for commercial activity, the presence of highways and median home values. The percentage of Black residents is a more powerful predictor of fast-food restaurant density than median household income. Put another way, Kwate (2008) stated that the fundamental cause of fast-food density in predominantly Black neighbourhoods is race-based residential segregation. Block and colleagues (2004) found that there were 2.4 fast food restaurants in predominantly Black neighbourhoods compared to 1.5 restaurants in predominantly White neighbourhoods. Race is also a significant factor in the presence of large chain supermarkets. Black neighbourhoods not only tend to have half the availability of supermarkets than White neighbourhoods. But also, low income African Americans tended to live 1.1 miles farther away from the nearest supermarket than do their low income White counterparts (Block et al., 2004; Odoms-Young et al., 2009; Powell et al., 2007; Zenk et al., 2005).

Often our selection in food to eat is based on the choices available to us in our neighbourhoods of residence (Ploeg, 2010; Walker et al., 2012). And limited food choices in neighbourhoods coupled with protracted exposure to energy-dense, processed food rather than

\textsuperscript{2}In reference to community needs and not an individual’s condition of hunger, Food Security is defined as ‘all persons, at all times, a culturally acceptable, nutritionally adequate diet through local, non-emergency sources.’ This definition differs from that of the World Bank that omits the terms ‘cultural’ relevance and ‘non-emergency’ sources.
high-fibre diets may lead to poor health outcomes (Cummins, 2007; Diez Roux, 2001; Ellaway et al., 2012). Residents in food insecure communities have shown to have higher rates of cardiovascular diseases. And obesity is 50 per cent more prevalent in low-income households (Laska et al., 2010; Morland et al., 2006; Morland and Evenson, 2009; Morland et al., 2002; Raja et al., 2010). In this Louisville case study, neighbourhoods identified as food insecure showed diabetes mortality rates up to three times higher than the Metro Louisville rate, and residents in the poorest neighbourhoods have life expectancies ten years shorter than residents in other neighbourhoods in Louisville (L. M. Smith, 2008; P. Smith et al., 2011).

In addressing the stark differences in residents’ health in Metro Louisville, the results of a Center for Health Equity report (2011) found that the disparities in health outcomes (or health inequalities) between residents of West Louisville-East Downtown and the remainder of Metro Louisville goes beyond genetics, access to health care and individual behaviour. These health disparities, the report stated, are the result of the confluence of historical, social, physical and economic contributors that shape opportunities in neighbourhoods. Histories that are characterised by asymmetrical power among neighbourhoods and urban policies derived from generations of structural racism. These health disparities then, have social determinants that are founded on avoidable and systemic inequities that negatively affect groups based on racial and ethnic identity, religion, gender, age, socioeconomic status, mental health, sexual orientation and geographic location (Committee, 2010; L. M. Smith, 2008; P. Smith et al., 2011). As such, the Center for Health Equity in collaboration with key community stakeholders identified nine social determinants of health in Louisville: Income and Employment, Housing, Environmental Quality, Education, Transportation, Food Access, Health Care, Community Safety, and Parks and Physical Activity. This study explored the effects of the Healthy in a Hurry Corner Store Initiative, which was one strategy that was designed to increase residents’ access to healthy food and beverages in initiative designated neighbourhoods (IDN). These ‘Social Determinants of Health’ referred to two sets of constructs that affect our quality of life in neighbourhoods. They spoke to the availability of health protective resources such as healthy food and housing services, and the presence of risk factors such as chronically stressful situations, insecurity and the lack of a supportive neighbourhood environment (P. Smith et al., 2011). The ‘deprivation amplification’ theory provided a conceptual lens for this systemic view of the food environment as well as suggesting strategies for its improvement.
**Ameliorative Strategies.** The concept of ‘deprivation’ supports the notion that critical elements are absent, and when these quantifiable elements are introduced into the environment, deprivation no longer exists and access is improved. As such, public initiatives to increase access to healthy food and thereby improve health outcomes in ‘grocery gaps’ are usually a hybrid of two forms, demand-side (adding customers by making healthy food more affordable) and supply-side (adding more healthy food where there was insufficient relative to demand) approaches (Alkon et al., 2013). Demand-side approaches usually take the form of the issuance of food vouchers such as the Supplemental Nutrition Program for Women, Infants, and Children (WIC) with modifications for healthy food or to be used at farmers’ markets and other alternative food sources (Allen and Sachs, 2007; Bitler and Haider, 2009; Pothukuchi and Kaufman, 1999; Slocum, 2006). Another is the Supplemental Nutrition Assistance Program (SNAP) that transfers cash benefits to qualified low-income residents with which they may purchase food (Bell et al., 2013; Flournoy, 2011; Ploeg, 2010). Both of these programmes have been found to be effective in increasing the affordability of healthy food to low-income families (Bitler and Haider, 2009; C. Smith et al., 2009). However, not all neighbourhood stores are eligible to participate in WIC or SNAP programmes. This is due to the current policy that stores must offer at least three varieties of each staple food group - breads and grains, dairy, fruits and vegetables, and meat, poultry and fish (Bitler and Haider, 2009). As such, many neighbourhood stores are not eligible and families must travel to distant supermarkets for healthy food. In addition, there have been calls to increase SNAP and WIC allotments to stay abreast with increased redemption at food stores and with the overall growing enrolment in these needs-based transfer programmes (Bitler and Haider, 2009; Center, 2011; Resources, 2012).

In Louisville-Jefferson County, Kentucky, for instance, SNAP redemptions at food stores increased by 73 per cent between 2010 and 2008, while WIC redemption remained the same during that period. And overall enrolment in SNAP for the state of Kentucky increased by approximately 2.5 per cent from 16.3% to 18.8% of eligible individuals between 2009 and 2011, even as food insecurity declined nationally (Resources, 2012). Educational programmes are another form of demand-side strategies utilised (Gittelsohn, Song, et al., 2010; P. J. Morgan et al., 2010; Vallianatos et al., 2004). These may be nutritional and cooking classes where residents are taught the nutritional value of and how to prepare fresh produce at home (Alkon et al., 2013). In tandem with supply-side strategies, educational programmes can be helpful to increase access
and lower the negative health outcomes often associated with unhealthy diets. However, the sentiment behind them has been criticised as paternalistic, suggesting that residents would buy more healthy food if they knew how to prepare them (Alkon et al., 2013; Guthman, 2010, 2011). Alkon and colleagues (2013) found that families were not only knowledgeable of and valued healthy foods, they often left their neighbourhoods to shop at grocery stores in other neighbourhoods where healthy food is available.

Policies aimed at increasing the supply of healthy food in neighbourhoods are usually local economic development plans to attract a supermarket to the area, placing healthy food in existing local corner stores, developing farmers’ markets, and mobile fresh produce markets among others (Alkon and Mares, 2012; Morales, 2009; Pothukuchi, 2005; H.-J. Song et al., 2009). Supply-side approaches reorient the argument towards the environment within which families live, and seek to change the food environment from obesogenic to health-promoting (Guthman, 2008a, 2011). However, supply-side strategies are also fraught with problems. Attracting large grocery stores to low-income areas is challenging due to site requirements, lack of political will and stakeholder buy-in, issues of area perception, understanding the retail market and incentives, and insufficient income base to support store profitability, among others (PolicyLink, 2007; Pothukuchi, 2005). And although activists in Philadelphia were successful in getting tax breaks and subsidised loans for stores that wanted to locate in low-access communities, the incentives also attracted large chain stores such as Wal-Mart and Whole Foods, to which other activists condemned the incentives as attempts at land-grabbing and gentrification (Alkon et al., 2013). More recently, planners and scholars have turned their attention to neighbourhood corner stores as a crucial player in affecting changes in neighbourhood food environments.

**Corner Stores: Rationale and Potential**

Urban scholars have observed that families in many food insecure urban areas acquire much of their energy intake from meals procured from nearby fast-food restaurants and small neighbourhood corner stores (Borradale et al., 2009; Gebauer and Laska, 2011; Laska et al., 2010; Morland et al., 2002). Calories acquired from these foods, however, in conjunction with poor access to healthier foods available in emigrated large supermarkets, have contributed to the prevalence of high obesity rates among residents and school-aged children in particular. (Eisenhauer, 2001; Laraia et al., 2004; Morland et al., 2006; Pearce et al., 2008; Zenk et al.,
It must be noted as well, that corner stores are one of few businesses located in challenged communities. Partly due to the economic conditions of the communities they serve, corner stores suffer from thin profit margins and usually stock items such as alcoholic beverages and tobacco products that would generate profits (Laska et al., 2010; Lucan et al., 2010; H.-J. Song et al., 2011). However, due to their high frequency of use, corner stores are uniquely positioned to improve the nutritional environment and healthy food access by increasing consumer knowledge, self-efficacy and behaviour about healthy food choices at the point of purchase (Borradaile et al., 2009; Nutrition, 2013). In addition, this strategy aligns well with the ‘deprivation amplification’ theory discussed earlier, as it seeks to affect change on both the individual and organisational levels. That is, it aims to change residents’ behaviour to purchase and consume more healthy food, as well as corner store practices to increase the availability of healthy food options (Cummins and Macintyre, 2006; Gittelsohn, Suratkar, et al., 2010; Nutrition, 2013; D. M. Smith et al., 2010; H.-J. Song et al., 2011).

Despite the difficulty in implementing a corner store intervention and its uncertainty of results, of late, many municipalities, including the city of Louisville as discussed in this project, have been implementing corner store strategies to improve food access in both urban and rural areas (Dannefer et al., 2012; Gittelsohn et al., 2006; Gittelsohn, Suratkar, et al., 2010; Martin et al., 2012; Pitts et al., 2013). However often, these interventions are inappropriately designed and/or implemented resulting in loss of community resources. Recent evaluative research has identified seven core elements and five barriers that must be overcome to improve intervention effectiveness (Nutrition, 2013).

The core elements of the corner store initiative are crucial for the intervention’s design and effectiveness (Nutrition, 2013). First, the corner store programme should be easily identifiable by customers by its name, logo, advertising flyers, displays, posters, and its association with products that correspond with healthier food choices (Gittelsohn, Suratkar, et al., 2010). Second, intervention decision makers must utilise different strategies to recruit corner store owners to the programme particularly, and as is often the case in urban settings, when the store owner is of an ethnic and cultural background different from its neighbourhood families. This may include the establishment of collaborative relationships between programme implementers and storeowners (H.-J. Song et al., 2011). Third, recruited storeowners should be supported with nutrition education to be able to participate successfully in the programme. This
entails learning about the nutritional content of foods that are culturally appropriate for the customers in the area. Fourth, storeowners also require support in purchasing and stocking healthy foods. Incentives in the form of wholesale gift cards are helpful in sourcing healthy food; while training sessions on stocking and presenting fruits and vegetables help in food preservation and ensure they are easily seen by customers. Fifth, healthy food should be promoted and marketed through culturally appropriate signage, label and focus group sessions. Sixth, as each store is different in size and layout, programme administrators should tailor programme displays and activities to settings of the targeted store. And seventh, customer interest and demand for healthy food can be improved through in-store cooking demonstrations, taste tests, and interacting with customers in the store answering questions about healthy food options (Nutrition, 2013).

The extent to which these core elements are implemented is usually dependent on available resources for the corner store intervention. Consequently, some challenges such as providing storeowner incentives and recruitment may be hampered by limited funding. However, other obstacles require deeper emotive and socio-cultural understanding to address effectively (Nutrition, 2013): 1) The corner store strategy is labour intensive both for the corner stores and the managing organisation. Corner storeowners are able to hire very few staff if any at all and spend most of their time in the stores leaving little time for training staff in food handling or organising focus groups and food workshops. Programme monitoring is also a challenge as managing agencies must maintain sufficient staff to make frequent visits to corner stores to monitor progress, respond to storeowner issues and concerns and collect sales data. 2) Often times it is difficult to obtain storeowner support due to cultural and language barriers. And high turnover rates of corner store ownership due to thin profit margins are a challenge to programme longevity. 3) Some storeowners fear crime would increase due to the new attention brought to their store. This will have the effect of reducing already small profits. 4) Distributors are reluctant to deliver fresh fruits and vegetables to areas they perceive as having high crime rates, low demand for and low income to purchase for fresh food. This drives up the cost of participation in the intervention for corner stores. And lastly, the longevity of the initiative is hampered if demand for fresh food is weak (Nutrition, 2013).

In the following subsection, I describe the inception of the Healthy in a Hurry Corner Store Initiative implemented in low access areas in Louisville, Kentucky to improve healthy food
access to families. This programme rests on our conventional notions of access that considers food availability, affordability and store location solely, while situated in the ‘deprivation amplification’ theory that suggests changing the physical infrastructure alone will improve food access and health. I challenge these ideas later in this chapter where I also present an extended conceptualisation of access.

**The ‘Healthy in a Hurry Corner Store Initiative’**

The observed health disparities and increase in preventable diseases across Louisville neighbourhoods galvanised community-wide conversations in early 2000s concerning the health of particular segments of city residents and food access, or the lack therefore, as a contributor to this public health issue. Community stakeholders organised a Food Policy Council to examine access to healthy food in Louisville in 2003 when Community Farm Alliance (CFA), a grassroots non-profit and local-food advocacy organisation, expanded to Jefferson County (Jennings, 2011). Three years later the city formed the Center for Health Equity, a division of the Louisville Metro Department of Public Health and Wellness, with its mission to ‘eliminate social and economic barriers to good health, reshape the public health landscape, and serve as a catalyst for collaboration between communities, organizations and government entities through capacity building, policy and evidence-based initiatives’ (Louisville, 2014a; Montgomery et al., 2009; Skow, 2012). The 2007 Community Farm Alliance report, ‘Bridging the Divided’, that identified ‘food deserts’ in Louisville, mobilised key community stakeholders – the Economic Development Department, University of Louisville, Community Farm Alliance, Metro United Way, the Food Security Task Force and the Young Men Christian Association of Greater Louisville (YMCA henceforth), to address the issue of food access in neighbourhoods.

In 2008, a YMCA-organised community steering committee selected *food access* as one of two main community health priority areas for further examination (Semi-structured interview with key stakeholder, 2013). And, with the recent ground-breaking 2007 CFA study on food deserts as context, the steering committee members attended a Community Food Security Coalition conference in Philadelphia to learn about the first successful corner store intervention model. The next year, the YMCA (of Greater Louisville) received a Pioneering Healthier Communities grant (now called Healthier Communities Grant) from the YMCA of America and established the Smoketown DollarPlus corner store in the Smoketown Jackson (Smoketown) neighbourhood as the first healthy corner store in the pilot ‘Healthy in a Hurry Corner Store’
initiative – the name was selected by young people who lived in the Smoketown neighbourhood (Committee, 2010; Montgomery et al., 2009; Skow, 2012). By 2010, the healthy corner store initiative was incorporated into a broader community-wide strategic plan (Wellness, 2010). The Louisville Putting Prevention to Work: Community Action Plan March 2010 – March 2012 codified the city’s strategies to ‘increase levels of physical activity, improve nutrition and decrease the prevalence of the city’s overweight/obese population’. The document outlined seven strategies with outcome objectives. They were:

A) School-nutrition strategies  
B) School-based physical activity/physical education  
C) Afterschool/childcare setting  
D) Community strategies to improve nutrition  
E) Community strategies to improve food access  
F) Community strategies to improve physical activity access  
G) Social marketing strategies.

Strategy E - Community strategies to improve food access, listed one of its objectives as:  

Objective 1: By March, 2012, an increase in access to healthy food and beverage for 50,000 households in the initiative-designated neighbourhoods (IDN).

This strategy called for the YMCA to collaborate with community partners to improve the availability of fresh fruits and vegetables in corner stores, farmers markets, community gardens and mobile markets in the twelve initiative designated neighbourhoods. In the case of corner stores, there is a choice of two strategies to pursue: 1) using existing store facilities, or 2) changing store’s infrastructure through aesthetics and signage, display cases and refrigeration (Nutrition, 2013). The corner store initiative in Louisville implemented the second approach, and terms of agreement were expressed in a contract between the YMCA and the participating corner storeowners (See Appendix I). These investments included grants for signage, refrigeration, store exterior improvements, funds to offset costs of introducing fresh produce to stores, public relations campaign, marketing and branding, and other technical assistance such as corner store networking and mentoring. Since the stores have different needs, fund allocation varied by store (Wellness, 2010; Semi-structured key stakeholder interview, 2013).

The contract stipulated that storeowners would use funds only for initiative-approved healthy items, and that they recognise the equipment and physical improvements are the property
of the YMCA and can be withdrawn due to misuse or violation of the terms. Storeowners were to collect data on fresh produce sales, disclose financial records to healthy corner store initiative representative in order to monitor sales and inventory of fresh produce, and to cooperate with the media to highlight the programme. Furthermore, corner storeowners understood that the role of the YMCA was only temporary, and that the CPPW grant would expire in the Spring of 2012, after which, stores would be on their own.

With plans of growing the healthy corner store initiative, the YMCA collaborated with the Louisville Metro Department of Public Health and Wellness (LMPHW) and the Center for Health Equity to secure a Communities Putting Prevention to Work (CPPW) grant through the American Recovery and Reinvestment Act-Prevention and Wellness Initiative which listed food access as one of its twenty-four strategies to impact health (Semi-structured interview of key stakeholder, 2013). The majority of the $7.9 Million grant (March, 2010) was used to expand the initiative by increasing the number of participating corner stores and the levels of financial and technical assistance to stores up to $15,000, and the balance to remunerate the YMCA as the subcontractor to administer the programme – the employment of a programme Director. In three months, two corner stores were added to the intervention, Shawnee Market and Parkway Food Mart, both in West Louisville. Four other stores enrolled in the initiative shortly thereafter (Skow, 2012; Semi-structured interview, 2013).

This, as well as similar healthy corner store interventions implemented in other cities nationwide, reflected a conceptual framework originating from social cognitive theory (Bandura, 1986; Gittelsohn, Suratkar, et al., 2010; Nutrition, 2013). Social cognitive theory examines individual and group behaviour in relation to exogenous environmental factors and internal self-reflectiveness on ones capabilities and purpose in doing so (Bandura, 2001). That is, improving neighbourhood food environments by introducing healthy foods in corner stores would increase awareness of healthy foods to families, who would acquire the skills to prepare them where necessary, purchase and consume these foods (Nutrition, 2013). The objective of the Healthy in a Hurry Corner Store programme as a part of the Mayor’s broader health initiative was to change the neighbourhoods’ food environment by directly influencing the availability, awareness and skills for selecting fresh fruits and vegetables at the point-of-purchase (Gittelsohn, Song, et al., 2010; Gittelsohn, Suratkar, et al., 2010; P. J. Morgan et al., 2010). And it was hoped that through a measurable decrease in neighbourhood obesity rates and diet-related diseases, that the
intervention would indicate an increase in residents’ knowledge, self-efficacy, and behavioural patterns to select, prepare and consume healthier foods, and thereby reducing the observed negative health outcomes over time (Gittelsohn et al., 2012; C. Smith et al., 2009; H.-J. Song et al., 2011; Williams, et al., 2010). While the healthy corner store strategy reflects an awareness of the intrinsic multi-dimensionality of access, identifying and fully incorporating these variables in interventions have shown to be a challenge, however.

**Access Re-Conceptualised**

This dissertation project used the healthy corner store initiative in Louisville, Kentucky to illustrate that our definition of access supported by the ‘deprivation amplification’ theory does not take us the complete way in understanding food access in neighbourhoods. Not only is our view of access limited to objective measures such as socio-spatial analysis, pricing, availability and volume. But we also fail to consider qualitative elements of perceived food quality, area crime and store environment which are vital in understanding food procurement decisions (Alkon et al., 2013; DeLind, 2006; McCormack et al., 2007; Ploeg et al., 2012; Raja et al., 2010; Walker et al., 2010). For instance, the U.S. Department of Agriculture (2012) report defined ‘low-income, low-access’ *urban* areas as ‘a low-income census tract in which at least 100 households are located more than one half mile from the nearest supermarket and have no vehicle access’. This definition does not consider emotive criteria such as residents’ perception of crime in the vicinity of the store or the relationships between storeowner and neighbourhood families, which studies have shown to be critical in assessing food access (Freedman and Bell, 2009; L. V. Moore et al., 2012; Sharkey et al., 2010). And although proximity to food stores is necessary and has been shown to be associated with increase awareness of healthy food, results have been mixed on whether objective measures alone have increased healthy food selection and consumption (Bodor et al., 2008; Cummins et al., 2014; Inagami et al., 2006; Laraia et al., 2004; Pearce et al., 2007).

The ‘deprivation amplification’ theory must also be revisited (Macintyre, 2007). This theory commits two transgressions. First, the definition of ‘deprivation’ is implied based on aforementioned concept of access that only considers objective measures. As such, families are understood to be deprived based on their proximity to large supermarkets and food stores without

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3 Retrieved from: http://www.ers.usda.gov/data-products/food-access-research-atlas/documentation.aspx. Low-income = census tract’s poverty rate is 20% or greater, or median household income is less than or equal to 80% of statewide median family income. Low-access = 500 people or 33% of population live more than 1 mile away from supermarket or supercenter.
the consideration of social networks and relationships that might mitigate the issue of distance. Furthermore, there is the concomitant non sequitur argument that being deprived equates to being without access (Pearce, Hiscock, et al., 2008; Pearce et al., 2007; D. M. Smith et al., 2010). Research findings on this topic have been varied. While it was stated earlier in this dissertation that residence in a geographical area identified as a ‘food desert’ was said to limit families’ access to healthy food, this was not shown to be the case in all places. Winkler et al. (2006) found no differences in price and availability of healthy food based on the socioeconomic characteristic of the area. Pearce and colleagues (2008) showed that access tended to be better in more deprived neighbourhoods in New Zealand. However, studies conducted in the United States have shown that place does affect availability of healthy food and access to large grocery stores when income and race are considered (Beaulac et al., 2009; Chung and Myers, Jr., 1999; Kwate, 2008; Moore and Diez Roux, 2006; Zenk, Schulz, Hollis-Neely, et al., 2005). Furthermore, Coveney and O’Dwyer (2009) concluded that living in a ‘food desert’, by itself, did not hinder access to healthy food. They found that residents’ social networks in allowing them to access private transportation was the major determining factor in healthy food access. At best, perhaps we can agree with the conclusion by Smith et al. (2010) that the relationship between distressed neighbourhoods and grocery store accessibility vary by environmental setting. They call for more studies that explore the context of spatial inequalities and exposure to unhealthy diets. Other scholars are critical of the causal link between poor access to healthful foods and negative health outcomes (Cummins and Macintyre, 2006; Laraia et al., 2004; Pearce et al., 2008). As we have seen, although there is a relationship between place and access to healthy food, we have not yet been able to clarify that relationship, or develop policies to that would result in better health outcomes for families in deprived areas. More recently, scholars are calling for research to be conducted on perception measures that would complement quantitative and GIS study findings and deliver a more complete view of food access (Black and Macinko, 2008; Caspi et al., 2012; Guthman, 2011; Sharkey et al., 2010; Widener et al., 2011).

**Five Dimensions of Access: A Theoretical Broadening of Access**

The purpose of this research study was to explore the effects the healthy corner store intervention has had on residents’ objective and perceived access to healthy food. Thus far, I have described the macro exogenous and local forces that have interacted to produce the phenomenon of unevenly distribution health food in many cities and rural areas of advanced
economies of Western Europe and North America. I then discussed the health outcomes associated with poor access to fibre-rich foods and easy access to energy-dense food sources in low-income neighbourhoods. As municipal interventions, such as attempts to increase healthy food access through corner stores, are based on an incomplete understanding of access, in this section I construct a broader conceptualisation of access that goes farther in satisfying the gaps in the literature, and opens the door to more effective planning and public policies designed to improve access to healthy food.

Although the construct ‘access’ is used frequently across many fields of practice and study, it remains inadequately defined (Penchansky and Thomas, 1981; Ribot and Peluso, 2003). In some contexts access is conceptualised as entry into or use of a ‘thing’ – a product or service. In others, access is defined as a set of factors influencing one’s entry or use of products or service. It also refers to one’s ability to derive benefit from ‘things’ (Ribot and Peluso, 2003). Given the context of this study that focuses on the food environment and residents’ abilities to make food selections, access is conceptualised as a broad set of ‘strands’ or an aggregation of factors that influence residents’ ability to acquire and benefit from healthy food (Penchansky and Thomas, 1981; Ribot and Peluso, 2003). This conceptualisation of access as a bundle of factors influencing resident’s abilities highlights the social interactions that occur between residents and their socio-political environment that can constrain or enable them to benefit from resources. These factors include political, economic and cultural norms that configure access to resources across the landscape. As these bundles of factors shift over time, and people are situated differently in relation to resources over time and space, these strands affect people’s power (self-efficacy) and level of access to resources (Penchansky and Thomas, 1981; Ribot and Peluso, 2003). This view presents access as a summary construct of other specific ideas of objective and perceived measures with which residents interact. Thus, in this case study project on access to healthy food, access is also understood as the level of ‘fit’ between residents and the local food system in their ability to meet their nutritional needs.

The model of the Five Dimensions of Access utilised here is an adaptation of Penchansky and Thomas’ (1981) work on access to health care. Figure 1 illustrates a schematic drawing of the five dimensions acceptability, accessibility, accommodation, affordability and availability in relation to the construct being studied.
Acceptability is defined as the relationship of customers’ attitudes about personal and practiced characteristics of store associates and the food being sold to the actual characteristics of store associates and food, as well as the store worker’s attitudes about acceptable personal characteristics of customer. In the literature, the term appears to be used most often to refer to specific consumer reaction to store worker attributes such as age, sex, ethnicity, or religious affiliation. In turn, store workers have attitudes about the preferred attributes of customers. Store workers either may be unwilling to serve certain types of customers or, through accommodation, make themselves more or less available. Acceptability also refers to customers’ perception of the quality and cultural appropriateness of the food. This dimension was operationalised as customers being greeted or helped by store worker; whether the store worker used a negative racial term towards the customer or to someone else in the store, and whether the fruits and vegetables looked wilted or rotten, and were they the types of food the customer would want to eat.

Figure 1. The Five Dimensions of Access

In the food access literature very little scholarly work has been done that investigates the idea of ‘acceptability’ as defined here as residents’ perceptions of their relationships with storeowners and associates. This discussion may be implied within the broader discussion on access and race and cultural relevance of available food. For instance, Guthman (2008a, 2008b)
discusses the inadvertent creation of ‘white’ spaces through the exercise of ‘white privilege’ in the alternative food movement. Often well-intentioned Whites hold paternalistic views on what is ‘healthy’ food and why others should perceive them as such. Slocum’s work (2006, 2007) speaks of the difficulty that middle class progressive Whites have in identifying their role in perpetuating racism in the local food system. However, she identified coalition building with families of other racial backgrounds where there is true power sharing, as useful in dismantling these racist structures. Much more scholarly work has been done on the quality of food in food insecure neighbourhoods. Glanz and colleagues (2007) found that supermarkets and grocery stores had more healthful options and greater quality foods than convenience stores, and these supermarkets were located in higher income neighbourhoods. Hendrickson’s research team (2006) found similarly that food in urban and rural food deserts were of fair or poorer quality when compared to non-food desert areas. And when race and socio-economic class were considered, researchers found that the variety and quality of produce were significantly lower in predominantly African American and low socioeconomic status communities in comparison to racially mixed, middle class areas (Kwate, 2008; Zenk, Schulz, Hollis-Neely, et al., 2005).

Accessibility/Location is defined as the relationship between the location of food stores and the location of residents, taking account of resident transportation resources and travel time, distance and cost. I operationalised accessibility as residents’ mode of transportation, and the length of time it took to travel to the food store. I also asked whether the resident shopped inside their neighbourhood, and whether transportation was a problem for them to eat healthily.

Scholarly discussions on this dimension confirmed the notion that as more chain supermarkets are located outside of urban areas and away from low income communities of colour, residents must travel greater distances to access the same resources as non-poor residents (Chung and Myers, Jr., 1999; Laraia et al., 2004; Powell et al., 2007; Webber, 2010). With the exception of bars and taverns, racially mixed and predominantly white neighbourhoods contained 50% more full-service restaurants than less affluent areas with higher percentages of ethnic minorities (Lewis et al., 2005). And neighbourhoods with 80% black residents had 2.4 fast-food restaurants/sq. mile compared to 1.5 fast-food restaurants/sq. mile in neighbourhoods that were only 20% black (J. P. Block et al., 2004). In addition, due to the fact that poorer families are less likely to possess private motor vehicles in order to access distant food outlets, low-income and minority residents showed higher BMI (Body Mass Index) than those with
better access to health-promoting resources (Cotterill and Franklin, 1995; Gallagher, 2007; Inagami et al., 2006). Finally, in a recent study, researchers demonstrated that one’s place of residence in relation to grocery stores matters significantly. Hilbert and colleagues (2014) calculated the cost of a food basket in combination with transportation costs. They found that cost varied more based on transportation costs than food prices, and that food costs were less for those who used automobile travel than those who used a combination of walking and public transportation.

Accommodation is defined as the relationship between the manner in which the supply of healthy food is organised to accept residents and residents’ ability to accommodate to these factors and the residents’ perception of their appropriateness. Accommodation was operationalised through residents’ perception of store hours of operation, the display of produce, the residents’ perception of crime in the area and the physical condition of the store. In assessing whether the store was able to accommodate residents’ methods of payment, I asked whether the store provided check-cashing services or had an automatic teller machine.

Although evaluative studies of corner store initiatives have demonstrated the importance of culturally appropriate and helpful store workers (Gittelsohn et al., 2012; Gittelsohn, Song, et al., 2010; Nutrition, 2013), studies on the impact on perceived access when food stores provide multiple payment options or when customers’ perception of neighbourhood crime is considered have not been found.

Affordability is defined as the relationship of store prices of healthy food to the residents’ income and ability to pay. It is critical to note the importance of residents’ perception of food value relative to food cost, as well as residents’ knowledge of prices and cost with which to make comparisons for discount shopping. Also, fruits and vegetables must be competitively priced against other energy-dense snack foods and fast-food options. This dimension was operationalised as whether the store accepted EBT (Electronic Benefits Transfer) cards; whether residents’ can afford to buy the produce; whether residents’ believed that the cost of produce was the same or higher in their neighbourhood, and whether cost was a hurdle for them to eat healthy food.

The literature on affordability of healthy food holds with few exception that affordability is an essential component of access and that low income residents tend to pay more for the same food in their communities even when race and region (urban or rural) is taken into account.
(Hendrickson et al., 2006; Ploeg, 2010; Tsang et al., 2007). This may be due to the fact that food access is related more to store type rather than the number of food stores (D. R. Block and Kouba, 2007). Block and Kouba (2007) found that a lower middle class African American community in Chicago had more small grocery stores than supermarkets, although supermarkets provided better quality food at discount prices. Thus, residents were paying more for healthy food. These findings are consistent with others on the affordability of fruits and vegetables in chain supermarkets as compared to neighbourhood food stores and hold significance in terms of food purchasing decisions and quality of diet (Alliance, 2007; Ball et al., 2009; Chung and Myers, Jr., 1999; Zenk et al., 2009). Relatedly, the use of EBT cards by families in need has shown to increase purchases of produce and to be a boon for the local economy (Bitler and Haider, 2009; Flournoy, 2011; Resources, 2012). However, it is unclear to what extent the increased use of food benefits is contributing to overall higher store prices.

*Availability* is defined as the relationship of the volume and variety of existing healthy food (those offered in the healthy corner stores and supermarkets) to residents’ volume and variety of food needs. Availability was operationalised as the presence of sufficient, culturally appropriate fresh produce in the neighbourhood corner store throughout the year.

Studies have consistently showed that large chain supermarkets carry a wider variety of higher quality, affordably priced fruits and vegetables year round when compared to small neighbourhood and rural stores (Alkon et al., 2013; Glanz et al., 2007; Hendrickson et al., 2006; Izumi et al., 2011; Lewis et al., 2005). And although new research has revealed the importance of small food stores in improving access to healthy food, Giskes and colleagues (2007) found that residents’ perception of availability (not actual availability) was associated with the purchase of recommended foods (Bodor et al., 2008; Gustafson et al., 2011). These studies point to the growing awareness of the importance of resident perception of access (Caspi et al., 2012; L. V. Moore et al., 2012).

The five dimensions are not easily separated. Accessibility maybe closely related to availability; availability affects accommodation and acceptability. This shows that the five dimensions closely relate to the construct – access. In addition, each dimension is dynamic: a family may move to another neighbourhood, affecting locational accessibility, or a family member might have secured a better paying position which may affect perceptions of
affordability and accessibility. However, the model remains stable as the dimensions characterise the phenomenon.

This improved conceptualisation of access addresses the gaps in the literature and provides a structure for us extend our understanding of access. Access as indexed by these five dimensions incorporates both objective and perceived measures that together would provide a more complete view of families’ food environment. Increasingly studies have shown that residents’ perception of access is important in food decision making. Sharkey et al. (2010) showed that perception of access affected food consumption and eliminated the difference in food store distance. Moore et al. (2011) found that perception of availability was associated with being white, college-educated and higher incomes. While Caspi et al. (2012) found that perceived access was strongly associated with fruit and vegetable intake.

This model also addresses the ‘deprivation amplification’ theoretical construction now in use. Where deprivation is determined on objective measures alone, the five dimensions allow for the analysis of social networks and relationship formation to complement objective findings. As such, the five dimensions also eliminate the need to assume that all low-income communities are deprived. Finally, this dynamic model can be applied to other community resources such as playgrounds, green space, pharmacies, health care, or child care facilities.

**Chapter Summary**

The forces of global agro-economics, trade tariffs and the actions of multinational corporations have produced unevenness in the global food system that has had local effects on access to healthy food which contributes to undesired health outcomes. In addressing this issue of imbalanced food availability, we have relied upon the notion of access that considers objective elements only. Consequently, food policies designed to improved access have had mixed results. In this chapter I have presented the Five Dimensions of Access as a dynamic model that satisfies the gaps in the food access literature and helpd to extend our understanding of food access in food insecure areas.

In Chapter Three that follows, I discuss my scientific approach - the study’s research design, sampling strategy and methods of data collection and analyses, in addressing the research questions and hypotheses.
CHAPTER THREE

METHODOLOGY

Introduction

As mentioned in my reading of the literature on municipal food policies, scientific approaches to measuring the food-ways of families are dominated by geographical measures of proximity and affordability of healthy food. By doing so, these studies have not addressed healthy food access holistically. In response, I employed a mixed-methods strategy with dynamic approaches to acquiring various data types. Both quantitative and qualitative data types were collected including, primary data from stakeholder interviews, a survey instrument, researcher observations, and secondary data from store produce sales receipts and geographic information systems data. A summary scheme of the methodological approach is illustrated in Figure 2 below.

There are five major sections to this chapter – the sections on Research Strategy, Method of Inquiry and Research Design describe the study’s methodology directly: 1) The Introduction and Background section provides a recapitulation of the research problem of access, policy approaches and a brief account of the study’s methodology. 2) The Research Strategy section discusses the Mixed Methods strategy as the overarching methodological framework employed for this study. 3) The Case Study approach is discussed as the Method of Inquiry in the third section. In this section I also describe the procedures for selection the Policy Intervention and Control neighbourhood block groups. 4) The Research Design section describes precisely how the participants were recruited and the study executed for both the Qualitative and Quantitative strands of the research. In the Qualitative section I discuss participant recruitment, data collection and methods of analysis. Similarly for the Quantitative portion, I discuss sampling and household selection, data collection, the survey instrument, analysis and the study hypotheses. 5) I conclude the chapter with statements of project approval from Florida State University’s Institutional Review Board and participant rights as it pertains to their involvement with this project.

Background

The city of Louisville formalised and invested in the Healthy in a Hurry Corner Store Initiative in response to the growing health disparities among residents in neighbourhoods in
West Louisville and East Downtown. The intent of the initiative was to affect health outcomes by changing the neighbourhood food environment through the corner store intervention designed to improve access to fresh fruits and vegetables in targeted neighbourhoods. Theoretical backing for this initiative comes from previous case studies where food access is conceptualised as an objective condition solely. These studies mostly measure quantifiable components of access such as availability, affordability and the nutritional value of a typical grocery basket of food in a particular area using geo-spatial analysis and other quantitative techniques (Gittelsohn et al., 2010; C. Smith et al., 2009; Song et al., 2011). While these are important, psychosocial and qualitative components such as residents’ perception of their neighbourhood’s crime rate, the perception of food quality and the physical appearance of the corner store were not included. This detracts from a complete understanding of residents’ food environment. Concomitantly, most scholarly work on urban food initiatives and measures of the food environment typically utilise one methodological typology only – either quantitative or qualitative, and few employ a mixture of the two that would buttress conclusions and recommendations (DeLind, 2006; Lee and Lim, 2009; Linthicum, 2007; Lytle, 2009; McKinnon et al., 2009; Walker et al., 2010).

This research project expands our ideas of food access by improving our understanding of the cultural, local and policy contexts from which this phenomenon precipitates. By employing a mixed methodological approach, this study is more than a summative evaluation that assessed the effectiveness of the Healthy in a Hurry Corner Store Initiative in improving objective access to healthy food. By considering qualitative elements, I extend the evaluation to explore residents’ perception of access that is crucial to food access theories which produces more effective public initiatives.

There are three research questions that guide this investigation. The Research Questions are: 1) How has the Healthy in a Hurry Corner Store Initiative (HHCSI) affected access to healthy food in food insecure communities? 2) How has the Healthy in a Hurry Corner Store Initiative affected ‘perceived’ access? And 3) What factor(s) most influenced residents’ perception of access? These are most appropriately explored through a mixed methodological research design. The mixed methods approach appropriately relates with this study’s Critical-participatory theoretical framework which is a dialogic perspective that promotes democratic processes of fact-finding and builds trust between researcher and stakeholders to deliver a clearer view of reality (Forester, 1980). In addition, the pragmatism of a mixed methods study supports
the pluralism of ideas (even conflicting theories) and eclectic sources and types of data in understanding different realities and the lived experiences of residents in food insecure neighbourhoods (Creswell and Plano Clark, 2011; Teddlie and Tashakkori, 2009).

This project examined the Healthy in a Hurry Corner Store initiative in a post-initiative, mixed-methods, cross-sectional study designed. The official duration of the initiative was from March, 2010 through March, 2012 (Wellness, 2010). My field work in Louisville formally began a year and eight months after when I collected qualitative data through semi-structured interviews of seven key stakeholders on the eighteenth and nineteenth of November, 2013. In order to elucidate the effects of the corner store initiative, I utilised a comparative case study inquiry procedure where I administered a survey instrument to measure residents’ perception of access in four case study neighbourhoods. I interviewed randomly selected householders (the primary unit of analysis) from the study neighbourhoods within the dates of the eighteenth of March and the thirtieth of April, 2014, when I temporarily resided in Louisville. (A ‘neighbourhood’ is defined as a census block group.) Two of these neighbourhoods are located in the initiative designated area and two similar control neighbourhoods are located outside this area. In all, quantitative and qualitative data were collected and analysed from four different sources – survey questionnaire, semi-structured interviews, documents and census data, and researcher observations.

**Research Strategy: Mixed Methods**

Upon reflecting back to the research problem and questions posed in this study, there is a trade-off in deciding the types and how much data to collect that would satisfy the research objectives. This trade-off is addressed by a mixed-methodology research design, as deep qualitative analyses are complemented by statistical analyses of questionnaire responses. As indicated in Figure 2 below, the Mixed Methods research strategy is the overarching approach to the research problems. Within this strategy, the case study method of inquiry and qualitative and quantitative research designs were subsumed. Figure 2 also indicates the level of refinement of the approaches used. At the broad top of the large inverted triangle, the methodology is encompassing and theoretical. In the second segment, method of inquiry, geographical spaces are identified. This segment demarks the physical boundaries within which the research will be conducted (or where). The final segment of the inverted pyramid identifies study participants.
within the geographies to be recruited for the study. This segment describes with whom (unit of analysis) and where (from the second segment) the study will be conducted.

The mixed methods approach is useful to improve data validity (triangulation), for completeness, to enhance the credibility and integrity (context) of research findings, and for improved utility of the study findings (Bryman, 2006; Greene et al., 1989; Teddlie and Tashakkori, 2009). Methodological and data triangulation – collecting a variety of data sources while using different methodologies to study the issue, improved the validity of the construct being studied, ‘access’, by utilising the strengths of each method while counteracting their weaknesses at the same time. Triangulation also improved interpretability of the findings by analysing them from different perspectives (Greene et al., 1989; Patton, 2002). For instance, residents’ survey responses on the physical condition of the corner store and perceived quality of produce sold there were corroborated through data gathered from researcher observations of the corner store and its produce.

Through method and data mixing, heterogeneity improved comprehensiveness and completeness in understanding the phenomenon, as well as credibility and integrity of the research findings, which makes for more useful policy suggestions to planners and other
community stakeholders (Bryman, 2006; Greene et al., 1989). Multiple data sources and types fill in the ‘picture in the frame’ and provide a truer impression of the phenomenon in reality. Data collected in this manner are more credible and robust in answering the research questions and lead to stronger conclusions.

**Method of Inquiry: Case Study**

This research project delved beyond the usual objective measures of healthy food accessibility and explored emotive components such as residents’ perception of their neighbourhood food environment. This study explored the lived experiences of residents and dense networks of ideas and feelings among community stakeholders that are rarely considered in policy (Alkon et al., 2013; DeLind, 2006; Guthman, 2008a). To gather and analyse these data, I used the case study approach. The case study method is an empirical approach that investigates a phenomenon within its natural setting (or ‘real-life context’) to make clear the environmental context within which the phenomenon is observed. As such, its purpose is to provide the investigator with a holistic and deep understanding of the phenomenon being studied (Andrade, 2009; Creswell, 2013; Yin, 2009).

The Case Study as a research method is an appropriate strategy to investigate complex research problems and is especially effective in its ability to accommodate multiple sources of evidence and data types (Yin, 2009). The inherent pragmatism of this method of inquiry is supported by the theoretical foundation of the study and does not limit the investigator to rigid methodologies that do not consider the unique circumstances of the study. Consequently, I utilised the case study method in this study to make clear how the intervening initiative affected residents’ perceptions of their food environment, what were the results of the policy, and why residents make the food buying choices as a result of the initiative. Results of the responses from selected households were used to make broader generalisations about the case study neighbourhoods. Thus the ‘neighbourhood’ is a unit of analysis of the project.

There is little consensus across social scientific studies on the use and definition of the terms ‘neighbourhood’, ‘community’ and ‘area’. All three are imprecise measures of space leaving urban scholars in dispute over established definitions (Diez Roux, 2001; Kearns and Parkinson, 2001; Song and Knaap, 2004). However, the concept of the neighbourhood is generally considered the foundational element of urban areas – cities are a collection of neighbourhoods for which services are provided to its residents (Song and Knaap, 2004). In this
I interpret the neighbourhood using Kearns and Parkinson’s (2001) conceptualisation as a geographically defined space comprising characteristics found in three scales, ‘home area’, ‘locality’ and ‘urban district or region’. As ‘home area’, neighbourhoods provide a sense of belonging, community and identity. At the ‘locality’ scale, residents derive social status, and neighbourhoods are recognised areas to which municipal services are provided. Thirdly, neighbourhoods as ‘urban districts and regions’ are urban geographical spaces upon which social and economic opportunities such as employment and social networks are ascribed. In essence then, neighbourhoods are urban spaces where residents derive psycho-social as well as economic and political benefits (Kearns and Parkinson, 2001). Placed in this context, food is characterised as a benefit affected by municipal and market policies that is made more or less available to residents based on their geographical location and socio-economic status. This is an appropriate framework for this study as it keenly describes the significance of neighbourhoods and how residents’ food access opportunities are affected by the Healthy in a Hurry Corner Store programme and other municipal-level policies.

Operationalizing neighbourhoods for scientific study has been a major challenge for urban scholars as well. There are two approaches to identifying neighbourhoods in research; first is to select a formalised demarcation such as Postal Code, census tract, census block group or census block (Jiao et al., 2012; Raja et al., 2008; Song and Knaap, 2004). The other approach is to demark neighbourhoods experientially through information gathered from residents along with other socio-cultural and historical information of the area (Basta et al., 2010; Diez Roux, 2001). In the latter, residents may be asked to draw the area they identify as their neighbourhood. However, defining neighbourhoods using this method leads to difficulties of consistency as boundaries are less rigid and vary by resident, context and experiences (Basta et al., 2010; Sastry et al., 2006). Neighbourhoods operationalized in this way would be impractical for this study where consistency is required for data collection and analysis.

I identified the neighbourhood as a 2010 U.S. Census block group (CBG) in this study. Although the residents of a census block may be more homogenous in socio-economic characteristics than those in a block group (a collection of blocks), the sub-block group definition reveals little more information than block groups do and many variables, such as household income and availability of private vehicle, available in the 2006-2010 American Community Survey, are not available at the census block scale (Aurand et al., 2014; Song and Knaap, 2004).
Where census blocks may be too small, census tracts tend to be too large. Census block groups have a population range of between 600 to 3,000 people, whereas census tracts usually contain about 4,000 residents (Bitler and Haider, 2009). Using census tracts, ZIP Code areas or other geographic definitions such as ‘neighbourhood area’ (a collection of census tracts) used in one study of Louisville’s health disparities (Smith et al., 2011), have shown to be too coarse due to their sizes, and miss much of the variation in population access to healthy food and socio-economic disparity (Aurand et al., 2014; Bitler and Haider, 2009; Jiao et al., 2012; Raja et al., 2008c; Song and Knaap, 2004). Census block group is an appropriate and practical choice for this case study, however imperfect. Future studies should utilise residents’ perception of their neighbourhood and how that affects their physical and perceived access to healthy food.

**Embedded Multiple-Case Study Design: Paired Comparisons**

The four neighbourhoods – or block groups, were purposively selected such that comparison would be drawn between and within pairs of neighbourhoods. Two cases are initiative designated neighbourhoods located within the policy intervention zone. The other two cases are similar to the initiative designated neighbourhoods by selected socio-economic measures; however, these are located in an area outside the policy intervention zone. In addition, cases were paired based on their location to a neighbourhood grocery store. One initiative designated neighbourhood is located within a half-mile radius of the healthy corner store (the initiative being studied) while the other is not. And one control neighbourhood is located within a half-mile radius of a neighbourhood corner store while the other is not. That is, I conducted an embedded multiple-case study design in the initiative designated zone and replicated it, using negative cases in the control context (outside the initiative designated zone). In doing this, I explored positive correlations – examples where the Healthy in a Hurry initiative positively affected objective and perceived access. And also, negative cases – cases without the intervening initiative, to elucidate conclusions and addressed rival arguments. Table 1 below describes the arrangement of case study neighbourhoods. This approach strengthened the study overall and buttressed findings, making them more compelling than a single-case study strategy (Patton, 1987, 2002; Ragin, 1987; Yin, 2009). In the following subsection, I discuss the quality of this case study design.
Table 1. Case Study Neighbourhoods

<table>
<thead>
<tr>
<th>Neighbourhoods</th>
<th>Initiative</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>C</td>
<td>Corner store present</td>
</tr>
<tr>
<td>B</td>
<td>D</td>
<td>Corner store absent</td>
</tr>
</tbody>
</table>

Quality of Case Study Research Design

The quality of the case study research design is evaluated on four criteria, *Construct validity*, *Internal validity*, *External validity* and *Reliability* (Yin, 2009). There are two steps to meeting the test of construct validity. First, the researcher must adequately define and operationalise the concepts being studied. In this study ‘access’ is defined as residents’ ability to acquire fresh fruits and vegetables (Penchansky and Thomas, 1981). This definition is an aggregation of five dimensions, acceptability, accessibility, accommodation, affordability and availability. Each of these was further operationalised (see the Definitions of Terms in Appendix A). Construct validity was improved through the use of multiple sources of evidence including published scholarship on food access, a survey instrument to measure the concepts, researcher observation of neighbourhood food environments, and interviews of key stakeholders. In addition, I used data and methodological triangulation to improve construct validity that strengthened research findings and conclusions (Patton, 2002; Yin, 2009).

Internal validity addresses the issue of identifying spurious effects in explanatory experiments and quasi-experiments. And although this study is exploratory, it is worth pointing out that my use of negative control cases in a paired-comparison arrangement supports research inferences and the credibility of conclusions by presenting rival or competing ideas (Ragin, 1987; Yin, 2009). While internal validity addresses the integrity of the study’s structure to produce credible conclusions and policy suggestions, external validity tests the study’s findings and generalisability beyond the immediate case study locations. The cases selected in this research project were purposively selected and not randomly assigned to case study groups. While doing this mitigates statistical generalisations, the multiple case study approach, that is, conducting two case studies in different neighbourhoods with embedded cases, demonstrated that generalisations to theory is possible. Our present understanding of urban food insecurity and
‘food deserts’ holds, in general, that making fresh fruits and vegetables physically available and affordable in stores can reverse food insecurity. This study, challenges this theory by extending the discussion to ‘perceived’ access and exploring the concept of access to include interpersonal and other qualitative dimensions such as store cleanliness and the relationship between store workers and store patrons.

Lastly, reliability is the test of dependability other investigators would have in the study’s procedures (Yin, 2009). That is, to repeat the data collection procedures and obtaining the same results. The procedures are replicable; however, results may vary as a result of the fact that residents’ conditions, and perceptions, may change over time.

Case Selection

Policy Intervention Cases

Case study research strategies are most effective when information-rich cases are selected for observation. I theorised that the most revelatory census block groups would be located in the area surrounding one of the first corner stores to participate in the Healthy in a Hurry Corner Store Initiative. Being one of the first stores in the programme meant that more sales data would be available for analysis, and survey responses would be of better quality because residents would have had a longer period of time to form perceptions of the store and its produce. Residents’ ideas of the store would be more accurate and less likely to reflect initial feelings of acceptance or rejection due to the store’s new marketing scheme. The Shawnee Market has fresh produce sales data from September, 2010 through November, 2011, almost the entire length of the healthy corner store initiative.

Figure 3. Shawnee Market. Photo credits belong to the author.
Shawnee Neighbourhood. The Shawnee Market is located in the Shawnee neighbourhood (see Figure 4 below) which is one of ten identified neighbourhoods located in the area known as West Louisville – west of Ninth Street and north of Algonquin Parkway. The Ohio River to its west, West Broadway Avenue borders the neighbourhood on its south, and 34th Street to its east. Portland and Russell neighbourhoods border Shawnee to its east and the Chickasaw neighbourhood is to the south. Interstate Highway 264 curves along its eastern border and Interstate Highway 64 is to its north. The neighbourhood has a population of approximately 12,000 people and racially the African American population ranges from 74 per cent to 99 per cent in some areas (Crutcher, 2013).

Neighbourhood amenities include the Shawnee Golf Course and the Shawnee Olmstead Park that is a part of the parkway system designed by Frederick Law Olmstead, Sr. Shawnee has a very vibrant food movement that is supported by residents and its Metro Council Representative. The neighbourhood has the largest community garden in the city – The People’s Garden managed by Louisville Grows (Figure 5), an active neighbourhood association (Figure 6) that promotes fresh produce, and a Fresh Stop location where residents pool their resources to buy locally grown produce, Figure 7.
Figure 5. The People’s Garden. Photo credits belong to the author.

Figure 6. Shawnee Neighbourhood Association Youth Members. Photo credits belong to the author.

Figure 7. Strawberry Fest, 2013. Photo credits belong to the author.
A Fresh Stop activity to distribute pre-ordered Strawberries.
However, Shawnee also has many challenges. Single females with children under eighteen years of age head approximately a third of households. This, in conjunction with a relatively high unemployment rate at 11 per cent, and low educational attainment - less than 10 per cent of residents have a Bachelor’s degree or higher, contributes to the neighbourhood’s level of distress (Crutcher, 2013). Access to healthy and affordable food is also an issue. With the absence of a supermarket in Shawnee (Figure 8), a quarter of households do not own a vehicle, and annual median household income at approximately $30,000, food insecurity is a challenge for many of the neighbourhood’s households. The Shawnee neighbourhood is a distinct neighbourhood with unique characteristics that make it suitable for this study (American Community Survey, 2007-2011).

Figure 8. Supermarkets in Initiative Designated Neighbourhoods

**Census Block Group Selection.** In selecting the case study census block groups, I used *Non-random Cluster Sampling* (a Non-probability Sampling strategy) and *Purposive Selection* of cases. There are 575 census block groups in Metro Louisville-Jefferson County, Kentucky, of which seventy-four (74) are located in the area identified by the initiative planners as the
Initiative Designated Neighbourhood (IDN). I purposively selected two block groups in the Shawnee neighbourhood near the Shawnee Market, a participating neighbourhood corner store. Case study neighbourhood A is located within a half-mile radius of the healthy corner store, and Case study neighbourhood B is located outside the half-mile radius (see Figure 9). Figure 10 is a schematic of the policy intervention cases.

Figure 9. Case Study Census Block Groups in Shawnee Neighbourhood

<table>
<thead>
<tr>
<th>Context (Initiative Designated Neighbourhoods in Metro Louisville)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case (Shawnee Neighbourhood Area)</strong></td>
</tr>
<tr>
<td>*Embedded Unit of Analysis A (Census tract 7, Block group 1)</td>
</tr>
<tr>
<td>Embedded Unit of Analysis B (Census tract 9, Block group 2)</td>
</tr>
</tbody>
</table>

Figure 10. Scheme of Policy Intervention Cases
* designates the presence of the healthy corner store within half-mile radius of block group.
Control Cases

Controlled cases were selected based on their similarities to the initiative cases. The initiative targeted low-income, low-access neighbourhoods in Louisville. In order to determine control cases I determined which areas (census tracts) in Louisville would be classified as low-income and low-access based on key variables (Table 2) identified in studies used by policy makers (Alliance, 2007; Smith et al., 2011). I classified census tracts and not census block groups to remain consistent with the method used by the policy planners to identify neighbourhoods; however, thereafter, I purposively selected two census block groups as case studies.

In the state of the literature, urban food insecure areas are described as being high density, deprived urban regions with elevated levels of economic distress and poor physical access (availability and ability to get to location) to healthy food (Gottlieb and Fisher, 1995, 1996; Lang and Caraher, 1998; Pearce et al., 2007; Sharkey and Horel, 2008; P. Williams and Hubbard, 2001). Initially, I considered ten variables that describe these conditions.

Table 2. Census Tract Classification Variables

<table>
<thead>
<tr>
<th>Population Density</th>
<th>Distress</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population density</td>
<td>Percent Unemployed</td>
<td>Number of TARC bus stops</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>Percent of Households with no vehicle</td>
<td></td>
</tr>
<tr>
<td>Median household income in past 12 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent of households received Food Stamps in past 12 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent Female-headed household with own children under 18 yr.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent of population 18 years or older with a Bachelor’s degree or higher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent African American</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
I reduced these ten variables to five using Exploratory Factor Analysis with principal component analysis as the method of extraction. The variables were Poverty Rate, Median Household income, Percent African American, Percent of households with no vehicle, and Percent of households receiving food stamps. I then used these variables in a Cluster Analysis (K-means) to classify the 191 census tracts in Metro Louisville. In this analysis I also added the population density variable to control for urban and suburban (or less dense) census tracts. The cluster analysis yielded five clusters (and one missing due to data, which is the Airport) or census tract classifications.

Table 3. Census Tract Typology

<table>
<thead>
<tr>
<th>Typology (colour code)</th>
<th>Number of Census tracts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airport (White)</td>
<td>1</td>
</tr>
<tr>
<td>Affluent Suburbs (Orange)</td>
<td>9</td>
</tr>
<tr>
<td>Working Class and Ethnic Enclaves (Tan)</td>
<td>64</td>
</tr>
<tr>
<td>Middle Income and Young Professionals (Green)</td>
<td>54</td>
</tr>
<tr>
<td>Working Poor and Minority Communities (Red)</td>
<td>46</td>
</tr>
<tr>
<td>High Income and Rural Areas (Blue)</td>
<td>17</td>
</tr>
</tbody>
</table>

Figure 11. Classified Census Tracts
The six census tract typologies are described as follows:

**Affluent Suburbs** (9; 4.7%) are located to the northeast Jefferson County – upper Brownsboro and Prospect areas near the border with Oldham County, and to the east outside of Interstate highway 265. These areas show little sign of distress and indicate a high ability of access to fresh fruits and vegetables. The median household income is above 100 thousand dollars per annum; unemployment is near the national average of 5 per cent and in most areas, three-quarters or 75 per cent of residents have a Bachelor’s degree or higher. Culturally, these census tracts are between 80 to 96 per cent White. **High Income and Rural Areas** (17; 8.9%) are similar to the Affluent Suburbs in racial makeup, low unemployment and poverty rates, but with median household incomes of $70 to $100 thousand per annum. They are located in the eastern portion of Jefferson County, in some older suburbs inside the Interstate 265 beltway such as Anchorage, Hurstboune, Middletown and Jeffersontown, and to the southeast outside the beltway. A significant pocket is in the Highlands, St. Matthews, Cherokee Triangle, Seneca Gardens and Douglas Loop areas. The census tracts I characterised as **Middle Income and Young Professionals** (54; 28.3%) are the older inner-ring suburbs just east of the Central Business District and some of the newer, outer suburbs to the south and southeast of Jefferson County. Racially, these census tracts are 70 to 97 per cent White, with median household incomes up to $70 thousand dollars.

The **Working Class and Ethnic Enclaves** typology characterises 64 or 33.5% of census tracts in Louisville-Jefferson County making it the largest classification. These census tracts are spatially located throughout Louisville but mostly in the south, southwest and ethnic enclaves east of the Central Business District. They include households with median incomes between thirty and fifty thousand dollars per annum, and incorporate the Irish and German neighbourhoods of Germantown, Schnitzelburg, Irish Hill, Saint Joseph and the Highlands located east of downtown. Poverty rates fluctuate between 8 and 30%, and about a third of households do not own a private vehicle. Finally, the **Working Poor and Minority/Refugee/Immigrant Communities** comprise 24.1% or 46 census tracts in Metro Louisville. These comprise all of West Louisville, Downtown, East Downtown and older inner-ring suburbs just south of West Louisville such as Shively, Iroquios Park, and neighbourhoods in South Central Louisville. There are also immigrant and refugee communities to the west and south of the Airport, and an older African American suburb, called Newburg, just east of the
Airport. These census tracts are considered low-income and low-access (or ‘food deserts’) and are the target for the Healthy in a Hurry Corner Store initiative. Culturally, these economically deprived areas are predominantly African American – up to 96% in some census tracts. The household median incomes (less that $30 thousand dollars) and educational levels (less than a third with a Bachelor’s degree or higher) are the lowest in Jefferson County, while they exhibit the highest density of fast-food restaurants and poverty rate (80%) in the city.

(The Airport census tract was analysed as missing data as there were no demographic data for that tract.)

In selecting the control cases, I considered census tracts similar to those of the initiative designated census tracts – those classified as Working Poor and Minority/Refugee/Immigrant Communities. Using non-Probably Sampling strategy of non-random Cluster sampling, I purposively selected two census tracts from the South Central Louisville area. I selected the South Central area because it is similar to the Shawnee area on key variables of density, accessibility and deprivation. It is also far enough from the healthy in a hurry corner to prevent contamination of initiative and control groups by the other’s residents.

![Figure 12. Selected Control Block Groups](Source: U.S. Census Bureau: ftp://ftp2.census.gov/geo/pvs/tiger2010st/21_Kentucky/)

The two case study census block groups selected were neighbourhood C (Census Tract 36 - Block Group 5) which is located within a half-mile radius of a Pic-Pac grocery store, and
neighbourhood $D$ (and Census Tract 4301 - Block Group 2) as illustrated in Figure 12. Below (Figure 13) is a schematic representation of the selected cases in the South Central Louisville neighbourhood area.

![Figure 13. Scheme of Control Cases](image)

^ designates the presence of a corner store within a half-mile radius of block group.

Figure 14 below illustrates the four case study ‘neighbourhoods’ in relation to each other.

![Figure 14. Case Study Census Block Groups](image)

Research Design: Qualitative and Quantitative Strands

Qualitative Strand

Continuing with the Pragmatic-Participatory research paradigm, this study pulls from both qualitative and quantitative methodologies to analyse the effects of the healthy corner store intervention. I established three research questions:

Research Question 1: How has the Healthy in a Hurry Corner Store Initiative (HHCSI) affected access to healthy food in food insecure communities?

Research Question 2: How has the Healthy in a Hurry Corner Store Initiative affected ‘perceived’ access?

Research Question 3: What factor(s) most influenced residents’ perception of access?

With these as context, qualitative data were gathered through unobtrusive researcher observation of case study neighbourhoods, open-ended items on the survey instrument to neighbourhood households, and guided semi-structure interviews of stakeholders. Observations were useful in enhancing our understanding of the neighbourhood environment and the subculture of the families living therein, while the interviews contributed to narrative construction through a deeper understanding of stakeholder experiences with the initiatives (Silverman and Marvasti, 2008). These data were used to measure ‘perceived’ access to healthy food within the initiative and control neighbourhoods. Qualitative data are useful to understand the lived experiences of stakeholders as they interact with and are acted upon by the new policy. This human component of social research would be missed if only quantitative data were collected and analysed (Creswell, 2013; Silverman and Marvasti, 2008; Stake, 1995).

Participants. Through my work with local food planning and policy in 2005 in Louisville, I became familiar with key players and organisations that guided decision-makers and policy. I purposively selected seven individuals who have critical knowledge and experience of the Healthy in a Hurry Corner Store Initiative’s formation and implementation. Participants for the interviews were recruited from five stakeholder groups, the Business community, local Government, Health and Education, Academia and Community-based Organisations.

Data Collection. I collected qualitative data through open-ended questions on a semi-structured interview protocol administered to seven key stakeholders on the 18th and 19th of November, 2013. All interviews were recorded on a secure, password-protected voice recorder.
Three months prior to my arrival in Louisville on 17th November, 2013 I contacted selected stakeholders. We met at a time and place that was most convenient (with privacy being a concern) for the interviewee. The length of interviews ranged from 25 minutes to an hour.

**Gathering Observational Data.** As the intrusiveness of standardised instruments may produce less precise findings, complimentary qualitative data was gathered through unobtrusive observations of the case study neighbourhoods and the Shawnee Market corner store located within a half mile of residents in case study Neighbourhood A. I accomplished this by driving and walking through case study areas and recording observations of the neighbourhoods’ physical environment in a field journal and through photography. These observations improved the study findings’ validity (or ‘confirmability’) through verification of stakeholder responses and survey results from residents (Creswell, 2013; Silverman and Marvasti, 2008).

**Method of Analysis.** Qualitative data gathered through stakeholder interviews were analysed using the Interpretive approach where prominent themes emerged from the interviews. These emergent themes were identified through the researcher’s ‘insight, intuition and impressions’ gained through experience. I paid attention not only to what was said during the interviews, but also to what was not mentioned across interviews. I also focused on moments of silence, disruptions and contradictions (Creswell, 2013). Then these chronologically connected events and actions were recorded as narratives that pervaded and anchored the interviews (Creswell, 2013; Silverman and Marvasti, 2008). The supportive theoretical assumption of the Interpretive method is that ‘reality is socially constructed and the researcher becomes the vehicle by which reality is revealed’ (Andrade, 2009). There is no single objective reality; each of us experience different realities through our life histories and societal structural forces. Philosophically, reality is created through human actions and interactions, and the onus is on the researcher to interpret and present these realities. Consequently, my analysis of the qualitative data draws from my nine years of residence in Louisville (Andrade, 2009; Creswell, 2013; Silverman and Marvasti, 2008).

During these years I have been engaged with civic organisations and actively participated in volunteer and contract work in low income minority communities on issues such as food access, mentoring, financial planning, place making, male sexual responsibility, and voting rights, among others. This substantive work provided the necessary contextual understanding necessary for me to conduct credible interpretive analysis of the qualitative data gathered here.
Lastly, the recorded interviews were transcribed in their truest form into a rich text formal (RTF); then entered into MaxQDA 11 analytical software where I analysed each and identified segments or ‘topics’ that were broadly associated with the research questions. After further analysis of the broad topics, I identified six major themes that connected the interviews and were strongly correlated to the guiding research questions. These are presented in the following chapter under Qualitative Data Results.

**Quantitative Strand**

I applied a quasi-experimental *Ex post facto - Cross-sectional* research design with a control group to measure the effects of the intervention on residents’ access to healthy food (see Figure 15). Quasi-experimental designs, though not ‘true experiments’ with randomly selected cases, retains many features for valid and reliable observations of phenomena. In this study I purposively selected four similar neighbourhoods; two are located in the initiative designated area (IDA) and two are not. One neighbourhood in the IDA is within the service area of a half-mile radius of a healthy corner store, and one neighbourhood outside the IDA is within the service area of a regional pre-package retail store. The benefits of this design: 1) allows for comparison to be made between groups; 2) because the groups are selected non-randomly, they immediately reveal the phenomenon or the effects of the construct being studied – clear association between independent and dependent variables; and 3) this design allows for comparisons of groups to be made at different points in time (Babbie, 2004; Creswell, 2009; Schutt, 2004).

| IDN A | -------------------X------------------- O |
| IDN B | ------------------------------------------------- O |
|       | ------------------------------------------------- O |
|       | ------------------------------------------------- O |
|       | ------------------------------------------------- O |
| *Control C | ------------------------------------------------- O |
| Control D | ------------------------------------------------- O |

Figure 15. Quasi-Experimental Diagram

Quasi-Experiment: Ex-Post Facto Control Group Cross-Sectional Design

- **X** is Formalised, Targeted Food Policy – Healthy in a Hurry Corner Store Initiative
- **O** is observation and measurement on instrument
- **IDN** signifies Initiative Designated Neighbourhood
The dotted line IDN from Control groups indicates the groups are not randomly selected.

*Control Neighbourhood C is within a half-mile service area of a Pic-Pac Store.

There is a dearth of longitudinal studies in research on urban food environments (Oakes et al., 2009). It is believed that longitudinal studies deliver stronger inferences due to extended observations of interventions on a population. However, longitudinal studies, though an improvement, suffer from issues of attrition of participants, research fatigue among participants resulting from repeated interviews that ultimately affect the quality of responses, the expense of conducting the study, and endogeneity. In studying urban food environments, for example, the food environment – the presence of supermarkets, fast-food restaurants and sidewalks, is affected by people and policies. Thus, the food environment may change over the duration of the study creating confounding issues that will affect results (Babbie, 2004; Oakes et al., 2009; Schutt, 2004).

Although the cross-sectional design stipulates one instance of observation and measurement, I gathered reliable base-line data through questions in the semi-structured stakeholder interviews and questionnaire to residents describing the local food environment. Census data and retail store information from the Metro Sewer District indicated that the food environment had not change substantively in the three years prior to the corner store initiative, and remains so presently. The cross-sectional design provided for more efficient use of resource. However, it has no particular advantage or disadvantage in establishing causality, and is weak on identifying spurious relationships among variables (Creswell, 2009; Schutt, 2004).

**Household Sample Size.** In considering the number of households in each case study ‘neighbourhood’ to survey, I conducted a power analysis to determine the sample size necessary for 0.80 power to detect effects among groups. A statistical power analysis examines the relationship among sample size (N), significance criterion (α), population effect size (ES) and statistical power (1 – β) (J. Cohen, 1992). The alpha (α) criterion (0.05 is the convention in the social sciences) is the maximum risk acceptable in rejecting the null hypothesis (H₀) when it is true and thereby committing an error of the first kind or Type I error. Statistical power is the probability of failing to reject a false null hypothesis. This is known as a Type II error. The Effect Size (ES), the difference between H₀ and H₁, is the degree to which the null hypothesis is believed to be false (J. Cohen, 1992). This effect is indexed on a scale of small, medium and large, and each statistical test has its own effect size index. In this study I utilised an F test for
group differences. The recommended minimum effect size representing a ‘practically’ significant effect for social science data (or RMPE) is 0.41 (Ferguson, 2009).

I used the statistical software G*Power 3.1 to determine the total sample size of households for the study. To determine the sample in each case study neighbourhood, I then divided the total sample size by four (the number of case study groups). This gives approximately 18 households per case study group (Table 4).

<table>
<thead>
<tr>
<th>Power Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effect Size (ES)</td>
</tr>
<tr>
<td>Alpha error probability (α)</td>
</tr>
<tr>
<td>Power error probability (1- β)</td>
</tr>
<tr>
<td>Numerator degrees of freedom (df)</td>
</tr>
<tr>
<td>Number of groups</td>
</tr>
<tr>
<td>Total sample size</td>
</tr>
<tr>
<td>Sample size per Case Study group</td>
</tr>
</tbody>
</table>

Degrees of freedom for F test is df = g – 1, where g = number of groups (J. Cohen, 1992).

**Random Selection of Households.** The Table below describes and compares the four case study ‘neighbourhoods’ on population, density and median income. My goal was to select case study areas that were similar on these measures in order to elucidate the effects of the healthy corner store initiative. However, their geographical location next to other land uses such as parks, commercial shopping areas, manufacturing and major thoroughfares made selecting similar cases more challenging. For example, although median household incomes are low for all four groups, the range in median income is large, from $12,130 for group D to $36,250 for group C. The groups were most convergent on the population and population density parameters; however, group A that has the smallest population (752) is more dense than group D that has the second largest population, 988 people.

I acquired a dataset of all 337,329 residential addresses in Louisville from the Office of Jefferson County Property Valuation Administration (PVA). It was noted that the dataset also included unoccupied addresses (vacant housing units) but these were not identified in the dataset.
I used this dataset to randomly select households to survey. Table 5 shows the number of residential addresses in each case study group. I employed systematic sampling to select households by calculating a sample interval and randomly selecting households based on that interval. These calculations were done using IBM SPSS version 22 (SPSS). Here are the steps taken in randomly selecting households to survey. I used case study group A as an example:

1. Calculate sample interval. Sample Interval (k) = N/n, where N is the number of residential addresses in each case study group (413 in group A), and n is the desired sample size for the group (18 from Table 4 above). In the case of study group A, k = 23.

2. Random selection of first address: Using SPSS, I requested a random number between 1 and 23. That random number corresponded to an address in the dataset, the 14th address in the dataset, for example.

3. SPSS was instructed to select every 23rd address starting with the 14th address selected in Step 2 until 18 addresses were selected.

This was done for all four case study groups.

Table 5. Initiative and Control Cases Compared

<table>
<thead>
<tr>
<th>Initiative Cases</th>
<th>Control Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) Census tract 7, Block group 1</td>
<td>(B) Census tract 9, Block group 2</td>
</tr>
<tr>
<td>* Total Residential Addresses</td>
<td>413</td>
</tr>
<tr>
<td>Households (occupied housing units)</td>
<td>334</td>
</tr>
<tr>
<td>Population</td>
<td>752</td>
</tr>
<tr>
<td>Population Density (person/sq. mi.)</td>
<td>7,842</td>
</tr>
</tbody>
</table>
Table 5. Continued

<table>
<thead>
<tr>
<th>Initiative Cases</th>
<th>Control Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) Census tract 7,</td>
<td>(B) Census tract 9,</td>
</tr>
<tr>
<td>Block group 1</td>
<td>Block group 2</td>
</tr>
<tr>
<td>(C) Census tract 36,</td>
<td>(D) Census tract 4301, Block group 2</td>
</tr>
<tr>
<td>Block group 5</td>
<td></td>
</tr>
</tbody>
</table>

Median Household Income

- $22,500
- $19,402
- $36,250
- $12,130

Source: American Community Survey 2006-2010; U.S. Census Bureau 2010; Louisville-Jefferson County Information Consortium (LOJIC); *Office of Jefferson County Property Valuation Administration, 2013.

Data Collection. Quantitative data were collected through the closed-ended questions on the survey instrument administered to randomly selected householders from the 18th March through 30th April, 2014. I administered all survey questionnaires by visiting residential units that were randomly selected. I made visits every day except on days that it rained, snowed or were too cold to travel outside. Weekday visits were conducted between the hours of 3:00 pm and 7:00 pm due to the fact that householders who might be working during the day would most likely be at home during that time. My visits were between 12 noon and 7:00 pm on the weekends. I ended visits at 7:00 pm since families would be having supper at that time and would be less responsive to my interruption of their meal. If no one answered the door at the selected address on the first attempt, I made a second attempt before I moved on to an alternate address.

Data for healthy corner stores sales of fresh fruits and vegetables for the duration of the initiative, March, 2010 – March, 2012 were collected from key stakeholders. Socio-economic and demographic data were gathered from the U.S. Census Bureau – 2010 Census and the 2006-2010 American Community Survey, while residential data were collected from Metro Sewer District (MSD). Geographic information systems (GIS) shape files of state, county, census tract, census block group and census block boundaries for 2010 were retrieved from the U.S. Census Bureau TIGER (Topographically Integrated Geographic Encoding and Referencing) database and from the Louisville/Jefferson County Information Consortium (LOJIC).

Survey Instrument. The objective of the survey instrument is to measure residents’ perception of access to healthy food in their neighbourhoods as it relates to the implementation of the Healthy in a Hurry Corner Store Initiative from Spring, 2010 through Spring, 2012. Some of the questions were based on selected items used in the instrument by Hendrickson and colleagues (2006) in their paper on fruit and vegetable access in low-income, low-access
communities in Minnesota. This survey instrument has thirty-eight close-ended items and one open-ended response item at the end of the questionnaire. Nine of the survey items gathered demographic data; while the intent of the first two items was to gather baseline data on how long residents lived in their neighbourhood and where they shop for fresh fruits and vegetables before the initiative was implemented. Twenty-seven items captured residents’ perception of access on five dimensions, acceptability, accessibility, accommodation, affordability and availability. See Table 6 below. I operationalised the five dimensions as follows:

Acceptability: the relationship of residents’ attitudes about store associates and the quality of the food being sold.

- Residents are treated courteously (greeted at the door, greeted at the cash register, able to resolve disputes/return items with little problems) by store workers and managers.
- Residents perceive the store as having sufficient space and lighting.
- Residents’ perception of the quality and condition of fruits and vegetables.

Table 6. Five Dimensions and Questionnaire Items

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Questionnaire Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptability</td>
<td>1. I am greeted by store workers when I enter the store.</td>
</tr>
<tr>
<td></td>
<td>2. Store workers help me find items in the store.</td>
</tr>
<tr>
<td></td>
<td>3. I have heard a store worker used a negative racial word about a customer.</td>
</tr>
<tr>
<td></td>
<td>4. The fruits and vegetables in the store are bruised or wilted.</td>
</tr>
<tr>
<td></td>
<td>5. Fruits and vegetables in the store show signs of rot.</td>
</tr>
<tr>
<td>Accessibility</td>
<td>1. When you go to the corner store, what mode of transportation do you use?</td>
</tr>
<tr>
<td></td>
<td>2. Based on your answer to Item 8, how long does it take you to travel to the corner store?</td>
</tr>
<tr>
<td></td>
<td>3. I do most of my food shopping within my neighbourhood.</td>
</tr>
<tr>
<td></td>
<td>4. Transportation problems make eating healthy hard for me.</td>
</tr>
<tr>
<td>Accommodation</td>
<td>1. The fruits and vegetables are displayed where I can see them as I enter the store.</td>
</tr>
<tr>
<td></td>
<td>2. The store is open when I go to buy fruits and vegetables.</td>
</tr>
<tr>
<td></td>
<td>3. Crime in my neighbourhood makes it hard for me to get fresh fruits and vegetables.</td>
</tr>
<tr>
<td></td>
<td>4. The store provides check-cashing services.</td>
</tr>
<tr>
<td></td>
<td>5. The store has an Automated Teller Machine (ATM).</td>
</tr>
<tr>
<td></td>
<td>6. I do not like how the store smells.</td>
</tr>
<tr>
<td></td>
<td>7. I feel safe shopping at the corner store.</td>
</tr>
</tbody>
</table>
Table 6. Continued

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Questionnaire Items</th>
</tr>
</thead>
</table>
| **Affordability** | 1. The corner store accepts EBT cards (‘food stamps’) to buy fruits and vegetables.  
2. I can afford to buy the fresh fruits and vegetables at the corner store.  
3. The cost of fruits and vegetables is higher in my neighbourhood than in other areas.  
4. Cost makes healthy eating hard for me.  
5. The fruits and vegetables at the corner store cost the same as they do in other stores. |
| **Availability** | 1. Fruits and vegetables are available in my neighbourhood.  
2. Fruits and vegetables are available all year round at the corner store.  
3. The corner store in my neighbourhood sells fruits and vegetables.  
4. The corner store has the types of fruits and vegetables that I want to buy.  
5. When I go to purchase fruits and vegetables from the corner store, there is enough for me to buy.  
6. I buy more fruits and vegetables now that I did before the corner store started stocking fruits and vegetables. |

**Accessibility/Location:** the relationship between the location of the corner store that carries fruits and vegetables and the location of residents, taking account of resident transportation resources and travel time, distance and cost.
- Corner store is located within a half-mile radius of residential census block group.
- The corner store sells fruits and vegetables.
- Household as access to a private motor vehicle.

**Accommodation:** the relationship between the manner in which the supply of healthy food is organised to accept residents (which includes, store hours of operation) and residents’ ability to accommodate to these factors and the residents’ perception of their appropriateness.
- The store is opened to accommodate residents’ shopping habits.
- Residents perceive the store as being safe.
- Residents perceive the store as being clean.
- Stores provide financial services such as cheque-cashing and the use of Electronic Benefit Transfer cards (or EBT also known as ‘food stamps’) to purchase healthy food.

**Affordability:** the relationship of store prices of healthy food to the residents’ income and ability to pay. It is critical to note the importance of residents’ perception of food value relative to food cost, as well as residents’ knowledge of prices and cost with which to make comparisons for discount shopping.
The difference in price of healthy food in study-neighbourhood grocery stores compared to those stores not located in the study neighbourhood. If the price of the same good is lower in the study-neighbourhood’s store, then that good is understood to be more affordable to neighbourhood residents.

**Availability:** the relationship of the volume and variety of fruits and vegetables to residents’ volume and variety of food needs.

- The corner store has the volume, variety and culturally appropriate fruits and vegetables throughout the year.

**Instrument Quality.** Prior to administration in the field, I informed opinions from two experts in programme evaluation and one in urban food systems to assess the questionnaire items’ content validity. I also conducted a pilot test with a graduate class of urban and regional planning students at Florida State University to assess how well the instrument measured the construct ‘access’ and for readability. Both sets of responses were incorporated into the questionnaire prior to its administration in the four neighbourhoods is Louisville, Kentucky.

Time and resources did not permit me to estimate the instrument’s test-retest reliability (stability) by testing the same group multiple times. Replicating this study would be useful in establishing the instrument’s reliability. Cronbach’s Alpha coefficients, which measure internal consistency (homogeneity) of the items on the instrument, were calculated for items on all five dimensions (Fink, 2009).

**Method of Analysis.** The dataset of all residential addresses in Louisville-Jefferson County – addresses of supermarkets, corner stores, fast food restaurants, farmers’ markets, convenience stores, community gardens, natural-food stores, and U.S. census data were geocoded and mapped using ESRI ArcMap 10. Survey data were analysed using IBM SPSS version 22. The survey results were statistically analysed to accomplish five objectives: to describe the respondents’ background, to describe the responses given, to determine relationships between respondents and their food environment, to compare the respondents of the four case study groups, and to determine which component(s) and demographic characteristics best predicted positive perceptions of access to healthy food (Fink, 1995b).

In describing respondents’ backgrounds I calculated tallies and frequency counts of individuals in different groups such as male or female, ages and racial groups in each case study neighbourhoods. These results were presented as numbers and percentages. The next phase was
to describe the responses. I calculated the means of group responses to different variables and reported measures of central dispersion such as the standard deviation and ranges. For the third set of results, I estimated relationships with correlation statistics between the neighbourhoods the respondent lived and their perception of access on the five dimensions. The fourth set of results included comparisons between groups and access perception scores. I utilised an Analyses of Variance (ANOVA) test to compare groups. And lastly, I made ‘predictions’ based on the results of the analyses of which variables most predict a positive perception of access to healthy food.

**Study Hypotheses.** This study was designed to explore the effects of the Healthy in a Hurry Corner Store Initiative on residents’ ‘objective’ and ‘perceived’ access to healthy food, and to identify the factor or factors that most influence residents’ perception of access. These objectives are expressed in three research questions above from which I developed three sets of hypotheses:

**H₀₁:** There is no difference in objective access (measured as ‘accessibility/location’, ‘affordability’ and ‘availability’) to healthy foods between the households in neighbourhoods designated for the Healthy in a Hurry Corner Store initiative intervention and those of the control neighbourhoods.

**H₁a:** Residents in Case Study areas A and B will report higher perceived objective access (accessibility, affordability and availability) scores to fresh fruits and vegetables than residents in Case Study areas C and D.

**H₁b:** Residents in areas A and C will report higher perceived accessibility scores to healthy food than those in areas B and D.

**H₀₂:** There is no difference in perceived Acceptability and Accommodation to healthy foods between the households in neighbourhoods (A and B) designated for food the initiative intervention and those of the control neighbourhoods (C and D).

**H₂a:** Residents in initiative neighbourhoods A and B will report higher scores of perceived Acceptability than residents in control neighbourhoods C and D.

**H₂b:** Residents in neighbourhoods A and C will report higher scores of perceived Accommodation than residents in neighbourhoods B and D.
$H_{03}$: There is no difference in perceived access across the case study groups when socioeconomic factors, such as median household income, educational attainment and race are considered.

$H_{3a}$: Households with median incomes $\geq 30,000$ or more will report higher perceptions of Availability and Affordability than households earning less than $30,000$.

$H_{3b}$: Residents with some college education or higher will report higher perceptions of Acceptability and Availability than residents with no college experience.

$H_{3c}$: White residents will report higher perceptions of Acceptability, Accessibility and Availability than Black residents.

**Ethical Concerns**

This study was approved through the Institutional Review Board (IRB) at Florida State University; the Approval Memorandum, Re-Approval Memorandum, Statements of Consent for Stakeholder Interview and Neighbourhood Survey Instrument are included at the end of this document in Appendices B, C, D and F respectively. Participants and potential participants were informed of their rights as it pertains to their involvement in this research study, and made aware that they were free to withdraw their consent and end their participation at any time without prejudice. The procedures and purpose of the study along with the use of the results were clearly explained to participants. Participants were made aware of potential risks and benefits of the study and offered an opportunity to ask questions. Should they have questions at a later time, the contact information of the dissertation chairperson and myself (Principal Investigator) were made available to participants. Participants registered their participation in the study by signing the consent form.

**Chapter Summary**

In this chapter I presented the overarching mixed-methods research strategy, its connectivity with the dissertation’s theoretical grounding, and its relevance to methodological gaps in the literature on studying food access. Particularly, I utilised a case study method of inquiry, and described the research design, including methods of data gathering, sampling, participant recruitment and analyses, for both qualitative and quantitative strands of the research. Chapter Four follows with an abbreviated history of the study site, Louisville, Kentucky, and presentation of the results and analyses of the study. The reader will find that I have divided the chapter into three sections that improves comprehension.
CHAPTER FOUR

RESULTS

Introduction

I continue the discussion and analysis of the Healthy in a Hurry Corner Store Initiative in Louisville, Kentucky in this chapter by presenting the findings of the study conducted from the Spring of 2013 through Spring of 2014. This chapter is divided into three parts. In Part I, I discuss the site of the study, Louisville, in greater detail that includes an abbreviated history of the city leading up to a description of Louisville, as it presently exists. Using demographic data, I show that Louisville is a city divided geographically, racially and economically. Part II presents the results from two qualitative procedures – five major themes from stakeholder interviews and findings from researcher observations of the corner store and the case study neighbourhoods. Finally, in Part III, I present sales data of produce sold from the corner store during the period of the intervention (March, 2010 – March, 2012), geospatial analysis of the location of the participating corner stores in relation to supermarkets and larger grocery stores, and results and analyses of the survey instrument measuring perceived access administered to randomly selected residents. Altogether, these data, both qualitative and quantitative, present an evaluation of the intervention to increase access to 50,000 households in initiative designated neighbourhoods, and, expand our understanding of planning for healthy food access.

Part I: Study Site

Louisville, Kentucky

Louisville-Jefferson County, Kentucky (I will use ‘Louisville’ for expediency) was an appropriate choice for this study because it offers both typical and unique conditions that are useful for inter-city generalisations and understanding of local neighbourhood-level complexities. Louisville is a typical post-industrial, mid-size U.S. city faced with similar regional and governance issues. It is has a high number of diverse neighbourhoods that supports a comparative study, and although not a world city such as New York City, Chicago or San Francisco, Metro Louisville is a primate city in the region, dominating the economy of 13 counties including four in Southern Indiana (Bennett and Gatz, 2008; Heilbrun, 1987; Losch, 1964; Project, 2005; Sassen, 2000). And pertinent to this study, Louisville has an active food movement that has secured formal changes to its land development codes.
The consolidated city of Metro Louisville (the old City of Louisville ‘merged’ with its surrounding lesser cities and unincorporated areas of Jefferson County in 2003) has a 2010 census population of 741,096 people, making it the 27th largest city by population nationally (U.S. Census Bureau, 2010; Savitch and Vogel, 2004). This governmental restructuring was in response to the deleterious effects of suburbanisation, the loss of higher income residents to new development outside the city limits, and deindustrialisation which resulted in the loss of good-paying jobs and talent – typical of many mid-sized cities (Savitch et al., 1993; Savitch and Vogel, 2000).

In addition, Louisville struggled with racial residential segregation and the diffusion of Black political power. The consolidation of the central city with its county may have brought benefits in revenue, efficiencies in fire and law enforcement services, among others, but it also diluted political representation of the city’s African American population (Savitch and Vogel, 2004). While the city’s dissimilarity index\(^4\) has improved from 64.5 in 2000 to 56.0 in 2010, African American political representation on the metro council fell from 33 per cent pre-merger to 23 per cent after consolidation (Belcher and Zhang, 2011; Policy, 2002; Savitch and Vogel, 2004; Siegel and Swanson, 2004). But this diffusion of political power was mitigated by Louisville’s expanded economic reach. With comparable cities such as Nashville, Cincinnati, Indianapolis and Lexington 100 miles or more away, Louisville is the major economic engine in the region (Bennett and Gatz, 2008; Savitch and Vogel, 2000, 2004).

However, Louisville also possesses unique features that made it a suitable case for this study. The city has gained national exposure for its efforts to improve its economy and the health of its residents through access to healthy local food (Raja et al., 2008). The food movement has been institutionalised in Louisville: the Louisville Food Policy Advisor Council (a quasi-governmental body comprised of community stakeholders) was established by executive order in 2010 to advise the mayor on the local food issues (Jennings, 2011). The mayor has incorporated the promotion of the local food economy as a goal in his strategic plan for the city\(^5\). Nationally, Louisville was one of 44 cities awarded a grant through the U.S. Centers for Disease Control and the American Recovery and Reinvestment Act Prevention and Wellness Initiative:

\(^4\) Dissimilarity Index: measures the evenness of the spatial distribution of two population groups across a city. The dissimilarity index ranges between 0 and 1, with 0 indicating complete integration and 1 suggesting perfect segregation (Belcher & Zhang, 2011; Siegel & Swanson, 2004). A score of 60% or above is considered ‘highly’ segregated (Brookings Report, 2002).
Communities Putting Prevention to Work. The grant for $7.9 Million was used on local programmes to combat obesity through healthy food access including the ‘Healthy in a Hurry Corner Store Initiative’.

In Spring of 2013, the Louisville Metro Council took steps to amend its land development codes to add two new sections, ‘community gardens’ and ‘market gardens’. In addition to zoning and legislative support, the city works with many non-profits and grassroots organisations including Fresh Stop, Inc., The People’s Garden Project in the Shawnee Neighbourhood, and the Healthy Kids, Healthy Communities project that support action to prevent childhood obesity through access to healthy food and promote an active lifestyle.

Finally, Louisville has a sufficiently large and diverse population that supports comparisons among neighbourhoods. The city’s number of neighbourhoods increased from 92 before 2003, to 194 after consolidation (U.S. Census Bureau, 2010). In order to gain a better understanding of these characteristics, I provide a brief history of Louisville, its growth and development and subsequent bifurcation along racial, health and class categories.

An Abbreviated History of Louisville, Kentucky

The City of Metropolitan Louisville-Jefferson County, Kentucky (Figure 16) includes both the central city of Louisville and areas in the remainder of Jefferson County. Jefferson County has a total area of approximately 399 square miles of which approximately 13 square miles is water (U.S. census, 2010). The city rests on a limestone bed in the flood plain of the Ohio River Valley at the Falls of the Ohio – a limestone ridge that disrupts the flow of the Ohio River on its way south. Archaeological evidence have determined that prior to European settlement – 1,000 A.D. to 1650, the area was inhabited by Mississippian Cultures, mainly the Shawnee and Cherokee. Eventually, through battles and land sales among the French, British and Native Americans, in 1778 the Anglo-American settlement was founded by Colonel George Rogers Clark, and chartered as ‘Louisville’ (1780) in honour of the French monarch Louis XVI who supported the United States in the Revolutionary War against Great Britain (Yater, 1979). By 1800, the census reported that Louisville had a population of 349 residents making it the fifth largest town in Kentucky (Bennett and Gatz, 2008; Louisville, 2014; Yater, 1979, 2001).

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6 Retrieved from http://www.louisvilleky.gov/Health/PuttingPreventiontoWork/
The Falls was an important natural resource in the formation and development of the town of Louisville. Because the river was impassable at the Falls, vessels had to be hauled on to land, carried around the falls and returned into the river to continue their journey. Passengers would disembark at Louisville for food or lodging as the ships’ cargo were warehoused and insured. The banks, financiers and local businesses became the early economic anchors for the fledgling town. Later the construction of canals and locks made navigating the Falls less cumbersome and positioned Louisville as an important transhipment point for trade, warehousing, meat packing and commerce. Steamboats in the 1820s and the Louisville and Nashville Railroad Company (L&N) further boosted Louisville’s profile as a major port city that connected the northeast to Southern markets. By 1830, the population of Louisville had risen to
11,345 surpassing Lexington as the largest urban area in Kentucky. And by 1900, 19.1% of its population was African American, the seventh largest population of African Americans in the nation at the time (Bennett and Gatz, 2008; P. Smith et al., 2011; Yater, 1979, 2001).

As with other major cities, Louisville experienced the economic convulsions of the Great Depression and World War II. Gradually other political and economic forces worked to transform the city from a ‘blue-collar’, with a manufacturing-based economy, to an economy based on services and administration furnished by new skyscrapers for offices of large national and international corporations such as General Electric, the United Parcel Service, Kentucky Fried Chicken and affiliates, Humana Healthcare and the headquarters for the Presbyterian Church (U.S.A.) (Yater, 1979, 2001). New electric railways increased the pace of suburbanisation to areas such as Anchorage, Fern Creek, Prospect and a new shopping mall in St. Matthews. However, African Americans who continued to reside in neighbourhoods such as Smoketown (east of the Central Business District [CBD]) and Little Parkland (then known as ‘Little Africa’) and California both west of the CBD, that were settled by former slaves were excluded from these new suburbs (Smith, et al., 2011). In May of 1914, the Mayor of the City of Louisville signed a pro-segregation ordinance, adopted by the City Council and Board of Alderman, that prohibited Blacks from ‘buying property on blocks where Whites resided, and Whites from buying on blocks where Blacks resided’ (Wright, 1985; Yater, 2001). Although this residential segregation ordinance was unanimously overturned by the Supreme Court in 1917 (Wright, 1985: p. 235; Yater, 2001), we find that a century later, these neighbourhoods remain predominantly African American and low income.

**Louisville-Jefferson County, Kentucky: A Tale of Two Cities**

A recent study of Louisville shows that the regional City of Louisville, the most populated city in the state of Kentucky and the twenty-seventh largest city in the United States, has a population of 741,096 residents (U.S. Census Summary File 1, 2010). Figure 17 shows the proportion of the population held by each racial group. Three quarters of the population is White and twenty per cent Black. The most interesting characteristic, however, is the spatial distribution of the city’s residents by race and other critical socio-economic indicators.
Figures 18, 19, 20 and 21 illustrate the spatial distribution of African Americans, poverty rate, median household income and educational attainment by census tract in Jefferson County respectively. Black residents are concentrated in the central city with high densities in census tracts immediately west of the CBD and another large community in an older suburb to the southeast of the downtown area (Community Farm Alliance, 2007; P. Smith et al., 2011). Incidentally, the tracts with the highest rates of poverty, lowest household median incomes and lowest educational achievement levels coincide with the spatial sorting of African Americans.
Figure 18. African American Population by Census Tract

Figure 19. Poverty Rate
Figure 20. Median Household Income

Figure 21. Educational Attainment
Spatially we are able to identify a pattern of dispersion that describes the relationship between race and socio-economic class. The pattern indicates that census tracts with high populations of African Americans tend to be low-income areas located west and immediately east of the Central Business District, with a few older suburbs to the south and southeast. Crutcher’s (2013) comparative study of 22 census tracts west of the CBD and 22 census tracts to the east found that the East-West bifurcation of the city emerges in other critical social statistics such as the number of businesses, female-headed households and automobile ownership that hold significant implications for access to essential resources such as fresh fruits and vegetables and public policy (see Table 7) (Community Farm Alliance, 2007; Crutcher, 2013; L. M. Smith, 2008). Upon closer examination of West Louisville, the deleterious effects of the scarcity of supportive resources and over-abundance of negative conditions have crystallised around public health and nutrition.

Table 7. A Comparison of East and West Louisville

<table>
<thead>
<tr>
<th></th>
<th>Unemployment Rate</th>
<th>Own a car</th>
<th>Median household income</th>
<th>Female-headed household</th>
<th>Vacant units</th>
<th>Bachelor’s Degree or higher</th>
<th>All businesses</th>
<th>Percent African American</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Louisville</td>
<td>13.4%</td>
<td>69.1%</td>
<td>$21,733</td>
<td>38%</td>
<td>22%</td>
<td>7%</td>
<td>1,856</td>
<td>79%</td>
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<tr>
<td>East Louisville</td>
<td>3.9%</td>
<td>93.2%</td>
<td>$59,600</td>
<td>8%</td>
<td>9%</td>
<td>55%</td>
<td>6,352</td>
<td>4%</td>
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West Louisville. West Louisville, also known as ‘the West End’, is roughly demarked by the Central Business District and Ninth Street as the dividing line on its east, Algonquin Parkway to the south and the Ohio River to the north and west, and encompasses ten defined neighbourhood areas, see Figure 22 (Community Farm Alliance, 2007; Crutcher, 2013; L. M. Smith, 2008). The West Louisville area has a population of 48,359 residents where 79 per cent are African American – some census tracts are as high as 98 per cent African American (U.S. Census Bureau, 2010). Although in the early 1900s the Russell neighbourhood had a vibrant and prosperous Black middle-class, Russell and other West Louisville neighbourhoods (and East Downtown) have been in steady decline since the 1970s. Today West Louisville lags behind the rest of the county in median household income, educational attainment, employment and businesses. Single mothers head almost forty per cent of households as compared to eight per cent in East Louisville, and with low private automobile ownership, accessing suburban jobs and
supermarkets becomes a challenge for most families (Burns, 1994; Dreier et al., 2004; Ihlanfeldt, 1997; Savitch et al., 1993).

Figure 22. West Louisville Neighbourhoods

Louisville, as did many other cities in the United States at the time, suffered the adverse effects of the combination of federal housing and highway policies as well as state and local urban renewal programmes of the 1950s and 1960s intended to eliminate urban blight and revitalise declining urban communities (Dreier et al., 2004; Teaford, 2000; Temkin and Rohe, 1996). As urban renewal initiatives destabilised largely African American communities, the Federal Highway Act (1956) and discriminatory housing policies promoted the exodus of tax revenue from the city, the suburbanisation of middle-class Whites (middle-class Blacks followed later), and the loss of businesses (source of employment) and supermarkets in particular (Community Farm Alliance, 2007; Burns, 1994; Dreier et al., 2004; Levy, 2011; Yater, 2001).
This was not always the case, however. As independently owned, small grocery stores began to lose political influence, corporately owned national and regions supermarket chains begun to dominate the retail market in the 1980s. These supermarket chains, responding to broader physical (zoning ordinances, for example), social (crime and neighbourhood perception), economic (labour conditions and concentrated poverty) and political (political power and community strength) forces, eventually left West Louisville and the central city for cheaper land and increased profits in suburban areas creating ‘gaps’ in the retail grocery market and ‘food imbalanced’ communities (Community Farm Alliance, 2007; Gallagher, 2007; Kwate, 2008; Treuhaft and Karpyn, 2010; Yater, 2001). Residents in food imbalanced neighbourhoods (that are usually predominantly Black and Hispanic) – also referred to as ‘food deserts’ (Ploeg et al., 2012; Whelan et al., 2002; Wrigley, 2002) and as being ‘food insecure’ (www.foodsecurity.org; Gottlieb and Fisher, 1996; Hamm and Bellows, 2003), have greater access to ‘fringe food’ locations than to mainstream food establishments that offer more health-promoting food such as large, chain supermarkets (Gallagher, 2007; Kwate, 2008; Wekerle, 2004; Zenk, Schulz, Israel, et al., 2005). Broadway Street, the major thorough fair that runs through the Central Business District, West Louisville and East Downtown and divides the city into north and south, is found to have approximately 24 fast-food restaurants along a 2.8-mile segment. This is said to be the highest concentration of fast-food restaurants in the state (Community Farm Alliance, 2007). However, West Louisville has only three full service supermarkets. The issue of healthy food access is compounded by the fact that the few independent shops that remain in these low-income, low-access areas have thin profit margins and are plagued by high ownership turnover. Consequently, it has become profitable to offer less perishable goods and carry more sugary beverages and processed, energy-dense snack foods with longer shelf lives. The few fruits and vegetables they do carry are usually of poor quality and highly priced compared to large supermarkets (Chung and Myers, 1999; Lewis et al., 2005; Weatherspoon et al., 2012). It is also typical for these stores located in deprived neighbourhoods to offer potentially troublesome products such as lottery tickets, alcohol and tobacco products to increase customer traffic to their stores (Community Farm Alliance, 2007; Pearce et al., 2008; P. Smith et al., 2011). The combination and prolonged exposure to a lack of healthy food and easy access to unhealthy products resulted in negative health outcomes for residents. It is within this context of deprivation – lack of beneficial resources, and protracted exposure to an obesogenic
Part II: Qualitative Data Results

In this section I present qualitative findings from semi-structured interviews of stakeholders and data from my observations of the corner store and neighbourhoods. The stakeholders were all involved in the food movement in Louisville and have been instrumental at different times in the public discussion, formation or implementation of the initiative. I also documented the store environment, my observation of customer interaction with store associates, the variety and condition of the produce on sale, and the neighbourhood environment within which the corner store is located.

These data, consistent with the mixed methods research strategy and supported by the research questions, achieved two objectives. First, on their own, they provide deep, rich context and analysis of the political, social, and policy environment from which the initiative was conceived and implemented. We gain insight, which would not be realised without this qualitative component, into high-level community discourse on what should be done and the approaches that should be taken to address the issue of food access in designated neighbourhoods and broader community concerns of health equity and local economic development. We learn about the conflicts, power struggles, compromises and frustrations that the diverse group of stakeholders faced throughout the duration of the intervention. Second, when analysed with quantitative findings, these qualitative results improved the study’s validity through corroboration of quantitative data – a process referred to as data triangulation (Bryman, 2006; Greene et al., 1989; Teddlie and Tashakkori, 2009). For example, researcher observations of the quality of the produce in the store may or may not support questionnaire findings that residents perceived the food as having poor quality. Qualitative data also provided the reader a more comprehensive account of the inquiry (‘completeness’) and context. By analysing multiple data types, research findings are more reliable and conclusions are robust and credible (Creswell and Plano Clark, 2011; Creswell, 2013; Patton, 2002; Silverman and Marvasti, 2008). Thus, findings are more useful to practitioners and stakeholders (Teddlie and Tashakkori, 2009).

Stakeholder Interviews

I interviewed seven key community stakeholders, each from different professional arenas. They are representative of the faith-based community – Presbyterian Church (U.S.A.), National
Hunger Program, academia – the University of Louisville, elected decision makers – Metro Council government, the public service sector – Louisville Metro Department of Health and Wellness, an urban agriculturalist, a food justice advocate, and a non-governmental organisation, the Young Men’s Christian Association (YMCA of Greater Louisville). (Due to the critical positions held by the stakeholders, additional information would unethically reveal their identities.) It is important to note that I did speak informally with two corner storeowners who participated in the initiative; however, I was unable to secure a formal interview with them given the demands on their time. The information gathered from the discussions with the corner storeowners were not directly used in this analysis; however, they provided context and improved my ability to interpret the data.

Qualitative data gathered through stakeholder interviews were managed using MaxQDA 11 a qualitative data analytical software. Recorded interviews were transcribed and entered into MaxQDA 11. Through the Interpretive approach discussed earlier in Chapter Three, I then coded segments of the interviews and identified broader themes that are presented below in Table 8. In studying the transcripts, I used a combination of analytical approaches to systematically identify themes. Firstly, I worked back and forth through the transcribed interviews to gain an overall idea of stakeholder’s position. I then applied a ‘methodology for listening’ whereby I attempted to see the world from the perspective of the stakeholder. Lastly, analysis of the text continued with a content analysis in which key words, phrases or ideas were identified (Silverman and Marvasti, 2008). Examples of key words and phrases are, ‘food justice’, ‘food insecure neighbourhood’, ‘food desert’, ‘local produce’, ‘access’, ‘afford’ or ‘affordable’. By employing these dynamic approaches where codes and themes were allowed to ‘emerge’ from the transcripts, rather than establishing ‘pre-figured’ codes and themes, I was able to code selected text. Through my insights and intuition as a researcher and experience in the community, I examined the interviews for contradictions, peculiar elements, pauses and silences, among others, to identify segments and themes.

**Themes**

I initially identified sixteen broad ideas contained in the interviews. After further analyses, these ‘ideas’ were distilled to five ‘coded themes’ that I determined were the most basic essence that expressed the main ideas of the interviews (see Table 8).
Table 8. Coded Themes

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<thead>
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<th>Themes</th>
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<tr>
<td>Goals</td>
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<td>Agenda Conflicts</td>
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<td>Food Justice</td>
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<td>Food Access</td>
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<td>Comprehensive Strategy</td>
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<td>Socialisation</td>
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<tr>
<td>Corner Store Challenges</td>
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<td>Relationships</td>
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These coded themes (and sub-themes) were, *Goals (sub-theme): Agenda Conflicts; Food Justice; Food Access (sub-themes): Comprehensive Strategy, Transportation, Affordability and Socialisation; Corner Store Challenges and Relationships*. These themes are significant not only because they provide great depth into our understanding of the Healthy in a Hurry Corner Store Initiative and its goal to increase access of healthy food to 50,000 households, but also because they correspond to this study’s research questions. The research questions are: 1) How has the Healthy in a Hurry Corner Store Initiative (HHCSI) affected access to healthy food in food insecure communities? 2) How has the Healthy in a Hurry Corner Store Initiative affected ‘perceived’ access? And 3) What factor(s) most influenced residents’ perception of access? Accordingly, these themes correlated with each other and with the purpose of this study.

**Goals.** This theme is characterised by stakeholder responses that expressed their understanding of the goals of the Healthy in a Hurry Corner Store Initiative and how well they believed that the initiative had met those goals. The sub-theme, *Agenda Conflicts*, corresponds well with this theme by presenting the conflicting assumptions about the intervention and its goal, and by providing a richer understanding into the reasons why stakeholders hold negative views of the outcome of the initiative. In referencing the broader research purpose of this study, that is, to explore the non-physical dimensions of access, this theme and sub-theme shed light on the complexity of the planning and policy arenas within which dialogue on urban food access occur. They also provided a nuanced and more authentic idea of access.

As the interviews indicated, stakeholders were aware of the stated goal of the initiative and expressed what meeting that goal would look like, ‘One is food access…’ and, ‘So success is people actually buying produce, but also changing shifting what else is being purchased within
the store.’ However, six of the seven stakeholders interviewed expressed that the initiative had not met its goal and was, in fact, a disservice to residents, as one stakeholder stated, ‘I think it’s a, it’s really an embarrassment to the community… if the point was to connect families to fresh, farm-fresh food, I don’t think they’ve reached that goal.’

When asked why they felt that the initiative was not successful, one stakeholder responded that, ‘I think they’re very short-sighted in nature…’ and, ‘if people are really making better food choices, we should see a decrease in weight, which is supposed to be the issue or rationale behind it.’ This response speaks to the larger goal of reducing obesity of which food access is only a step towards that goal. This respondent is also implying that physical access alone is insufficient to alter behaviour in families’ food selection.

Another stakeholder was more cautious and felt that perhaps there needed to have been more outreach and promotion of the initiative to residents: ‘I’m not sure I can evaluate it… I’m not sure what they’re doing to market themselves or outreach to the community.’ This stakeholder also felt that another reason the initiative was not as successful as it could have been is because food was not a critical issue for most residents: ‘For those that aren’t thinking about it… crime, it’s economics, it’s education, it’s other issues that probably outweigh it.’ Perhaps notions of access to healthy food reflect a form of cultural colonisation by middle class whites who seek to imposed their food values upon low income minority communities (Guthman, 2008a, 2011; Slocum, 2007).

The designing, funding and implementing food policies require the combined efforts of many agencies, organisations, businesses and communities across the municipality (Wegener et al., 2012). To the extent that stakeholders are able to collaborate across agendas, food policies will be more comprehensive, long-term, receive more support from the community and be successful. The Agenda Conflicts sub-theme encompasses these ideas. Although stakeholders acknowledged that there is significant work occurring in Louisville on urban food systems and food access, it seemed that much of the work is disjointed and that collaborations are scarce.

My sense overall of the Louisville food system and especially work around building more equitable sustainable food economy, food access issues, and justice within the system is that there is some good work going on… in separate pockets around the city, whether that’s non-profits or government work or churches trying to address these issues.

One prominent source of tension is between the public health agenda and the local food
advocates.

One of the things with ‘Healthy in a Hurry’, is the public health tension with the local food piece of it… there’s a strong stream in the public health side that just wants people to eat better diets, right? By their definition of ‘better’. So there’s that piece; then of course, on the local food side, there are the farmers who need to make a living.

There are some people who are 100% locavores, so they don’t have bananas and mangoes and those things, perfect and fine for you. I’m trying to get people off of chips and cupcakes and Ho-Hos and tons of ice cream. So if they need to have watermelon chunks in the wintertime in Kentucky from Guatemala, have at it.

This is an important debate to have when considering local food access policies. Some scholars have cautioned that we should be aware of the ‘local trap’, the notion that local food is healthier and more just (Born and Purcell, 2006; Feagan, 2007; Guthman, 2011). The debate here is not only about a preference for locally produced, farm-fresh food, but also about what should be the goal of the initiative. This tension among stakeholders suggests that the assumption among some was that local corner stores would be shelved with local food. The issue that the produce was to be locally produced was not mentioned in the objectives of the initiative.

Another point of contention among stakeholders was the issue of local economic growth. This relates to the issue of locally grown food above, where stakeholders protest the fact the healthy corner store initiative was not tied to a broader economic agenda for the communities it was intended to serve (Bendfeldt et al., 2011). One stakeholder expressed their concern:

We also see the entrepreneurial piece that food can be a real catalyst for growth, educative growth, tourism development NuLu [‘New Louisville’ development project], Portland, and all that stuff. Who gets? I mean you know is it about celebrity chefs getting more restaurants and then hiring more people for the god-awful wages that restaurant workers get. Is that the model?

…but I don’t see a business development model that’s really concerned with decent wages for people whose wages are real marginal. And to me I think that’s where the impetus should be you know, living wages rather than pop star chefs.

Lastly, food policy planners and stakeholders must be aware of exogenous factors that dictate the local policy arena.
I guess that one thing that I would hope is that while each of the small groups are working on their very tangible initiatives and projects, that they also devote some portion of their time, even if it’s just in the messaging around critiquing the problem they’re trying to address, to look at the corporate dominance and corporate intervention in elections, in policy-making, and in the food system. This discussion on Goals and Agenda Conflicts brings to the fore the often-unseen complexity of the food policy arena, and that the assumptions about policy outcomes are contested and contextualised based on stakeholder perspectives. Assumptions and understanding of goals are illustrative of the notions of access and how to achieve it.

**Food Access.** We learned from the excerpts above that a definition of ‘access’ and how to improve it is nuanced and contextualised and extend beyond the boundaries of location, affordability, short-term investments, and the provenance of the produce being sold. The stakeholder interviews revealed an awareness of the disparity of views and the complexity of access to healthy food, which reinforces the emergent theories that access entails the physical and the immaterial, the objective and the emotive (Alkon et al., 2013; Caspi et al., 2012; Eckert and Shetty, 2011). As such, the four sub-themes address access from three perspectives, policy – **Comprehensive Strategy and Affordability**, mobility – **Transportation**, and social – **Socialisation**. **Comprehensive strategy and affordability** offer insights into the broader food policy agenda. They queried the impact and necessary support infrastructure for the healthy corner store initiative, and explored access through the well-intentioned, yet seemingly conflicting Federal programmes, Supplemental Nutrition Assistance Program (SNAP) and Special Supplemental Nutrition Program for Women, Infants and Children (WIC) to alleviate hunger and food insecurity by making food more affordable. The **transportation** sub-theme challenges our notions of depravity, while the sub-theme on **socialisation** re-works the existing concept of access by calling our attention to intangible socio-culture cues in the media and elsewhere that affects families’ food decision making.

The comprehensive strategy sub-theme captured stakeholder concerns that there was no over-arching public agenda to address access to healthy food, and that relying solely on the healthy corner store initiative was not sufficient. ‘So we really do lack a comprehensive food access strategy,’ said one stakeholder. ‘I have the opinion that corner stores alone are not the answer to food access. I think there needs to be a very multi-pronged approach,’ said another.
The issue of access is one of scale and scope, requiring a diversity of shopping options including a large full-service supermarket, which is seen as a more permanent solution for food insecure families. Innovative partnerships would produce supportive multisectoral community approaches that would improve access to families (Cummins et al., 2014; Glanz and Yaroch, 2004).

So corner stores don’t mean that you don’t need green carts, that you don’t need farmer’s markets, it doesn’t mean that you don’t need larger big box grocery stores. You need all of those things.

Because if you convert every corner store in West Louisville to a healthy corner store, it’s still not going to create equitable access to healthful actions as it would if you had a large scale independent or chain grocer in those communities.

However, having the semblance of food access alone does not ensure that families are food secure. The stakeholder quote below draws attention to the fact that food insecurity remains the primary goal of the intervention.

And so if we don’t start thinking long-term, if we still keep celebrating the short-term, yes we have more food, more farmers’ markets than we did have two years ago, we got more community gardens than we had two years ago, we got more urban agriculturalists, people growing little pots of tomatoes in their windows than two years ago, we still have food insecure people who don’t consume fruits and vegetables because we are not creating larger solutions.

Just as limited food initiatives such as community gardens on brownfields and farmers’ markets require government sanctions, so too do larger solutions such as attracting chain supper markets entail the support of all levels of government, and space for effective policy opportunities must be created at the Federal level as well (Clancy, 2014; Pothukuchi, 2009; Rocha and Lessa, 2009; Wegener et al., 2012). The discussion on Affordability addressed access through food pricing at the local level, and demonstrated the effects that Federal policies have had on residents’ abilities to afford healthy food.

Whereas private automobile availability has shown to be less impacting on residents’ access to healthy food in case study neighbourhoods, food price has shown to significantly impact residents’ food-buying decisions (Chung and Myers, Jr., 1999; Hilbert et al., 2014; Zenk,
Schulz, Hollis-Neely, et al., 2005). One stakeholder stated that, ‘It’s [access to healthy food] more about money and knowledge.’ This, however, is a very complex issue. Healthy food in neighbourhood corner stores must not only be priced competitively against healthy food in grocery stores in other neighbourhoods, but also and perhaps most importantly, it must be priced competitively relative to unhealthy food (highly-processed, energy-dense food) located in the same store. One stakeholder stated:

It [produce] has to be competitively priced. So if the apple is a dollar, but so is something that I perceive as going to make my family ‘full’ for far longer than one apple, I may make that choice.

Most often, however, the price of produce is higher when compared to that of unhealthy food. Some suggest a voucher system that would alleviate some of the financial burden on families and incentivize the purchase of healthy food. The suggestion is for the Special Supplemental Nutrition Program for Women, Infants and Children (or WIC) vouchers to be made available not only for women with children, but for eligible seniors to be used at farmers’ markets (WIC-Farmers’ Market Coupon). Another idea to address the issue of affordability is the Farm-to-School initiative that would provide healthy food to schoolchildren at a free or reduced price (Flournoy, 2011). However, these initiatives would require legislative changes at the State level, ‘policy changes that need to happen at State and National levels to increase the amount of money that’s going per child into the school food system. So food as you know is one of those things that kind of connects to everything else, but our problems facing locally are connected to National Farm Bill legislation, trade agreements, you know the whole bit,’ stated one stakeholder.

An even more immediate issue however, is the advertent unaffordability of produce in corner stores for residents’ who are low income and those who receive food assistance through the Supplemental Nutrition Assistance Program (SNAP or ‘food stamps’) and the relative affordability of residents utilizing the WIC voucher system. Food stamps, unlike WIC, are a cash benefit transferred to low-come citizens based on eligibility criteria. WIC is a voucher system and the recipient does not experience the price of the good as cost. Because of this, storeowners realizing that many of their patrons are on the WIC system are incentivized to mark-up the price of produce. The storeowner earns larger profits and the shopper is unharmed in the short-term. However, this hurts other low-income customers using ‘food stamps’ for whom
higher prices reduce their buying power, as it takes more of their SNAP benefits to purchase the same amount of food. As one stakeholder explained:

… You know if you go into a corner store that accepts WIC, its prices are high because the individual who participates in the WIC Program doesn’t pay an actual fee for anything; they operate on a voucher system. So [a corner store] can charge $5 for a gallon of milk and someone else can charge $2.50, the recipient doesn’t recognize a difference, but the storeowner gets to claim a certain price per unit for that piece. Well for family members living in those communities who aren’t participants in that program it makes a difference if there are things that are marked-up… I think that kind of makes a difference over time in terms of how people make these decisions.

Food affordability also affects low-income families in other ways. In order to access and acquire healthy food, families must consider suitable, reliable and sustainable mobility options that empower them to access locations of affordable food (Alliance, 2007; Coveney and O’Dwyer, 2009). Not surprisingly, with approximately 69 per cent of West Louisville households compared to 93 per cent of households in East Louisville own a private automobile (American Community Survey, 2007-2011; Table 7), I found that transportation emerged as a crucial sub-theme throughout stakeholder interviews.

According to Clifton’s (2004) study on mobility strategies for food provisioning, low-income families employ a combination of four primary mobility strategies each with trade-offs to access affordable food. They may purchase a private automobile, receive rides from friends and family members, take public transit, or walk to food store when possible. A private automobile, which provides the greatest flexibility in terms of scope and timing of shopping trips of the four options, is useful in linking trips to bargain shop at multiple destinations thereby increasing access to affordable food while reducing travel time. In addition, it provides for convenient transportation of goods bought. However, owning and maintaining a car has negative financial effects on household incomes and families’ ability to meet living expenses including purchasing healthy food. Car-sharing is another option that contributes to increase access to healthy food. Community car cooperatives have shown success in Seattle, Portland, Boston, Honolulu and San Francisco. One stakeholder in this Louisville study mentioned that at times there were Saturday car-sharing events organised by residents. Car-sharing however, limits shopping to certain times and days, and makes it difficult for residents to bargain shop at other locations. Public transit
options such as the public bus service and taxis may also be problematic for some low-income families. Often many are unable to afford taxi fares, and buses have unsuitable routes and times, may be unreliable, and it is inconvenient to transport bags of groceries on a crowded bus (Clifton, 2004; Coombs et al., 2010). Lastly, walking to grocery stores may be dangerous in some neighbourhoods; or some residents, particularly the elderly may be unable to walk longer distances (Sharkey, 2009; Wilson et al., 2004). In addition, walking with groceries poses significant challenges especially for residents who must travel with young children (Clifton, 2004).

Interestingly, and despite findings elsewhere, stakeholders (as well as residents as illustrated in the questionnaire results) in this study expressed the view that Transportation was not a significant challenge for families living in grocery gaps to access healthy food: ‘I think people are finding their way to food. They’re not sitting around or they’re not necessarily walking to the corner store, they’re finding a ride. I mean people can get around pretty good on the bus around here, you know.’ One stakeholder ranked the issues associated with accessing healthy food according to a survey their organization had conducted.

Taste… that was number one, …supporting local farmers number two, number three, affordability, and number four accessibility was zero per cent. In other words people didn’t think that transportation was an issue at all.

This discussion on transportation being a hindrance on families’ ability to acquire healthy food confronts the larger theory of ‘deprivation-amplification’ that is the aegis for many healthy food interventions (Macintyre, 2007; Pearce et al., 2007; D. M. Smith et al., 2010). At the core of the ‘deprivation-amplification’ theory is the idea that residents or households suffering the effects of depravity (that is, low incomes or high unemployment, as examples) tend to live in neighbourhoods where these deprivations are amplified through fewer health-promoting resources. In this case, approximately a third of West Louisville families (compared to 7% of families in East Louisville) were deprived of a private vehicle (American Community Survey, 2007-2011). This is in conjunction with living in food insecure areas should result in poorer health. However, this study found that families did not identify mobility and the lack of owning a motor vehicle as challenges to their ability acquire healthy food. This suggests, and points to the thesis of this dissertation, that there are other, perhaps not as tangible dimensions to access that must be explored. I suggest in this study that we should explore external psycho-social and
socialisation cues that affect residents’ attitudes and food-choice decisions.

**Socialisation**, as identified as a sub-theme of the **Food Access** theme, characterised the ideas that access to healthy and affordable food goes beyond the availability of objective measures, such as the placement of farmers’ markets and corner stores, and included intangible dimensions of the food environment (Caspi et al., 2012; Gustafson et al., 2011; L. V. Moore et al., 2008; Zenk, Schulz, Hollis-Neely, et al., 2005). This accounts for the emotive prompts that are shared both formally and informally through friends, family, co-workers or broadcast media that affect food-buying decisions (K. Moore et al., 2013; P. J. Morgan et al., 2010). Three stakeholders discussed the idea that much of food selection is being made based on socio-cultural cues, and that the potential mitigating factor against these cues, residents’ level of knowledge of healthy food, was limited possibly due to low exposure to food environments where access to healthy food is facilitated. Stakeholders commented that, ‘It’s really... an education thing.’ Others stated, ‘Well I say a lot of it is publicity or education.’ And, ‘It’s more about... knowledge.’ Another suggested that members of the medical community who interact directly with residents, can be more involved in educating residents about the benefits of making healthier food choices, ‘You know, I just don’t know how much involvement people are getting from the medical professionals.’

These discussions are instructive for planners and policy analysts to consider the nuances that the provision healthy food entails (Hodgson, 2012; Raja, Born, et al., 2008a). ‘So we have to think about what are the factors that influence choice on where to shop other than the quality of food.’ And one such factor is that, ‘[healthy food] must appeal to what people find culturally acceptable’ (Alkon and Norgaard, 2009; Guthman, 2008a). But what is considered socially and culturally acceptable is also affected by what is publicised in popular media. One stakeholder related to me that:

[Residents] know absolutely and they know that the food they’re eating is making them sick. And they also know like even an 11-year-old boy over at the [school] told me the other day, that it’s because of the TV ads are telling them they should eat this. Where’s the ads for the vegetables, they were asking me. And why don’t we have the ads for the vegetables?

These responses suggest that intervening food policies to improve access must consider the lived experiences of how food choices are made, because, as one stakeholder mentioned, ‘even if you
build them [grocery stores] in their communities, what’s going to be their utilisation?’ This becomes critical as, ‘…not all the families [living in food insecure neighbourhoods] identified themselves as having limited food access’. In part, the stakeholder continued, this occurs, ‘…when crisis becomes conditions. So it’s no longer a crisis from their perspective; it’s just what they’ve come to expect in terms of access in their neighbourhood.’ Access then, is not merely the presence of and distance from quality, affordable and acceptable healthy food. It includes psychosocial dimensions, notions of depravity, and the internalisation of one’s social status and ideas of power and efficacy to bring about change (Ellaway et al., 2012; Lovasi et al., 2009; Pearce et al., 2007).

Food Justice. The idea that for many residents a condition of crisis had become their normal living conditions has signalled to observers that the uneven distribution, transportation and access to healthy food is reflective of systemic inequalities based on race and socio-economic class distinctions (Alkon and Agyeman, 2011; Bedore, 2010; Kwate, 2008). Stakeholders recognized that, ‘All people are deserving of equal living options.’ And that in the Louisville context, there is a stark difference in food access where affluent East Louisville neighbourhoods have better access to healthy food.

So you know I think it just clearly represents a divide, as people describe it as “food apartheid” where some have and some don’t have the money to afford it or even if they have some money and would want to make that choice, don’t have access to it in their neighbourhoods, don’t have the time to go across town to go shop in Whole Foods or some of the nicer farmer’s markets, and there’s no great option for farmer’s markets in all of West Louisville.

This stakeholder stated that, ‘Even the little bit of local food, really healthy produce, meat and dairy that comes into the city, and my guess would be somewhere between two and five per cent of all that’s eaten in the city, it is mostly consumed by middle-class, upper-middle-class folks.’ Food justice scholars have long confirmed this phenomenon, and have critically added that recent food access interventions are not truly justice seeking, and merely apply minor reforms to an unjust food system. Furthermore, by defining the issue as one of food, interventions take on a ‘civilising’ tone and set out to teach others how they should eat (Guthman, 2008a, 2008b, 2011; Slocum, 2007). There remains the need for further research into food access interventions particularly the use of corner stores and their appropriateness.
Corner Store Challenges. The issues of food access and justice require us to think more critically into our selected methods for improvement. Often corner stores are thought to be a contributing factor to local obesogenic environments as they carry few healthy foods and mostly highly processed, energy-dense food (Alkon and Norgaard, 2009; Cummins and Macintyre, 2002a; Macintyre, 2007; P. Smith et al., 2011; Valera et al., 2009). Lately, researched evidence have shown that corner stores can be a promising options to improve the food environment and lower rates of obesity in food insecurity areas (Gittelsohn et al., 2008; H.-J. Song et al., 2011; Wrigley et al., 2004). However, further scientific work is needed that investigates the challenges faced by these stores in providing healthy food to their communities.

In this Louisville study, the challenges experienced by the corner stores directly impacted the quality of produce they sold. The poor quality of produce offered was partly due to the fact that corner stores were often under-staffed. Often the storeowner and family members worked long hours in the store. They had little time or skill to select the best produce or available workers to maintain the produce section. One stakeholder acknowledged that, ‘These are very hard-working people. I mean they spend 14 hours a day in these stores, and a lot of times the owner is also the clerk, is also the stocker. I mean sometimes the owner is the only person in the store for 10 of those 14 hours. So it’s just a tough thing for them to kind of seek out a new opportunity like doing local food.’

Storeowners were unable to leave their stores to procure their own produce, and producers were unwilling to deliver the produce to the stores because of the perception that West Louisville was dangerous. There was no surprise then, when stakeholders commented that:

You go into the place and the lettuce is wilted and the cucumbers are on the verge of moulding, so that doesn’t look attractive for someone to purchase it.

And it was appalling. The quality of produce was wilted and icky. There was meat, but the meat was sort of brown. There wasn’t much there… I mean the produce was really bad and the shopkeeper was not particularly warm or friendly or forthcoming or anything either.

The signage was fine and all of that was great, but yeah I think the quality, the age, the condition of the produce was pretty unappealing.

In addition to the poor quality food, high prices, and unwelcoming store worker, the initiative suffered from the lack of a clear definition of a ‘healthy corner store’; participating
stores were highly variable.

They are all very, very different. Every store is completely different.

So there wasn’t a consistent definition in terms of what needed to be in the store. What proportion of stock or food supply needed to be considered healthy and nutritious? Furthermore, there were issues of ‘food stamp’ fraud and other criminal activities at one store:

And they would also buy electronics off of people, they were potentially buying things that had been stolen. It was later reported that there were some reports of SNAP fraud within the store. They were using like a SNAP license that was not their own for a while, got in trouble with the city.

These responses offer useful insights that are generalizable to other similar interventions in other cities. They suggest that although neighbourhood corner stores hold potential for improved food environments, policy makers need more knowledge into their business operations and to provide support where needed. We must also consider that corner stores alone may not be the answer to local access to healthy food (Cummins et al., 2014; Gittelsohn et al., 2006; Gittelsohn, Suratkar, et al., 2010). Stakeholders highlighted the need for more supportive networks for relationship building among community partners that would lead to building more food-balanced communities.

**Relationships.** The inception of the Healthy in a Hurry Corner Store Initiative was instrumental in, ‘bringing together different stakeholders committed to food access and a healthier food system together for a conversation and strategizing that can play a positive role in building upon the strengths that are in the city and connecting people to resources.’ Although the initiative was imposed upon the community without its consent, and grant-driven, meaning that goals were already agreed upon by policy makers without much community contribution, there were clear signs of efforts to involve the community at various phases of the project. Children from a local middle school gave the initiative its name, ‘Healthy in a Hurry’ (Skow, 2012). One community selected the store to participate in the initiative. In all neighbourhoods, there were attempts to engage the participating corner stores in the neighbourhood associations and advocacy groups to provide another layer of oversight beyond the grant-funded project manager. Stores were encouraged to hire from within the community, which they did. One of the Youth Advocates from the Shawnee neighbourhood was hired as a part-time produce manager for the Shawnee Market, and other residents were hired on full-time status. Said one
stakeholder, ‘I think the degree of relationship building and connecting that happens at the community level is essential for any improvements in justice within the food system’.

However, there were instances where relationships between the store and its surrounding community were unpleasant. A stakeholder described the relationship between one corner storeowner and the neighbourhood residents: recall that the population of West Louisville is 79% African American (American Community Survey, 2007-2011). The stakeholder estimated that over 80% of corner storeowners in West Louisville are of Middle-eastern decent. In one example, the stakeholder stated, ‘the storeowner had some racial tensions with the community there. He had run out of the store screaming at people that they were stealing from him. His wife sort of always calmed things down, but he was sort of known as this grumpy old man that was racist and you know. So you know we did our best to calm some of those tensions, but it probably wasn’t the best store to work with in the first place.’ Within a month after that incident, the storeowner had sold the store to new proprietors and moved back home to the Kingdom of Jordan. Relationships between corner stores and families are very important not only to the success of the corner store. But also, in increasing access to healthy food through ‘store credit’ to shoppers as the stakeholder explained:

You have stores that you know, know this woman’s grandchildren and her kids and what’s been happening with their kids and, “oh she forgot her wallet”, and they’ll gladly extend her a line of credit, “just pay me the next time that you’re here.” So it’s very, very, very relationship-centric and I think that that’s really important to the identity of these communities. So it’s a really great place to make positive change happen, whether it’s around produce or around something else.

In this sense, corner stores may extend beyond serving an instrumental function for families and improve neighbourhood capacity and social capital by contributing to the sociocultural milieu of the area (Jacobs, 1961; Putnam, 1995; Temkin and Rohe, 1998). A stakeholder mentioned that corner stores could become a ‘third place’ for residents. The home is considered the ‘first place’, the work place is the second, and the place of worship or the corner store could become the ‘third place’ that fosters neighbourhood cohesion and builds social capital. ‘Are we also suggesting that corner stores have a social responsibility to their communities?’ asked one stakeholder. ‘We talk about corporate responsibility all the time for our large employers, but is there a social responsibility that these smaller stores need to have?’ If
indeed corner stores are called to exhibit social responsibility to their communities, this may profoundly impact corner store sales on products such as tobacco, alcohol, drug paraphernalia and highly processed and unhealthy foods and beverages – products that may be harmful to the community but contributes significantly to the corner store’s profits. The implications are great.

The longevity and success of the healthy corner store initiative also depended on the relationships among corner stores, between corner stores and producers, and between the managing agency and the corner stores. These three categories of relationships were not fully developed during the duration of the initiative. The high turnover rate of store ownership made it difficult for corner storeowners to establish a professional network supportive of their participation in the Healthy Corner Store Initiative. Corner stores also had to establish relationships with producers without much knowledge or skill with produce procurement. Commented one stakeholder, ‘The food purchasing issue, one of the storeowners raised that with me as an issue in terms of, “where am I supposed to get this stuff?”’

And so there was this little, we used to fund a mobile farmers market, there was a guy from the mobile farmers market and a guy from a “Healthy and a Hurry” Corner Store used to drive to the next county over or two counties over, Shelby County, and purchase things from a farmer once a week. I mean they just got in their personal vehicle, went up and did that. And so you imagine you’re hearing from them how they’re doing and it just leads you to kind of think, we never really understood what the dynamics were…

Although it was known that the initiative was temporary, there was little support for the corner stores from the managing agency. One stakeholder described the relationship between the agency and the corner stores as:

And the relationship has pretty much been we work with you for three or four months or six months and then once your banner is up we’re sort of through. And we may come back to you from time to time to ask for data; that’s not the way to bring about sustainable change.

The quote above could be compared with the quote below that described normative ideas about the roles of the local government and managing agencies in supporting corner stores. Relationships that are interpreted by storeowners as being supportive and not extractive may be useful to increase food access to local communities. The stakeholder stated that:

[Government’s role] becomes more that of a facilitator and helping them purchase and
helping them identify and understand what the market looks like, helping them leverage opportunities, and over long-term potentially again looking at how do we offer subsidies. Is there something we can work out that would minimize our cost, but still be a financial incentive to the corner storeowner? You know let’s come up with a list of 10 things that would be essential to the store.

These professional relationships were crucial in price setting that affected corner store profits and their ability to continue to provide healthy food. One stakeholder commented that storeowners had to set their own prices for the produce they now agreed to sell, ‘You might have the capacity to do things by weight. You might have to price things individually. I mean so the aspect of pricing. There’s just so much more work that goes into it.’ With the difficulties of procuring produce and setting effective prices without guidance, it became clear to stakeholders and storeowners that the initiative would not be very profitable for most corner stores. ‘I realized very quickly that you can’t, at least at this stage of trying to get produce in small corner stores in Louisville, just rely on storeowners who think that they’re going to make a lot of money off of this,’ commented one stakeholder.

Summary

In summary of this sub-section, I interviewed seven stakeholders representing five sectors of the initiative, Business Community, Government, Health and Education, Academia and Community-based Organisations. Five major themes were coded from the interviews, Goals, Food Access, Food Justice, Corner Store Challenges, and Relationships. Generally, stakeholders felt that the initiative did not meet its stated goal of improving access to healthy food to residents in one initiative designated neighbourhood. Stakeholders concurred that although there were some community involvement in and support for the Healthy in a Hurry Corner Store Initiative, the project was imposed upon the community. The initiative was short-sighted, lacked standardisation, not well planned or implemented and resulted in a waste of community resources that could have been used to develop a comprehensive long-term plan to address food access and food justice in Louisville. The initiative suffered from agenda conflicts among food advocacy groups – those who promoted local food and those who advocated for healthy diets. Most importantly however, critical relationships among corner stores, neighbourhood residents and the managing agency were not fully developed. These undeveloped relationships acerbated pre-existing challenges experienced by the corner stores, and the results were poor quality food,
higher prices for families, and a short-term intervention that was not profitable for corner stores to maintain.

Field Notes: Corner Store

The use of field notes in the form of visual data is consistent with this study’s general purpose, theoretical and methodological grounding, and significance. Its purpose, in addition to an evaluation of the Healthy in a Hurry Corner Store Initiative, was to provide an expanded concept of access beyond our current views. The Pragmatist-Participatory theoretical paradigm is supportive of the mixed-methods methodological strategy that includes different types and sources of data (Creswell and Plano Clark, 2011; Patton, 2002; Silverman and Marvasti, 2008). The visual field notes were essential in describing the physical food environments of case study neighbourhoods, and our understanding the constraints, supports and daily-lived experiences of families. These all speak to the study’s significance of exploring perceived as well as objective ideas of access and strengthen the study’s findings and conclusions. Hence, along with analyses of survey results and stakeholder responses, these contribute to the completeness of our understanding of the effects of the intervention and a deeper view of the residents’ food environments.

Recall in Chapter Three above I discussed the selection of Intervention and Control cases. In order to select the control cases, I assigned ten variables into three broad groups, population density, access and distress (see Table 2 on page 48), and created a map showing the six categories of census tracts. Although all four case study neighbourhoods are located in the Working Poor and Minority/Immigrant Communities classification, there are significant differences between the intervention neighbourhoods (A and B) and control neighbourhoods (C and D). These differences are impactful on perceived and objective access to healthy food.

I collected notes on the presence and conditions of sidewalks, vacant units, blight, vehicular and pedestrian traffic flow, perceived safety, and how likely it would be for residents to walk to the store and back home with groceries. These notes were useful in providing context to quantitative data types, depth to stakeholder responses, and improved my interpretive ability by informing my intuition and ideas about the neighbourhoods food environment from the perspective of the families who live there (Creswell and Plano Clark, 2011; Creswell, 2013; Teddlie and Tashakkori, 2009).
Figure 23 below shows an intersection in Neighbourhood A and Figure 24 illustrates an apartment complex in Neighbourhood D. I found that both sets of neighbourhoods had insufficient or poorly kept sidewalks that would impact walking to corner stores. And whereas all neighbourhoods had vacant lots and shuttered residential units, these characteristics of urban blight were observed more starkly in the control neighbourhoods, C and D. In significant portions of Neighbourhoods C and D, entire apartment buildings were shuttered. This fact contributes context and adds to our depth of understanding of food access in a manner that would not be realised through geospatial analyses alone.

In addition to the neighbourhood’s walkability, families may not be able to afford healthy food or feel unsafe traveling to neighbourhood stores for food due to the sense of insecurity created by the vacant buildings and the presence of fewer residents to look out for crime (Jacobs, 1961).

In comparison: Case study Neighbourhoods A and B located in the initiative designated area also struggle economically. The participating healthy corner store is located in a large commercial building that houses a few small businesses such as a daycare facility, health centre and dental office among others. Many years ago a major chain supermarket provided local access to healthy food and anchored these businesses in the community. However, local economic events such as the closing of the Phillip Morris tobacco factory that employed many of the neighbourhood residents, contributed to the closing of the supermarket and the economic disinvestment of the area. The building, partly shown in Figure 25 below, continues to serve as a one-stop location for goods and services. From this perspective, the location of the healthy corner store seems to be ideally located for convenience shopping, and the presence of others shopping nearby may add to a collective sense of safety (Jacobs, 1961).
Finally, I recorded field notes in the form of visual data of fruits and vegetables as they appeared on display in the participating healthy corner store, the condition of the store, and the interaction between store associates and customers. Upon visiting the healthy corner store in the Shawnee neighbourhood in the Spring of 2014, I was greeted by a store associate and asked if I needed help. I found the store to be sufficiently lit and generally clean, although its appearance was less pristine than the supermarkets and natural food stores in higher income neighbourhoods. As I walked through the store I observed the products and the interactions between store associates and customers. Customers seemed relaxed and having a comfortable shopping experienced. Figures 26, 27, 28 and 29 illustrate the quality and condition of fruits and vegetables on display in the store.

Figure 26 shows heads of lettuce, a few bell peppers and some lemons, and Figure 27 shows the condition of oranges and apples on display in a refrigerator labelled with the Healthy in a Hurry signage. These produce all appeared to be in poor condition and showed evidence of
deterioration and wilting. As such they were not appealing to the eyes or touch. The same is true for the onions (Figure 28) and Idaho Potatoes (Figure 29) below. It appears the potatoes had begun to germinate within their packages. The condition of the produce also suggested another narrative. It appears that families are purchasing produce from the corner store as the fruits and vegetables are scattered over the display and not neatly arranged. To confirm produce sales during the period of the intervention, I acquired sales receipts from the corner store. I present these findings in Part III of this chapter on Quantitative Data Results.

![Figure 28. Onions](image1) ![Figure 29. Idaho Potatoes](image2)

**Part III: Quantitative Data Results**

In this section of the dissertation, I present three different types of quantitative data, sales receipts from produce sold in the corner store during the intervention period, geospatial analysis of the corner store locations, and results from the survey instrument administered to randomly selected households. Sales receipts provided useful information on healthy food affordability, the availability of produce in the corner store, and the demand for healthy food in the neighbourhood (Bodor et al., 2010; Walker et al., 2012; Zenk et al., 2005). Geospatial analysis of participating corner stores is a method of evaluating the locational appropriateness of the participating corner stores. Were they strategically selected to fill in the ‘grocery gaps’ in food insecure neighbourhoods, or were they situated in areas already sufficiently serviced? Finally, I present the results of the survey instrument used to measure residents’ perception of access to healthy food in their neighbourhood. In this sub-section, I discuss the results of the survey, analyse the psychometric properties of each dimension, and present significant findings.

Blending of both qualitative and quantitative data supports the study’s methodological strategy of pragmatically mixing methods and theoretical foundation in Critical Planning Theory.
that recognises multiple epistemologies and promotes a democratic and more equitable planning process (Brenner, 2009; Forester, 1980; Hoch, 2007; Marcuse, 2009). This approach contributes to the study’s significance through the Inductive-Deductive research cycle, where the continuous dialogue between theory and empirical findings improves credibility (internal validity), authenticity (external validity), transferability (reliability) and dependability (objectivity) (Creswell and Plano Clark, 2011; Creswell, 2013).

**Produce Sales**

This corner store is one of the first to participate in the healthy corner store initiative, and the store that has kept the most consistent records of produce costs and sales.

<table>
<thead>
<tr>
<th>Table 9. Corner Store Produce Sales, September 2010 – November, 2011.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Invoice Cost</strong></td>
</tr>
<tr>
<td>September, 2010</td>
</tr>
<tr>
<td>October, 2010</td>
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<tr>
<td>November, 2010</td>
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<td>December, 2010</td>
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<td>January, 2011</td>
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<td>February, 2011</td>
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<td>March, 2011</td>
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<td>April, 2011</td>
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<td>May, 2011</td>
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<td>June, 2011</td>
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<td>July, 2011</td>
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<tr>
<td>August, 2011</td>
</tr>
<tr>
<td>September, 2011</td>
</tr>
<tr>
<td>October, 2011</td>
</tr>
<tr>
<td>November, 2011</td>
</tr>
</tbody>
</table>

| Total | $12,425.92 | $15,842.85 | $3,416.93 | $1,318.00 | $4,734.93 |

*All amounts are Post-intervention.
Table 9 and Figure 30 above show produce sales from September, 2010 through November, 2011 with data for April, 2011 not available.

Over the fourteen months of participation, the corner store spent almost Thirteen thousand dollars ($12,915.87) on purchasing produce, and received $15,842.85 in revenue from sales. The total benefits in profits for the store over the duration of its participation in the initiative, was $4,734.93 – this includes initiative-contributed funds of $1,318.00. Monthly expenditures range from $500.35 in January of 2011 to $1,553.08 in October of 2010, for an average monthly cost of $887.57. On average the corner store sold $1,131.63 worth of produce monthly; with highest sales of $1,559.01 in October of 2010, and lowest of $743.86 in February of 2011. The store recorded a profit every month except its inaugural month, September of 2010. The chart below shows the corner store’s produce costs and sales over time.

![Corner Store Produce Sales Chart](image)

Figure 30. Corner Store Produce Sales Chart

Over the period of the initiative, the corner store was able to maintain produce sales of just under $1,200 while its costs fell gradually over time. This is suggestive that a) there was a significant demand for fruits and vegetables, b) that the corner store had improved access to fresh produce
to families in the neighbourhood, and c) that the corner store was able to generate a profit from its sale of fresh produce. These findings are discussed further in Chapter Five.

**Geospatial Analysis**

This study, in part, is an evaluative project of the healthy corner store initiative that was implemented in West Louisville. As one of the stated objectives of the healthy corner store intervention was to increase access to healthy food and beverage for 50,000 households in its designated area, store location is a critical dimension of access (see discussion of the Five Dimensions of Access in Chapter Two) that the corner stores must satisfy in order to increase healthy food access (Bodor et al., 2010; Dannefer et al., 2012; Gittelsohn, Song, et al., 2010; Gittelsohn, Suratkar, et al., 2010). Ideally, participating corner stores would be located in areas not already serviced by large grocery stores. That is, they would be located in ‘grocery gaps’ in order to effectively decrease the distance between neighbourhood families and healthy food. Figure 31 below illustrates the locations of grocery stores, such as Sav-a-Lot and Pic-Pac, and regional chain supermarkets (Kroger supermarkets), throughout the study area, within their corresponding half-mile buffer that represents a ten-minute walk to the store.

![Healthy Food Access in Case Study Areas](image)

**Figure 31. Healthy Food Access in Case Study Areas**
As is shown in the map above, Case study neighbourhoods A and B are located outside of the half-mile ‘storeprint’ of any grocery store or supermarket. Case study neighbourhood C located outside the initiative designated area is within the storeprint of a grocery store.

Figure 32, illustrates the overlay of healthy corner stores (identified as red stars) on the map of large grocery stores and supermarkets in the initiative designated area. From this analysis, four of the six healthy stores are located outside of the half-mile storeprint of any of the grocery stores and supermarkets; thus it could be said that they are located in ‘grocery gaps’ and have improved locational access to families in those areas. Two healthy corner stores are located within the half-mile service buffer of a supermarket and a grocery store. This should also increase access to healthy food for families by providing for bargain shopping which improves affordability, and increases the likelihood that families would be able to locate preferred or culturally appropriate produce (Ploeg et al., 2009; Webber et al., 2010). The presence of healthy corner stores in close proximity to large grocery and supermarkets would also improve the neighbourhood food environment overall and has been shown to affect perception of healthy food access which may lead to changes in food selection (Cummins et al., 2014; Freedman and Bell, 2009; Zenk, Schulz, Hollis-Neely, et al., 2005).
**Survey Instrument Results**

The survey instrument, administered to randomly selected households in four case study neighbourhoods, was used to measure residents’ perception of access. The objective of the instrument was to assess the effect that the Healthy in a Hurry Corner Store Initiative had had on residents’ perception of access to healthy food in their neighbourhoods. Perceived access was measured on five dimensions: *acceptability* – which assessed the residents’ perceptions of produce quality and their relationship with the store’s associates; *accessibility* – evaluated the store’s location in relation to residents as well as residents’ transportation resources; *accommodation* – examined residents’ perceptions of store hours and the presentation and display of produces in the store; *affordability* – explored residents’ perception of food prices in the corner store in relation to prices at other non-neighbourhood stores, as well as residents’ perceived ability to afford to produce, and *availability* – assessed residents’ perception of the volume, variety and frequency with which healthy food is available at the corner store. Results from each of the four neighbourhoods were compared and analysed. In addition, these results, when interpreted through the triangulation method of analysis with produce sales data, geospatial analysis and qualitative data, provided deeper context of the food environment, improved the integrity of conclusions and enhanced our understanding of access (Creswell, 2009; Teddlie and Tashakkori, 2009).

This study had a sample frame of 70 households (Table 4 on page 57) from which I received 37 responses – that is, a response rate of 53 per cent (Table 10 below).

<table>
<thead>
<tr>
<th>Case Study Group</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case Study A</td>
<td>13</td>
</tr>
<tr>
<td>Case Study B</td>
<td>10</td>
</tr>
<tr>
<td>Case Study C</td>
<td>7</td>
</tr>
<tr>
<td>Case Study D</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total Responses</strong></td>
<td><strong>37</strong></td>
</tr>
</tbody>
</table>

Response rates are affected by costs, time, the population of interest, survey format – in-person interviews, telephone surveys, self-administered questionnaire – mail and electronic surveys and
method of distribution and return of questionnaires (Babbie, 2004; Dillman, 2000; Fink, 1995b, 2009). And although there is no agreed-upon acceptable rate, there are steps to improve survey response rates such as: provide token financial incentives, describing privacy measures to respondents, develop rapport, provide a respondent-friendly questionnaire, and have personalised introductory, follow-up and final contact correspondence (Dillman, 2000; Fink, 2009).

For many reasons including ‘research fatigue’ and lack of trust of researchers, low-income, central city communities – particularly those of colour tend to have low rates of participation (Fink, 2009; Fowler, 2009). However, the rate of participation for this study is acceptable in comparison to studies of similar communities. In the case of immigrant communities, there might be language challenges to overcome and residents may perceive researchers as outsiders connected with governmental authorities that may be threatening to some depending on their documentation status. The researcher can improve response rates in these communities by developing sincere relationships with residents, community leaders and ‘gatekeepers’ (Dillman, 2000; Fink, 2009). With limited resources and time in the field, I was unable to establish deeper community relationships with residents. However, I had established professional and collegial relationships with many key stakeholders who are also community gatekeepers. Through these relationships my work in the communities was ‘legitimised’ and this improved response rates. Finally, the response rate for this study was most affected by resources that would increase residents’ awareness of study prior to being interviewed such as an introductory letter and follow-up letters to households that were unavailable to participate at the time of visit (Dillman, 2000). Incentive tokens would have improve recruitment, and encouraged survey completion (Dillman, 2000; Fink, 1995; Fowler, 2009).

In the preceding three sub-sections, I present a description of and comparisons of residents and their responses across case study neighbourhoods on selected questionnaire items. Then I discuss associations among variables, and analyse significant findings among the four groups. And lastly, test the robustness of the findings through tests of reliability of the access dimension items.

Describing Participants. Participants were adult (age 18 years or older) householders who were randomly selected to participate in this study based on the neighbourhood in which they lived. Of the 37 respondents, eleven or approximately 30% were women and 70% men. It is conceivable that men were more likely than women to answer the door when a stranger knocks
as an issue of safety, and therefore, there are not an equal number of women participants. The racial profile of the respondents reflected the racial unevenness of Louisville. Whereas, the racial composition of Metro Louisville is approximately three-quarters (74%) White and 21% African American (Figure 17, page 70), the sample of respondents was 78% African American or Black and 16% White. This is consistent with demographic data presented in Table 7 (page 73) suggesting that the sample accurately reflected the racial composition and distribution of Louisville.

The level of educational attainment of sample residents was not as consistent, yet acceptable. According to the 2009-2013 American Community Survey, 88% of Louisville residents had a high school diploma or higher, and 30% had a bachelor’s degree or higher. Comparatively, approximately 72% of residents in this sample (Table 11 below) possessed a high school diploma or higher (sum of high school grad, Associate’s degree, Bachelor’s degree and Master’s degree) and almost 14% had a bachelor’s degree or higher. There are two possible explanations for this higher figure. As I reported in Table 7 above that 7% (ACS 2009-2011) of West Louisville’s population had a bachelor’s degree or higher, this increase may be the result of more educated residents moving into new, low-rent developments (HOPE VI developments) in West Louisville – the Park DuValle and Russell neighbourhoods. A new Walgreens store with a grocery section was recently built on Broadway Avenue that would attract some residents to the area. And secondly, the higher percentage may be the result of a small sample size and should be considered with this fact in mind.

Economically, almost half (49%) of the respondents stated that they lived in households that earned less than $30,000 per annum. This suggests an approximate 50% poverty as compared to 16% across Metro Louisville (ACS, 2009-2013), and is consistent with Figure 19 that illustrated poverty rates between 41 and 81 per cent across West and South Louisville. Concomitantly, approximately 19% or 7 respondents reported that they received Supplement Nutrition Assistance benefits (SNAP or ‘food stamps’), while according to U.S. Census Bureau’s 2009-2013 American Community Survey, 14% of households in Metro Louisville received food assistance. Interestingly, given the 49% poverty rate of respondent households and 19% SNAP recipient rate, further research should explore how financially-challenged households access and afford healthy food without assistance.
Table 11. Demographic Characteristics

<table>
<thead>
<tr>
<th>Gender (n = 37)</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>11</td>
<td>29.7</td>
</tr>
<tr>
<td>Male</td>
<td>26</td>
<td>70.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race (n = 37)</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>1</td>
<td>2.7</td>
</tr>
<tr>
<td>Biracial or Multiracial</td>
<td>1</td>
<td>2.7</td>
</tr>
<tr>
<td>Black or African American</td>
<td>29</td>
<td>78.4</td>
</tr>
<tr>
<td>White or Caucasian</td>
<td>6</td>
<td>16.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age (n = 36)</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-29</td>
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<td>16.7</td>
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<tr>
<td>30-39</td>
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<td>40-49</td>
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<td>19.4</td>
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<td>50-59</td>
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<tr>
<td>60-69</td>
<td>8</td>
<td>22.2</td>
</tr>
<tr>
<td>70+</td>
<td>3</td>
<td>8.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Median Household Income (n = 33)</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0-14,999</td>
<td>10</td>
<td>30.3</td>
</tr>
<tr>
<td>$15,000-29,999</td>
<td>6</td>
<td>18.2</td>
</tr>
<tr>
<td>$30,000-49,999</td>
<td>7</td>
<td>21.2</td>
</tr>
<tr>
<td>$50,000-74,999</td>
<td>6</td>
<td>18.2</td>
</tr>
<tr>
<td>$75,000-99,999</td>
<td>1</td>
<td>3.0</td>
</tr>
<tr>
<td>Declined</td>
<td>3</td>
<td>9.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Educational Attainment (n = 36)</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than high school graduate of equivalent</td>
<td>3</td>
<td>8.3</td>
</tr>
<tr>
<td>High school graduate or equivalent</td>
<td>16</td>
<td>44.4</td>
</tr>
<tr>
<td>Some college-no degree</td>
<td>7</td>
<td>19.4</td>
</tr>
<tr>
<td>Associate’s degree</td>
<td>5</td>
<td>13.9</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>4</td>
<td>11.1</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>1</td>
<td>2.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Food Assistance (n = 36)</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>7</td>
<td>19.4</td>
</tr>
<tr>
<td>No</td>
<td>29</td>
<td>80.6</td>
</tr>
</tbody>
</table>

The survey questionnaire suggested stable neighbourhoods as almost half (47.2%) of participants responded that they have lived in their neighbourhoods for ten or more years (Table 12). Only Neighbourhood D had more recent than long-term residents. The length of time the participant lived in neighbourhoods was useful in gathering baseline data on their shopping rituals prior to the implementation of the Healthy in a Hurry Corner Store Initiative.
Table 12. Years Lived in Neighbourhood

<table>
<thead>
<tr>
<th>Years lived in neighbourhood</th>
<th>Neighbourhood</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Less than 1 year</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>1-3 years</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>4-6 years</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7-10 years</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>More than 10 years</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>9</td>
</tr>
</tbody>
</table>

Most families (78.4%) shopped at large, chain grocery stores located outside of their neighbourhoods prior to the initiative. But there was also indication of diversity in food procurement options as participants also listed personal gardens and farmers’ markets as alternatives they have utilised in accessing healthy food (see Table 13). However, when asked whether they shopped at the neighbourhood corner store, almost 80% (Table 14) stated that they do not shop there for fruits and vegetables, while 22% acknowledged that they did. (Note, that no respondent from neighbourhoods C or D [the control neighbourhoods] stated that they shop at the healthy corner store; this suggests little or no contamination of the control by the intervention.) As a follow-up question, I was interested in the mode of transportation and the length of time it took for residents to travel to these out-of-neighbourhood stores. Table 43 (Appendix L) indicated that over half of respondents (54.1%) used their personal vehicle to travel to stores. And 10% (10.8%) were able to use or share a vehicle with a friend of family member. In all, over 60% of respondents had access to a motor vehicle to travel to the supermarket. A quarter (24.3%) of respondents reported that they are able to walk to the grocery store from their place of residence; 5.4% took the bus and 3% biked to stores. These responses suggested that physical location and vehicle access were not insurmountable barriers to the majority of residents in acquiring healthy food. However, there remains a segment of the population who were marginalised by the current food system, and for whom, it is hoped, interventions such as these would be able to provide respite by filling in the gaps in healthy good provision in their neighbourhoods.
Table 13. Shop Prior to Initiative

<table>
<thead>
<tr>
<th>Shop prior to initiative</th>
<th>Neighbourhood</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Personal garden</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Farmers’ market</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Supermarket</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 14. Introductory Question

<table>
<thead>
<tr>
<th>Shop at Corner Store</th>
<th>Neighbourhood</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Yes</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>10</td>
</tr>
</tbody>
</table>

To better understand the food-ways and food choices of the study participants, I asked about their perception of neighbourhood crime and the affordability and availability of healthy food. Forty-three per cent (43.2% from Table 43, Appendix L) of participants reported that crime was not a barrier for them to acquire healthy food in their neighbourhoods. It appeared that participants were uncertain about food costs. Twenty-seven per cent were unsure whether or not fruits and vegetables cost more in their neighbourhood than in others, although almost 20% (18.9%) agreed that they did. Twenty-seven per cent of respondents disagreed that fresh produce cost the same in their neighbourhood as they do in other areas, and approximately 25% were unsure. Responses to these two questions suggested that families were unclear about healthy food prices and this may be a structural issue that would warrant further scientific examination. However, 37.8% of respondents agreed that food costs were not a barrier to healthy eating, and 46% agreed that they could afford fruits and vegetables sold at the corner store.

I also explored the perception of availability of healthy food in the case study neighbourhoods. When asked whether fruits and vegetables were available in their
neighbourhoods, 65% of participants agreed. However, slightly fewer (46%) agreed that the corner store in their neighbourhood sold fruits and vegetables. More than half (56.7%) the participants agreed or strongly agreed that the corner store sold the type of fruits and vegetables that they want to buy, and 48.6% agreed that there were enough to buy. Lastly, I examined the notion of whether residents felt they bought more fruits and vegetables since the corner store began carrying produce. More than half (54.1%) disagreed that they bought more fruits and vegetables. However, 13.5% agreed that they did. This does not suggest that the intervention was ineffective. It might be the case that for a minority (14%) of the population, healthy food is not accessible through conventional sources, and for them, the healthy corner store intervention had improved access to affordable, healthy food.

**Psychometrics**

In the five sub-sections that follow, I present analyses of the construct, *Access*, being studied along with the five dimensions and their items. These items were inductively derived through an extensive reading of peer-reviewed literature on healthy food access and corner stores (Caspi et al., 2012; Cummins et al., 2014; Gustafson et al., 2011; Guthman, 2008b; K. Moore et al., 2013; Sharkey et al., 2010). Prior to administration, the survey was inspected by experts and tested by a class of urban planning graduate students for readability. However, this population is markedly different from the residents in the case study neighbourhoods, and without a pilot test, reliability remained a concern. Each dimension has a set of questions upon which it is measured. I analysed correlations among the items of each dimension, and reviewed Cronbach’s alpha ($\alpha$) scores to measure internal consistency. By convention, correlation coefficients of +/- .26 to +/- .50 = fair degree of relationship, +/- .51 to +/- .75 = moderate to good relationship, and over +/- .75 = very good to excellent relationship. Alpha scores of .70 or higher are considered acceptable (DeVellis, 2012; Field, 2009; Fink, 1995a).

**Acceptability.** The dimension, Acceptability, was intended to measure residents’ feelings and perceptions about the quality of the produce for sale and customer service from store workers – were they helped, greeted or felt welcomed at the store. Its initial alpha score is .624, which is lower than the acceptable .70, as shown in Table 15 below.
Table 15. Acceptability Dimension and Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>α if deleted</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptability</td>
<td>3.82</td>
<td>.41</td>
<td>.624</td>
<td></td>
</tr>
<tr>
<td>GREET</td>
<td>3.77</td>
<td>.53</td>
<td>.651</td>
<td></td>
</tr>
<tr>
<td>HELP</td>
<td>3.82</td>
<td>.66</td>
<td>.510</td>
<td></td>
</tr>
<tr>
<td>RACIAL</td>
<td>4.36</td>
<td>.58</td>
<td>.746</td>
<td></td>
</tr>
<tr>
<td>WILTED</td>
<td>3.36</td>
<td>1.00</td>
<td>.544</td>
<td></td>
</tr>
<tr>
<td>ROT</td>
<td>3.77</td>
<td>.81</td>
<td>.464</td>
<td></td>
</tr>
</tbody>
</table>

Closer analysis of the items revealed three sets of correlations among its variables. Table 16 illustrates that there is a weak but statistically significant relationship between the variables ROT and HELP, \( r_s = .414, p < .05 \); a weak, and inverse relationship that is also statistically significant between WILTED and RACIAL, \( r_s = -.397, p < .05 \), and a moderate and significant relationship between ROT and WILTED, \( r_s = .540, p < .01 \).

Table 16. Acceptability Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. GREET</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. HELP</td>
<td>.179</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. RACIAL</td>
<td>-.085</td>
<td>-.053</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. WILTED</td>
<td>.148</td>
<td>-.317</td>
<td>-.397*</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5. ROT</td>
<td>-.061</td>
<td>.414*</td>
<td>-.054</td>
<td>.540**</td>
<td>1</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01; Spearman’s Correlation Coefficient \( r_s \) used for Ordinal level variables.

Interpreting the first correlation: residents’ perceived the produce being rotten when store workers were helpful, might suggest that workers were assisting shoppers in selecting produce and often times the produce was perceived as being rotten. And the second: residents perceived the produce to be wilted when there were less negative racial terms used by store workers, might signal that less negative racial words from store workers meant that shoppers spent more time in the store and longer at inspecting the produce. As such they were able to determine that the produce were wilted. Both of these interpretations suggest that the quality of the produce is of poor quality. The relationship between ROT and WILTED is much stronger than the others mentioned above, and suggested that shoppers were likely to perceive the produce as rotten when they perceived it as wilted. The strength of this relationship compared to the weakness of the other two, suggested that the construct, Acceptability could be improve. By using the ‘alpha if deleted’ scores for analysis, the dimension of Acceptability was improved to an alpha score of .805 by removing the items GREET and RACIAL (Table 17).
Table 17. Adjusted Acceptability Dimension

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>α if deleted</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptability</td>
<td>3.82</td>
<td>.41</td>
<td></td>
<td>.805</td>
</tr>
<tr>
<td>HELP</td>
<td>3.82</td>
<td>.66</td>
<td>.510</td>
<td></td>
</tr>
<tr>
<td>WILTED</td>
<td>3.36</td>
<td>1.00</td>
<td>.544</td>
<td></td>
</tr>
<tr>
<td>ROT</td>
<td>3.77</td>
<td>.81</td>
<td>.464</td>
<td></td>
</tr>
</tbody>
</table>

Accessibility. There were four Accessibility variables used to measure respondents’ perceptions of the location of the corner store in relation to their transportation resources, times, distance and costs. Table 18 lists the Cronbach’s alpha score of .657 (below the .70 threshold) and the four variables for this dimension: MODE – mode of transportation used by residents to procure food, TIME – the length of time (in minutes) taken to travel to food store, SHP_NHD - how often residents shop for grocery in their neighbourhood, and TRANSPT – is transportation a problem for residents in procuring healthy food. Extant research in corner store intervention suggests that corner stores may be a part of the solution in food insecure neighbourhoods by reducing the distance between families and healthy food – that is, closing the ‘grocery gaps’, especially for families with limited access to a private motor vehicle (Clancy and Ruhf, 2010; Coveney and O’Dwyer, 2009; Dunkley et al., 2004; Giang et al., 2008).

Table 18. Accessibility Dimension and Variables

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>α if deleted</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>3.65</td>
<td>.71</td>
<td></td>
<td>.657</td>
</tr>
<tr>
<td>MODE</td>
<td>3.31</td>
<td>1.14</td>
<td>.695</td>
<td></td>
</tr>
<tr>
<td>TIME</td>
<td>4.09</td>
<td>1.29</td>
<td>.519</td>
<td></td>
</tr>
<tr>
<td>SHP_NHD</td>
<td>3.19</td>
<td>1.09</td>
<td>.618</td>
<td></td>
</tr>
<tr>
<td>TRANSPT</td>
<td>4.16</td>
<td>1.00</td>
<td>.706</td>
<td></td>
</tr>
</tbody>
</table>

Further analysis of the variables showed that there was a weak but statistically significant correlation between the variables SHP_NHD and TIME (Table 19). Residents’ perception of the length of time it took to travel to the corner store (which is dependent on the mode of travel) affected whether their decision to shop at the corner store. This relationship captures the importance of both objective as well as perceived access. That is, residents’ perception of access is affected by the location of the corner store and their perception of time-cost in traveling to the corner store.
Table 19. Accessibility Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. MODE</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. TIME</td>
<td>.225</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. SHP_NHD</td>
<td>.064</td>
<td>.387*</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4. TRANSPT</td>
<td>.073</td>
<td>.211</td>
<td>-.165</td>
<td>1</td>
</tr>
</tbody>
</table>

*p < .05; Spearman’s Correlation Coefficient (r_s) used for Ordinal level variables.

Table 20. Adjusted Accessibility Dimension

<table>
<thead>
<tr>
<th>Accessibility</th>
<th>Mean</th>
<th>SD</th>
<th>α if deleted</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIME</td>
<td>4.09</td>
<td>1.29</td>
<td>.721</td>
<td></td>
</tr>
<tr>
<td>SHP_NHD</td>
<td>3.19</td>
<td>1.09</td>
<td>.790</td>
<td></td>
</tr>
</tbody>
</table>

The internal reliability of this construct was improved by removing the two variables MODE and TRANSPT that increased the alpha score to .788 (Table 20).

**Accommodation.** The *Accommodation* dimension was comprised of seven items (displayed in Table 21) that measured participants’ perception of store hours of operation, the presentation and offering of fresh produce (DISPLAY), their perception of the safety of the corner store and the neighbourhood (SAFETY), and the store’s ability to accommodate different methods of payment. Although research on how corner stores accepting different forms of payment is thin, store and neighbourhood safety and their effects on access are more extensively studied (Bader et al., 2010; K. Moore et al., 2013; Webber et al., 2010). The items associated with this dimension yielded an unacceptable alpha score of .423 suggesting that there is little internal reliability among the variables.

Table 21. Accommodation Dimension and Variables

<table>
<thead>
<tr>
<th>Accommodation</th>
<th>Mean</th>
<th>SD</th>
<th>α if deleted</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISPLAY</td>
<td>4.05</td>
<td>.38</td>
<td>.451</td>
<td></td>
</tr>
<tr>
<td>OPEN</td>
<td>4.50</td>
<td>.51</td>
<td>.470</td>
<td></td>
</tr>
<tr>
<td>CRIME</td>
<td>3.55</td>
<td>1.06</td>
<td>.328</td>
<td></td>
</tr>
<tr>
<td>CHECK</td>
<td>3.27</td>
<td>.70</td>
<td>.310</td>
<td></td>
</tr>
<tr>
<td>ATM</td>
<td>3.10</td>
<td>.94</td>
<td>.326</td>
<td></td>
</tr>
<tr>
<td>SMELL</td>
<td>3.27</td>
<td>1.03</td>
<td>.444</td>
<td></td>
</tr>
<tr>
<td>SAFETY</td>
<td>4.43</td>
<td>.51</td>
<td>.479</td>
<td></td>
</tr>
</tbody>
</table>

Closer inspection of the relationship among variables showed that there was weak but
significant correlation between the variables DISPLAY and SAFETY, and a weak, inverse and
significant relationship between SMELL and OPEN (Table 22). I interpreted the former as
residents’ tend to perceive the produce display favourably if they perceive the store as being safe
to shop. And secondly, residents’ perceived the store as having a good smell if the store was
indeed opened. Although interpretable, these correlations have little practical significance.
Further research is necessary on these variables to measure accommodation and would be useful
in identifying suitable items to improve internal reliability.

Table 22. Accommodation Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. DISPLAY</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. OPEN</td>
<td>-.120</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. CRIME</td>
<td>.160</td>
<td>-.047</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. CHECK</td>
<td>-.188</td>
<td>-.185</td>
<td>.082</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. ATM</td>
<td>-.312</td>
<td>.025</td>
<td>.111</td>
<td>.334</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. SMELL</td>
<td>-.130</td>
<td>-.381*</td>
<td>-.038</td>
<td>.204</td>
<td>.324</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>7. SAFETY</td>
<td>.375*</td>
<td>.330</td>
<td>-.143</td>
<td>-.075</td>
<td>-.269</td>
<td>-.029</td>
<td>1</td>
</tr>
</tbody>
</table>

*p < .05; Spearman’s Correlation Coefficient (rs) used for Ordinal level variables.

In order to improve the alpha score of this dimension, I removed four items, DISPLAY, OPEN,
SMELL and SAFETY. However, the alpha score remained below .70 (Table 23). It might be the
case that this dimension should be re-constructed with more appropriate variables.

Table 23. Adjusted Accommodation Dimension

<table>
<thead>
<tr>
<th>Accommodation</th>
<th>Mean</th>
<th>SD</th>
<th>α if deleted</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. CRIME</td>
<td>3.55</td>
<td>1.06</td>
<td>.631</td>
<td></td>
</tr>
<tr>
<td>2. CHECK</td>
<td>3.27</td>
<td>.70</td>
<td>.519</td>
<td></td>
</tr>
<tr>
<td>3. ATM</td>
<td>3.10</td>
<td>.94</td>
<td>.611</td>
<td></td>
</tr>
</tbody>
</table>

Affordability. The fourth dimension of Access, Affordability, measured participants’
perception of the cost of healthy food relative to its cost in other neighbourhoods and residents’
perceived ability to pay for the produce. This dimension was appropriately measured on five
items producing an acceptable alpha score of .718, suggesting that the construct Affordability
has good internal consistency. See Table 24.
Table 24. Affordability Dimension and Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>α if deleted</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affordability</td>
<td>3.41</td>
<td>.40</td>
<td>.718</td>
<td></td>
</tr>
<tr>
<td>EBT</td>
<td>4.00</td>
<td>.45</td>
<td>.767</td>
<td></td>
</tr>
<tr>
<td>AFFORD</td>
<td>3.81</td>
<td>.68</td>
<td>.678</td>
<td></td>
</tr>
<tr>
<td>COST_NHD</td>
<td>2.91</td>
<td>.75</td>
<td>.701</td>
<td></td>
</tr>
<tr>
<td>COST</td>
<td>3.57</td>
<td>.68</td>
<td>.615</td>
<td></td>
</tr>
<tr>
<td>SAME_COST</td>
<td>2.68</td>
<td>.72</td>
<td>.699</td>
<td></td>
</tr>
</tbody>
</table>

The correlation matrix in Table 25 below, illustrates three sets of weak but significant correlations among its items. The variable COST was correlated with the variables AFFORD, COST_NHD and SAME_COST. That is, residents’ perception of the cost of fresh produce affected their ideas of their ability to afford healthy food as well as the price of food in their neighbourhood compared to prices in other neighbourhoods. Results from Table 43 (Appendix L) illustrate that respondents did not perceive that food costs were a challenge to eating healthy. Relatedly, residents perceived healthy food in their neighbourhood as affordable and food prices were similar to those in other neighbourhoods. These results reflect the apparent discrepancy within the literature as well. While some studies challenged our ideas of deprivation establishing that living in a ‘food desert’ does not mean that residents are food insecure, others have found that the cost of food in food insecure areas is a major challenge in families to acquire healthy food (Alkon and Norgaard, 2009; Ball et al., 2009; Chung and Myers, 1999; Ploeg, 2010; H.-J. Song et al., 2009; Tsang et al., 2007; Zenk, Schulz, Hollis-Neely, et al., 2005).

Table 25. Affordability Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. EBT</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. AFFORD</td>
<td>.237</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. COST_NHD</td>
<td>-.156</td>
<td>.264</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. COST</td>
<td>.076</td>
<td>.482*</td>
<td>.498*</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5. SAME_COST</td>
<td>-.177</td>
<td>.344</td>
<td>.270</td>
<td>.406*</td>
<td>1</td>
</tr>
</tbody>
</table>

*p < .05; Spearman’s Correlation Coefficient (r_s) used for Ordinal level variables.

Finally, even though the Cronbach’s Alpha score for this construct is .718 (Table 25) which exceeds the acceptable threshold of .70, it was improved through the elimination of the variable EBT, which brought the alpha score to .767 (Table 26).
Table 26. Adjusted Affordability Dimension

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>α if deleted</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affordability</td>
<td>3.41</td>
<td>.40</td>
<td>.767</td>
<td></td>
</tr>
<tr>
<td>AFFORD</td>
<td>3.81</td>
<td>.68</td>
<td>.763</td>
<td></td>
</tr>
<tr>
<td>COST_NHD</td>
<td>2.91</td>
<td>.75</td>
<td>.760</td>
<td></td>
</tr>
<tr>
<td>COST</td>
<td>3.57</td>
<td>.68</td>
<td>.697</td>
<td></td>
</tr>
<tr>
<td>SAME_COST</td>
<td>2.68</td>
<td>.72</td>
<td>.757</td>
<td></td>
</tr>
</tbody>
</table>

Availability. The Availability dimension measured residents’ perception of the variety and volume of fruits and vegetables offered at the corner store in relation to residents’ perception of their needs. The small alpha coefficient for this construct, .408 (Table 27) suggested very weak relationships among the six variables. However, there is a moderate and statistically significant relationship (.592 at p < .01) between the variables AVAIL_NHD and SELL (Table 28). This suggests that the corner store, now offering healthier food options, has positively impacted residents’ perception of the availability of healthy food in their neighbourhood. Residents were aware that healthy food was available in their neighbourhood and that it was sold at the corner store. This relationship is supportive of current studies that have shown the effectiveness of corner stores in improving access (objective access) to healthy food (Gittelsohn, Song, et al., 2010; Holton, 2011; Martin et al., 2012; H.-J. Song et al., 2009, 2011).

Table 27. Availability Dimension and Variables

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>α if deleted</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability</td>
<td>3.63</td>
<td>.29</td>
<td>.408</td>
<td></td>
</tr>
<tr>
<td>AVAIL_NHD</td>
<td>3.70</td>
<td>.65</td>
<td>.247</td>
<td></td>
</tr>
<tr>
<td>YR_AVAIL</td>
<td>3.62</td>
<td>.74</td>
<td>.598</td>
<td></td>
</tr>
<tr>
<td>SELL</td>
<td>3.71</td>
<td>.64</td>
<td>.339</td>
<td></td>
</tr>
<tr>
<td>TYPE</td>
<td>4.38</td>
<td>.50</td>
<td>.337</td>
<td></td>
</tr>
<tr>
<td>ENGH</td>
<td>3.81</td>
<td>.51</td>
<td>.407</td>
<td></td>
</tr>
<tr>
<td>BUY_MORE</td>
<td>2.44</td>
<td>.80</td>
<td>.404</td>
<td></td>
</tr>
</tbody>
</table>

Further analysis of the availability construct showed that its internal reliability could be improved by eliminating three variables, YR_AVAIL, ENGH and BUY_MORE (Table 29).

Table 28. Availability Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. AVAIL_NHD</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. YR_AVAIL</td>
<td>-.255</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Lastly, I computed five additional variables. These variables each represented a dimension of access, and calculated by determining the mean score of the variables associated with the dimension (see Table 30). I found that Availability was significantly, although weakly, correlated with Acceptability, and Affordability was significantly correlated with Accessibility. It might be the case that the store environment and food quality affected residents' perception of the availability of fruits and vegetables. If this is indeed the case, then it points us towards non-physical criteria of access that are brought about or affected by objective dimensions.

Similarly, residents might perceive it easier to locate and travel to corner stores if they perceive the produce sold there are more affordable than those sold in other store elsewhere. Perhaps residents have considered the opportunity cost of traveling to a distant store as a part of the cost of the produce. The perception of affordability may be affected by unit price of food as well as by distance to store and travel costs (Block et al., 2011; Glanz, 2009; Sharkey et al., 2010; Widener et al., 2013).

Table 28. Continued

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. SELL</td>
<td>.592**</td>
<td>-.303</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. TYPE</td>
<td>.319</td>
<td>-.185</td>
<td>.154</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. ENGH</td>
<td>-.166</td>
<td>.055</td>
<td>-.196</td>
<td>.053</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6. BUY_MORE</td>
<td>.103</td>
<td>.096</td>
<td>-.169</td>
<td>.185</td>
<td>.255</td>
<td>1</td>
</tr>
</tbody>
</table>

**p < .01; Spearman’s Correlation Coefficient (r_s) used for Ordinal level variables.

Table 29. Adjusted Availability Dimension

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Mean</th>
<th>SD</th>
<th>α if deleted</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affordability</td>
<td>3.63</td>
<td>.29</td>
<td>.769</td>
<td></td>
</tr>
<tr>
<td>AVAIL_NHD</td>
<td>3.70</td>
<td>.65</td>
<td>.578</td>
<td></td>
</tr>
<tr>
<td>SELL</td>
<td>3.71</td>
<td>.64</td>
<td>.659</td>
<td></td>
</tr>
<tr>
<td>TYPE</td>
<td>4.38</td>
<td>.50</td>
<td>.825</td>
<td></td>
</tr>
</tbody>
</table>

Table 30. Dimensions

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Acceptability</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Accessibility</td>
<td>.280</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Accommodation</td>
<td>.079</td>
<td>-.063</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Affordability</td>
<td>.024</td>
<td>.561**</td>
<td>.009</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
In this final sub-section, the dimensions in Table 30 above were tested against independent variables and analysed using One-way, Between-Groups Analysis of Variance tests to explore differences across neighbourhoods. The significant findings are presented below.

**Significant Findings**

In addition to the five dimension variables computed from the means of questionnaire items, I computed two dichotomous variables, ‘initiative’ and ‘storeprint’. *Initiative* represents the two major case study groups – Neighbourhoods A and B within the Initiative Designated Neighbourhood (IDN) area, and Neighbourhoods C and D located outside the initiative area. The variable *storeprint* describes the neighbourhoods that are within a half-mile radius (store’s ‘footprint’) of the food store. There were two such neighbourhoods; Neighbourhood A located within the IDN and Neighbourhood C located in the comparison area. These two variables along with eight other independent variables described in Table 31 were used in Analysis of Variance (ANOVA) tests of the five dependent variables. The ANOVA results are displayed in Tables 32 through 35.

**Table 31. Dependent and Independent Variables**

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>n</th>
<th>Range</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptability</td>
<td>22</td>
<td>1.80</td>
<td>2.80</td>
<td>4.60</td>
<td>3.82</td>
<td>.41</td>
</tr>
<tr>
<td>Accessibility</td>
<td>36</td>
<td>2.50</td>
<td>2.25</td>
<td>4.75</td>
<td>3.65</td>
<td>.71</td>
</tr>
<tr>
<td>Accommodation</td>
<td>25</td>
<td>4.00</td>
<td>1.00</td>
<td>5.00</td>
<td>3.70</td>
<td>.68</td>
</tr>
<tr>
<td>Affordability</td>
<td>22</td>
<td>2.20</td>
<td>2.00</td>
<td>4.20</td>
<td>3.35</td>
<td>.49</td>
</tr>
<tr>
<td>Availability</td>
<td>31</td>
<td>2.17</td>
<td>2.00</td>
<td>4.17</td>
<td>3.46</td>
<td>.54</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>n</th>
<th>Range</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiative</td>
<td>37</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1.38</td>
<td>.49</td>
</tr>
<tr>
<td>Storeprint</td>
<td>37</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1.46</td>
<td>.51</td>
</tr>
<tr>
<td>Ages</td>
<td>36</td>
<td>66</td>
<td>18</td>
<td>84</td>
<td>46.56</td>
<td>17.32</td>
</tr>
<tr>
<td>Gender</td>
<td>37</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1.30</td>
<td>.46</td>
</tr>
<tr>
<td>Race</td>
<td>37</td>
<td>5</td>
<td>1</td>
<td>6</td>
<td>3.41</td>
<td>1.21</td>
</tr>
<tr>
<td>Income</td>
<td>33</td>
<td>5</td>
<td>0</td>
<td>5</td>
<td>2.18</td>
<td>1.38</td>
</tr>
<tr>
<td>Education</td>
<td>36</td>
<td>5</td>
<td>1</td>
<td>6</td>
<td>2.83</td>
<td>1.28</td>
</tr>
<tr>
<td>Food Assistance</td>
<td>36</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1.81</td>
<td>.40</td>
</tr>
<tr>
<td>Neighbourhoods</td>
<td>37</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>2.22</td>
<td>1.13</td>
</tr>
<tr>
<td>Years lived in nhd.</td>
<td>37</td>
<td>5</td>
<td>0</td>
<td>5</td>
<td>3.51</td>
<td>1.64</td>
</tr>
</tbody>
</table>
As indicated in Tables 32 and 33, the independent variables had no significant effect on the dependent variables Acceptability and Accessibility, respectively.

| Table 32. ANOVA: Acceptability |
|------------------------|-----------------|-----------------|
| Sum of Squares | df | Mean Square | F | Sig. |
| Initiative | .109 | 1 | .109 | .641 | .433 |
| Storeprint | .023 | 1 | .023 | .134 | .718 |
| Ages | 2.993 | 18 | 1.66 | .959 | .602 |
| Sex | .095 | 1 | .095 | .555 | .465 |
| Race | .003 | 2 | .002 | .009 | .991 |
| Income | .563 | 4 | .141 | .849 | .516 |
| Education | .767 | 4 | .192 | 1.188 | .352 |
| Food Assistance | .008 | 1 | .008 | .047 | .831 |
| Neighbourhoods | .256 | 3 | .085 | .471 | .706 |
| Years live in nhd. | .606 | 4 | .152 | .886 | .493 |

Dependent variable: Acceptability. One-way, Between-Groups ANOVA.

| Table 33. ANOVA: Accessibility |
|------------------------|-----------------|-----------------|
| Sum of Squares | df | Mean Square | F | Sig. |
| Initiative | 1.398 | 1 | 1.398 | 4.941 | .095 |
| Storeprint | .132 | 1 | .132 | .258 | .615 |
| Ages | 13.845 | 28 | .494 | .936 | .594 |
| Sex | .005 | 1 | .005 | .609 | .925 |
| Race | .993 | 3 | .331 | .640 | .595 |
| Income | 2.265 | 5 | .453 | .949 | .466 |
| Education | 1.209 | 5 | .242 | .444 | .814 |
| Food Assistance | .074 | 1 | .074 | .144 | .707 |
| Neighbourhoods | 1.638 | 3 | .546 | 1.097 | .365 |
| Years live in nhd. | .789 | 4 | .197 | .365 | .832 |

Dependent variable: Accessibility. One-way, Between-Groups ANOVA.

In Table 34, there was a significant effect of the age in years of participants on the perception of accommodation at the p < .01 level for three conditions [F(3, 21) = 78.120, p = .002]. Post hoc analyses could not be performed because at least one of the groups had fewer than two cases. However, the Means Plot in Figure 33 shows that a 35-year old respondent reported the lowest perception of Accommodation, while a 68-year old respondent reported the highest. In general, there is a slight increase in the perception of store accommodation in older respondents. The Accommodation dimension is characterised by feelings about crime in the area, corner store hours of business, and store condition and amenities such as an automatic teller machine. Perhaps older participants live with younger relatives who do most of the shopping. Or older
respondents, who might be retired, tend to shop during the daytime when there is less crime and the store is usually opened.

Table 34. ANOVA: Accommodation

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiative</td>
<td>.276</td>
<td>1</td>
<td>.276</td>
<td>.581</td>
<td>.454</td>
</tr>
<tr>
<td>Storeprint</td>
<td>.207</td>
<td>1</td>
<td>.207</td>
<td>.434</td>
<td>.517</td>
</tr>
<tr>
<td>Ages</td>
<td><strong>11.160</strong></td>
<td>21</td>
<td><strong>.531</strong></td>
<td><strong>78.120</strong></td>
<td><strong>.002</strong></td>
</tr>
<tr>
<td>Sex</td>
<td>.774</td>
<td>1</td>
<td>.774</td>
<td>1.710</td>
<td>.204</td>
</tr>
<tr>
<td>Race</td>
<td>.060</td>
<td>2</td>
<td>.030</td>
<td>.060</td>
<td>.942</td>
</tr>
<tr>
<td>Income</td>
<td>1.247</td>
<td>4</td>
<td>.312</td>
<td>.576</td>
<td>.683</td>
</tr>
<tr>
<td>Education</td>
<td>1.665</td>
<td>4</td>
<td>.416</td>
<td>.875</td>
<td>.496</td>
</tr>
<tr>
<td>Food Assistance</td>
<td>1.690</td>
<td>1</td>
<td>1.690</td>
<td>4.095</td>
<td>.055</td>
</tr>
<tr>
<td>Neighbourhoods</td>
<td>2.076</td>
<td>3</td>
<td>.692</td>
<td>1.597</td>
<td>.220</td>
</tr>
<tr>
<td>Years live in nhd.</td>
<td>1.728</td>
<td>4</td>
<td>.432</td>
<td>.914</td>
<td>.475</td>
</tr>
</tbody>
</table>

** p < .01. Dependent variable: Accommodation. One-way, Between-Groups ANOVA.

Figure 33. Accommodation by Age.

Table 35 shows that the independent variables had no statistically significant effect on the dependent variable Affordability.
There were two independent variables that had significant effects on Availability. Being in one of the two study groups (initiative or comparison) significantly affected the perception of Availability of fruits and vegetables at the $p < .05$ level for the three conditions [$F(1, 29) = 4.411, p = .045$]. A Post hoc test could not be performed because there were fewer than three groups. The variable *initiative* is dichotomous.

The Means Plot in Figure 34 indicates that respondents’ perception of healthy food availability was higher if they lived in one of the two comparison neighbourhoods.
Figure 34. Availability by Initiative or Comparison group

The Availability dimension was also affected by case study Neighbourhoods. There was a significant effect of the neighbourhoods on the perception of availability of fruits and vegetables at the \( p < .01 \) level for the three conditions \([F(3, 27) = 4.862, p = .008]\). The means plot in Figure 35 shows that participants in Neighbourhood B have a conspicuously low perception of fruit and vegetable availability in their neighbourhood. This plot also shows however, that participants in Neighbourhoods C and D, the non-initiative areas, have a high perception of availability eclipsing that of Neighbourhood A in the initiative area.

Figure 35. Availability by Case Study Neighbourhood
I conducted Tukey’s HSD\textsuperscript{8} post hoc test to examine the interaction among the groups. The results in Table 37 revealed that there is an inverse relationship between Neighbourhood B and the three other neighbourhood groups. This was also observed in the means plot above. Further research is required to investigate this finding, although one interpretation is that residents’ conceptualisation of the boundaries of their neighbourhood plays a role in the perception of fresh produce availability. Broadway Avenue, a major thorough fair that divides the city into north and south, demarks the southern boundary of Neighbourhood B. It might be the case that these residents perceive greater access to other stores much farther away due to the connectivity or ‘openness’ that this major road provides.

Table 37. Tukey’s HSD Post Hoc Test

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>(I) Case Study Neighbourhoods</th>
<th>(J) Case Study Neighbourhoods</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability</td>
<td>Neighbourhood B</td>
<td>Neighbourhood A</td>
<td>*-.6829</td>
<td>.22655</td>
<td>.027</td>
<td>-1.30</td>
<td>-.0629</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Neighbourhood C</td>
<td>*-.7037</td>
<td>.23496</td>
<td>.028</td>
<td>-1.35</td>
<td>-.0607</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Neighbourhood D</td>
<td>*-.7275</td>
<td>.23496</td>
<td>.022</td>
<td>-1.37</td>
<td>-.0845</td>
</tr>
</tbody>
</table>

*p < .05

**Chapter Summary**

This chapter was divided into three parts. In Part One, I discussed Louisville and its significance as an appropriate site for this study. I then presented the qualitative results of the study in Part Two and quantitative analyses in Part Three. Qualitative data from seven semi-structured stakeholder interviews were transcribed and coded for analysis. Initially there were sixteen broad ideas that were condensed to five emergent themes. These themes are goals, food access, food justice, corner store challenges and relationships. Other qualitative data came from the researcher’s field notes and photographs of the neighbourhoods and corner store produce.

In Part III of this chapter, I presented quantitative data analyses and results. These data included sales report of produce data from a participating corner store, geospatial analysis of corner store locations and survey questionnaire results and analyses. Survey results revealed that the age of respondents significantly affected perceptions of Accommodation—older residents

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\textsuperscript{8} HSD stands for ‘honestly significant difference’.
expressed higher levels of accommodation. Secondly, the respondents’ neighbourhood of residence affected perception of produce availability. Respondents in the comparative neighbourhoods perceived higher availability than those living in the initiative neighbourhoods.

In the following chapter, I respond to the research questions and hypotheses, and discuss implications for food system policy and urban planning theory. I conclude with ideas on the costs and benefits of the initiative, study limitations, theoretical contributions, and opportunities for future research.
CHAPTER FIVE
SUMMARY, IMPLICATIONS, CONCLUSION

Summary

Public health scholars, geographers and urban planners have documented the existence and effects of urban and rural food insecure communities for the past two decades (Bedore, 2010; McEntee and Agyeman, 2010; A. Short et al., 2007; C. Smith and Morton, 2009). They have found strong connections between the food environment of families and observed health outcomes (K. Moore et al., 2013; Morland and Evenson, 2009; Raja et al., 2010). These health outcomes are asymmetrically distributed over space, and established and supported through socially produced constructs of class and race. To this end, the result has been, and paradoxically so, what many have called an ‘obesity epidemic’ in addition to increased rates of cardiovascular diseases such as high blood pressure and some cancers in low income neighbourhoods – primarily neighbourhoods of majority African American families (Kwate, 2008; Slocum, 2007; Zenk, Schulz, Israel, et al., 2005).

Through the work of community activists, scholars and the health care community, the general public now has an awareness of this phenomenon, and it is now registered on the public’s political agenda. Many cities nation-wide are collaborating with community partners, including urban planners, to develop or improve policies to address this issue (Hardesty, 2010; Pothukuchi, 2009; Wegener et al., 2012). However, while the symptoms are readily observed, the factors and complexity of interactions are less clear. Our initial notions were that families suffering from diet-related diseases were simply making poor food choices or lacked the will power to make healthy food choices (Eisenhauer, 2001; Guthman, 2011). Subsequent ideas were that low-income families did not know the right food to eat or how to prepare certain healthy foods – education was the problem and the solution. Since then, we have identified the residential neighbourhood environment as a critical component in health outcomes (Black and Macinko, 2008; Block et al., 2011; Stark et al., 2013). Consequently, our policy approaches have reflected these ideas. They featured educational programmes and supply-side plans to attract large grocery stores to underserved neighbourhoods. Although this perspective has some merit, it is limited in its understanding of household food procurement decisions and presumes
that physical access to healthy produce alone guarantees selection and consumption. Physical
access is necessary but not sufficient.

There are other, yet unidentified elements to be explored. Louisville’s approach was to
situate food access within the larger paradigm of social determinants of health (P. Smith et al.,
2011). This perspective casts access to healthy food as one strand in a collection of system-wide
infrastructure necessary to promote health. In addition, there is the recognition that the observed
health disparities resulted from structural inequalities in the provision, distribution and quality of
health-promoting services and amenities. In light of this, the Healthy in a Hurry Corner Store
initiative would not only physically connect families to affordable, healthy food, but also address
structural inequalities and food injustice.

Thus, these ideas energised the purpose of this study. Through this study I examined the
formation and implementation of the healthy corner store initiative, and explored expanded
theories of food access through the lived experiences of residents and stakeholders. As such this
study coalesced around three research questions (RQ):
RQ 1: How has the Healthy in a Hurry Corner Store initiative affected access to healthy food in
food insecure communities?
RQ 2: How has the Healthy in a Hurry Corner Store Initiative affected ‘perceived’ access? And,
RQ 3: What factor(s) most influenced residents’ perception of access?
Under the scope of these research questions I developed three sets of hypotheses that were tested
with quantitative data from the survey questionnaire. Data from the survey instrument was used
to test the following hypotheses:

\(H_0\): There is no difference in objective access (measured as ‘accessibility/location’,
‘affordability’ and ‘availability’) to healthy foods between the households in neighbourhoods
designated for the Healthy in a Hurry Corner Store initiative intervention and those of the control
neighbourhoods.

\(H_{1a}\): Residents in Case Study areas \(A\) and \(B\) will report higher perceived objective access
(accessibility, affordability and availability) scores to fresh fruits and vegetables than
residents in Case Study areas \(C\) and \(D\).

\(H_{1b}\): Residents in areas \(A\) and \(C\) will report higher perceived accessibility scores to healthy
food than those in areas \(B\) and \(D\).
There is no difference in perceived Acceptability and Accommodation to healthy foods between the households in neighbourhoods (A and B) designated for food the initiative intervention and those of the control neighbourhoods (C and D).

Residents in initiative neighbourhoods A and B will report higher scores of perceived Acceptability than residents in control neighbourhoods C and D.

Residents in neighbourhoods A and C will report higher scores of perceived Accommodation than residents in neighbourhoods B and D.

There is no difference in perceived access across the case study groups when socioeconomic factors, such as median household income, educational attainment and race are considered.

Households with median incomes $30,000 or more will report higher perceptions of Availability and Affordability than households earning less than $30,000.

Residents with some college education or higher will report higher perceptions of Acceptability and Availability than residents with no college experience.

White residents will report higher perceptions of Acceptability, Accessibility and Availability than Black residents.

Altogether, the research questions and hypotheses provided the substrate upon which I explored the ways the healthy corner store initiative affected objective and perceived access to healthful food and the factors that influenced residents’ perception of access. These are further discussed in the chapter sections that follow. In the Findings and Interpretation section immediately below, I respond to the research hypotheses with data from the results of the study. I also evaluate the initiative on its goal to increase healthy food access to 50,000 households. These findings and programme evaluation hold important implications for policy and planning theory that are discussed in the next two sections. Next I discuss the limitations of the study and proffer three research paths to guide future applied research in this area that would lead to contributions in theory and praxis. Lastly, I conclude with a synopsis of the work along with the Three Pillars of Access as a way forward.

**Findings and Interpretation**

I examined three sets of hypotheses to test the effects the healthy corner store initiative had on objective access, perceived access, and to identify factors that influenced perceived access. The ANOVA tests revealed that respondents’ perception of healthy food availability was
significantly affected by case study neighbourhood (‘neighbourhood’) and neighbourhood group (‘initiative’). And also, the age of the respondent - 65 years and older, significantly affected residents’ perception of healthy food accommodation – that is, store hours, produce display, neighbourhood crime, store safety, and the presence of automated teller machine. Other socioeconomic factors such as race, median household income and educational attainment were not statistically significant in affecting perceived access.

**Hypotheses.** I rejected the Null hypothesis ($H_0$) that there is no difference in objective access (accessibility/location, affordability and availability) to healthy foods between the households in neighbourhoods designated for the Healthy in a Hurry Corner Store initiative intervention and those of the control neighbourhoods. Analyses of the survey data found a statistically significant difference ($p < .01$) of the perception of Availability among neighbourhood as well as between initiative and comparison groups ($p < .05$) (see Table 36).

$H_{1a}$: Although the variables ‘initiative’ and ‘neighbourhood’ were significant for Availability they were not significant for Accessibility and Affordability. However, geospatial analysis of the location of healthy corner stores in relation to supermarkets and large grocery stores, revealed that accessibility (location) to healthy produce was improved in Neighbourhoods A and B. And sales of produce over the period of the initiative showed that residents were purchasing fruits and vegetables to the extent that the store was able to earn a small profit (see Table 9 and Figure 30 in Chapter Four).

$H_{1b}$: Analysis of Variance (ANOVA) test of accessibility and availability across the four neighbourhoods showed *no significant difference* among neighbourhoods on the ‘storeprint’ (neighbourhoods A and C) variable (Table 33). However, the geospatial analysis of food store locations revealed that objective access measured as store location on the Accessibility dimension was improved in Neighbourhood A as more household were in walking distance of a healthy food source (see Figures 31 and 32 in Chapter Four). This finding was corroborated by questionnaire results (see Appendix K) as respondents reported that transportation was not a problem for them in accessing healthy food (mean score of 4.16), and the mean Accessibility score of 3.65 suggested that travel times to the corner store was between 15-20 minutes. However, this was not significant as well.
$H_02$: Analysis of survey results revealed that participants’ perceptions of Acceptability and Accommodation were not significantly affected by their residence within the intervention (or initiative) area. I accept the Null Hypothesis.

$H_{2a}$: The variable ‘initiative’ was shown to have no significant effect on residents’ perceptions of Acceptability (Table 32).

$H_{2b}$: I found no statistical difference in the perception of Accommodation between groups in the half-mile ‘storeprint’ of a corner store and those that were not. Storeprint was not significant (Table 34).

$H_03$: Socioeconomic factors such as median household income, educational attainment and race had no significant effect on perceived access to healthy food.

$H_{3a}$: Median household income did not significantly affect perception of Availability and Affordability.

$H_{3b}$: Educational attainment did not significantly affect perceptions of Acceptability and Availability.

$H_{3c}$: Respondents’ race did not significantly affect perceptions of Acceptability, Accessibility and Availability.

The results to the third set of hypotheses, while they do not support much of the literature on deprivation and food access, do support a growing body of research that suggests that we examine other areas that affect perceived access (L. V. Moore et al., 2012; Sharkey and Horel, 2008; Sharkey et al., 2010). As the respondents’ age was found to significantly affect perceptions of Accommodation (see Table 34 and Figure 33), this research study extends our perspective and urges us to look broadly into other variables and employ new methodologies to gain a better understanding of food environments. Some research has shed light on the validity of self-reported measures of healthy food access as a method of food access assessment as utilised here that would improve programme design and evaluation (Freedman and Bell, 2009; L. V. Moore et al., 2012).

However, this study’s evaluation of this intervention relied strictly on geospatial and quantitative analyses of households within a specified Euclidean distance (a half mile) to corner stores. The following sub-section presents the evaluation of the healthy corner store initiative.

**Initiative Evaluation**
This study evaluated the impact of the healthy corner store initiative on its stated objective that was to increase (physical) access of healthy food to 50,000 households in initiative designated neighbourhoods. There were seven participating corner stores; six were located in the initiative designated area. (One participating store was located outside the initiative neighbourhoods in the Berrytown area in eastern Jefferson County.) This research explored the effectiveness of one store in the Shawnee neighbourhood. Questionnaire results showed that 54 per cent (7 of 13) of respondents in Neighbourhood A and 10 per cent (1 of 10) of respondents in Neighbourhood B (see Table 14 in Chapter Four) stated that they shopped at the nearby corner store. This suggested that the households most impacted by the corner store were those located within the half-mile store-print.

By that reasoning, I estimated that approximately 12,032 households were immediately impacted by the healthy corner store initiative. This is the sum of all the residential addresses within the half-mile buffer of all seven healthy corner stores across Jefferson County, Kentucky. (This included the households affected by the store in Berrytown.) However, the number of impacted households within the initiative designated neighbourhoods (West Louisville and East Downtown) is approximately 11,683. We must bear in mind, however, that this figure is an upper limit and does not account for the addresses that were vacant. Nor, does it consider that not all residents in occupied households shopped at the corner store; some residents may choose to shop at supermarkets much farther away or have alternative opportunities to acquire healthy food. With these considerations, I estimated that the true figure is less than 11,683, and further research is needed to determine a more precise number. As such, the results of this study suggest that the Healthy in a Hurry Corner Store Initiative did not meet its goal of increasing access to healthy food to 50,000 households in the initiative designated neighbourhoods. Yet, there is much to glean from this effort that could improve similar programmes in the future, as I describe in following sections on policy benefits and costs.

**Benefits:** The Healthy in a Hurry Corner Store initiative was an attempt at increasing access to healthy food to those with in neighbourhoods with little fresh produce options. Physical access was increased temporarily for families in food insecure neighbourhoods. The strategy of utilising corner stores was supported by academic literature that suggested that locational access may be improved by locating in dense urban neighbourhoods where large supermarkets are not (Gittelsohn et al., 2012; Gittelsohn, Song, et al., 2010; H.-J. Song et al.,
In this way they filled in the ‘grocer gaps’, and placed fresh fruits and vegetables within a 10-minute walk for many residents.

The initiative also brought benefits to storeowners and local growers. Storeowners were supported financially to carry fresh produce and to make store repairs. Small local growers gained a new buyer for their produce. And even after the initiative ended and financial support ended, the corner stores continued to carry healthy food options. One storeowner said that he continued selling produce because he felt it was the right thing to do. Beyond being mildly profitable, perhaps the initiative stimulated a sense of social responsibility among some storeowners.

**Costs:** Notwithstanding the benefits above, stakeholders felt that the costs were too much to bear. Stakeholders believed that the $7.9 Million was too much to invest in a short-term project that was not comprehensive in its approach and lacked supportive networks of complimentary food outlets to truly provide sustained access to healthy food. One stakeholder mentioned that a fleet of mobile farmers’ markets with low overhead costs would have provided a complimentary source of healthy food while more permanent projects were under development. In this way the funds would have been used in a manner that ‘sought long-term goals [increased access to healthy food] through short-term gains’. Funds were also lost to investments in corner store enhancements. In two cases, the storeowners sold the stores after enhancements were made. And although we know that physical access was improved for some families, 54 per cent (Appendix L) of families reported that they did not increase their purchase of fruits and vegetables as a result of the corner store.

In addition to supply-side interventions, investments could have been made in demand-side strategies that would address issues of structural unemployment within the initiative designated area. An example would be establishing business-friendly enterprise zones, or collaborative partnerships between educational and medical institutions (‘anchor institutions’) and the community that would offer living-wage jobs to neighbourhood families (Donald, 2008; Martinez et al., 2010). With the increased incomes, families would be able to purchase more healthy food or afford more reliable transportation to access supermarkets outside of their neighbourhoods. Ultimately, the biggest cost of the programme was the reinforcement of mistrust between neighbourhood families and stakeholders that continues to fester. Although there was some community involvement, this initiative suffered from insufficient community
support, and represented another programme that was transplanted from elsewhere and placed on residents without appropriate adjustments for community social dynamics (M. C. Campbell, 2004; Pothukuchi, 2009). Upon the dissolution of the initiative, both residents and stakeholders were frustrated by the lost opportunity in an effort that seemed promising. This created another barrier for future food access policies and possibly other planning projects as well. The greatest cost might be in future plans for neighbourhood and community development.

**Policy Implications**

This study of Metro Louisville’s Healthy in a Hurry Corner Store Initiative (HHCSI) revealed four areas of consideration for policy analysts, community stakeholders, practitioners and scholars. Future programmes should be comprehensive and sustainable with knowledge of potential areas of competition and collaboration. There should be clear programme goals that will enhance stakeholder support and buy-in, and established structural support for data collection, standardisation and store development. Lastly, this study revealed that the concept of access includes non-physical components as well. Future policies should be formulated around access that incorporates other methodologies such as self-reporting as well as quantitative methods to determine access.

Policies that address healthy food access must be sustainable in its outlook and comprehensive in its approach. A complete examination of the local food retail business would have provided for successful transitioning of the corner stores and integration with other community partners already in place. Instead, the participating corner stores struggled against competition from local growers and suppliers that produced and distributed locally grown produce to community residents and even to competing stores not participating in the programme. A local community garden sold its produce to the neighbourhood Pic Pac store because they offered better prices and were easier to work with than the healthy corner stores. Another local food non-profit organisation mobilised residents to pool their resources in a food-buying co-operative and delivered the produce to a designated location within the neighbourhood for residents to pick up. These alternative food sources were seen as providing better quality produce, more accessible and at comparable prices. In addition, finite financial resources (in the form of a one-time grant) guaranteed that the initiative was only short-term, and whereas storeowners might have been aware of this, residents, for whom the intervention was intended, believed the programme was long term.
Programme goals must be clearly described to community stakeholders and success operationalised. Although the goal was to increase access of healthful food to 50,000 households in the initiative neighbourhoods, the provenance of the produce was unclear to stakeholders. Some stakeholders understood that the fresh produce would be locally grown on small, family farms, while others were less concerned about the source of the food and more concerned about improving community health. This along with other stakeholder priorities of local and regional economic development, food justice and health equity were the sources of tension among community partners that strained relationships and weakened the policy’s effectiveness resulted in some stakeholders withdrawing their support.

The initiative suffered from a lack of standardisation among corner stores and structural deficiencies for store support and public participation. It was unclear to stakeholders what precisely the term ‘healthy corner store’ meant. One stakeholder added that simply selling fresh produce did not make the stores healthy when they continued to sell energy-dense, highly processed food, sugary drinks, cigarettes and alcohol. Some stores even sold drug paraphernalia. However, without an established standard definition, one stakeholder believed this contradiction further degraded branding and marketing of the programme as ‘healthy’ to families. In addition, the initiative was seen by some community organisations as a heavy-handed, top-down approach to a neighbourhood issue, and felt there was a disconnection between the policy planners and the communities it intended to help. There was insufficient relationship building through community organising that led to a policy that addressed an issue that was poorly understood with loosely defined and disparate goals. Not only were families marginalised, so too were the corner stores.

Although mentioned during its advertisements, the formation of a corner store network for store support did not materialise. Owners were generally left on their own to procure fruits and vegetables and set prices. Often, due to limited staff available to select fresh food from wholesalers, the produce they [storeowners] received were not of the best quality or reasonably priced. In addition, many of the storeowners were not trained on handling, stocking and presenting fresh produce. Produce did not appear appealing. Since the small stores were unable to purchase produce in the volumes that would fetch deep discounts from producers and wholesalers, fruits and vegetables were marked up significantly – as much as 80 cents in one store, relative to large, regional grocery stores. The lack of continued assistance to storeowners,
data for proper evaluation, standardisation and the eventual expiration of the programme meant that funds were invested to initiate a programme where there were no clear plans for its longevity. The result was that store patrons saw wilted, partially rotten and highly priced food on display in the stores.

The corner store programme suffered tremendously from a lack of established regulations to ensure food quality, affordability and to monitor store operations. The intervention was weakened by reports of criminal activity and high storeowner turnover rates. There were unconfirmed reports of price gouging by owners towards the end of the month when they knew residents would receive governmental food support. In addition, there was a case of ‘food stamp’ fraud against one storeowner. In other cases, the healthy corner store initiative did not consider the high turnover rate of store ownership within the corner store industry. The YMCA would enter into a contract of participation with one owner, make improvements to the store, only to have that owner sell shortly thereafter. The new owner, who was unaware of the pre-existing contract, had to be approached by the YMCA and asked to continue the contract. These signalled that programme managers were not familiar with the corner store business model or the challenges and opportunities of cross-cultural marketing (State, 2009).

Finally, this project demonstrated the need for other methodologies of assessing neighbourhood food access and deprivation. Whereas this initiative focused on improving physical access alone, the results show that residents’ perception of availability and accommodation were as significant as store location. Thus, the programme’s effectiveness could have been improved if these components of access were considered. These policy implications are instructive for practitioners and scholars alike and are effective in informing our ideas on planning for local food systems.

**Theoretical Implications**

As planners, our approaches to complex social issues such as increasing access to healthy food for urban communities, depends on our ‘thought pathways’ and ways of learning about our social world (Healey, 2003). Our actions reflect our thoughts; hence the first and most important step is to have the right ideas about the issues. In the introductory chapter I grounded this work in critical theory for urban planning that is based on the work of German philosopher, Jürgen Habermas (Forester, 1980). Habermas’ theory of communicative action and communicative ethics recognises that our ways of thinking are socially constructed and that these multiple paths
can be valued through communication and debate so that we may ‘make sense together’ of concerns in our environment. In our increasingly diverse societies, the communicative action theory recognises three reasoning paths within which we engage, instrumental-technical, moral and emotive-aesthetic reasoning (Habermas, 1981; Healey, 2003, 2006).

Instrumental-technical reasoning, as displayed by planners and other technical professionals is characterised by rational, linear, positivistic reasoning that connects evidence to conclusions and means to ends. Moral reasoning which describes thought around values and ethics, is associated with attitudes and feelings – emotional experiences (Healey, 2006). Habermas argued that society has privileged instrument-technical reasoning at the expense of the others that has extricated public policy from the daily, practical lives of people, and has made it difficult for meaningful problem-solving dialogues to occur. Instead, an alternative view is Habermas’ concept of intersubjective consciousness that we understand our physical or material world through social perceptions and moral and emotive feelings. This being so, we cannot resolve public challenges by utilising one mode of reasoning alone. As such we must construct methods of validating claims through debate. The process of planning then becomes a medium within which we can have these broader community interactions and debates.

Anthony Giddens’ theory of ‘structuation’, the dualism of ‘structure and agency’, is a useful compliment to Habermas’ theory. Our sense of self, social norms and principles are constructed through interactions with each other and our material world over time. These collective histories bear implicit and explicit principles of action, resource distribution and power relations. This becomes the structure that is shaped by and which shapes individual (or agent) actions and perceptions. Planning regulations are an example of this structure. However, planners although imbued with structural power, also have the choice to change these power dynamics through their individual actions by respecting all forms of reasoning and types of knowledge.

From the study of the Healthy in a Hurry Corner Store initiative we learned how the material world - a collection of financial, economic, political and social policies approved and implemented by individuals, affected the perception of access among families now occupying the case study neighbourhoods. We also learned of the ways in which individuals act to create new structures by traveling outside of their immediate environs to access healthy food. Or at times, purchasing energy-dense food from convenience stores or fast-food restaurants. All these
lived experiences should be heard and respected if planners are to gain a full understanding of the local food environment and residents’ food-buying decisions if we are to work for the safety and wellbeing of all citizens. We express this practically by employing multiple research methodologies including self-reporting by neighbourhood residents of their ideas of access. We should query all data types and analyse for completeness, credibility and context (Creswell and Plano Clark, 2011). The continued work of planning practitioners and academics should include multiple groups, data sources and types and in so doing, continue to reframe relations among community stakeholders, families and local businesses to make new and just structures around healthy food.

**Further Research**

The research findings and theoretical framework provided rich backing for further exploration of policies that seek to improve healthy food access in communities. We have learned from this study that access goes beyond the objective/physical dimensions to include perceptions and emotive; as such, I have described three research paths to guide future studies on neighbourhood corner stores as purveyors of healthy food:

- **Research Path 1**: Ideas of food access are affected by our subconscious self-identification with racial and socio-economic class categories.

- **Research Path 2**: Relationships, whether among residents, corner stores, stakeholders with various food agendas, non-governmental and governmental agencies and community activists, are the building blocks of food access.

- **Research Path 3**: The perception of access to healthy food is affected by family structure and dynamics.

Research related to the first path would explore the notion of access as a function of our perceived location in a particular racial and socio-economic group. Lower-income residents may perceive food prices in a large grocery store in their neighbourhood as being too expensive or unaffordable; however, they may perceive a similar grocery store with comparable prices for the same goods located in another neighbourhood with more resources as affordable. Furthermore, Guthman (2008b) discussed how colour blindness and universal ideas of what is ‘good food’ in the alternative food movement (farmers’ markets and community supported agriculture

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9 I attended an American Planning Association conference in Gary, Indiana in 2007 where we were taken on a tour of an abandoned grocery store site. The store, still appearing new, failed within a year partly due to the fact that residents claimed the goods were unaffordable and preferred to travel miles away to shop at similar stores in the suburb of Merrillville, Indiana.
programmes) have alienated African Americans by creating ‘white spaces’, albeit, unbeknownst to Whites who consider themselves to be progressive anti-racists and believe they are doing good for others (Guthman, 2008a). Is this phenomenon also occurring in this scenario with corner stores? There is great potential in this question.

The second research path would stimulate research efforts on the relationships among policy planners, local food activists, corner stores and families on healthy food access. Formalised neighbourhood-level policies would be greatly improved through better understanding of the role governments can play in multi-sectoral stakeholder plans to facilitate greater access to affordable and healthful food (Hardesty, 2010; Wegener et al., 2012). Studies in this vein would explore the governments’ role in ‘issue framing’, ‘visioning’, ‘legitimacy’, ‘agenda aligning’, ‘knowledge transfer’, as well as fostering civic inclusiveness around a new food culture (Hill, 2011; Wegener et al., 2012).

This idea of relationship building was reported by a stakeholder who stated that, ‘corner stores are relationship-centric’\textsuperscript{10}. As such there are two types of relationships to consider: that among corner stores and between corner stores and their communities – both correlate with the development of social capital and community cohesion (Putnam, 1995). This research calls for more work that explores the formation of networks and cooperatives to assist corner stores in having long-term success economically and socially with its community. Secondly, cultural influences and multi-cultural relationships are critical to understanding how perceptions of access are formed. Often the storeowners are not of the same race or ethnicity as the residents of the communities they serve – from my study, six of seven storeowners are of Middle-eastern descent in majority African American neighbourhoods (Nutrition, 2013; H.-J. Song et al., 2011). There have been reports of racial epithets being used by storeowners in referring to customers. This impacts access by affecting the perception of acceptability – customers do not feel welcomed in the store. But it also affects affordability, as storeowners are less likely to extend informal lines of credit (through trust) to customers to purchase food (Jacobs, 1961). This puts healthy food further out of the reach of residents. Research that explores corner stores as ‘third places’ in the community may present new methods of approach.

Relatedly, research should focus on the corner store retail business (Montgomery et al., 2009; State, 2009). The high turnover rate of store ownership speaks to the difficulty of

\textsuperscript{10} Statement made by stakeholder during the interview.
managing a successful store; this makes implementing healthy food policies challenging as contracts with policy agencies often have to be re-negotiated with new owners. In addition, plagued with small profit margins, corner stores are incentivised to cut costs on wages by ‘employing’ their children and other family members (Nutrition, 2013; Pitts et al., 2013). While this cuts short-run costs, overall productivity falls since time spent by the owner on performing day-to-day store activities takes time away from pursuing new opportunities for sales (Dannefer et al., 2012; H.-J. Song et al., 2011). In this study, it was difficult for some storeowners to seek out affordable producers and select high quality produce to sell in the stores.

The third research path would generate studies that address the influence of family dynamics and structure on attitudes about healthy food and access. Studies should be conducted on the perception of access among different family types. What are the perceptions among families with young couples just starting a family and those of older parents with teen children? We might also consider households with extended family members – how do families, with grandparents, for example, procure healthy food and what are their perceptions of access in their neighbourhoods? Extended family households may hold significantly different perceptions from single-parent households due to life conditions. A study that would hold significant promise would ask a selected group of participants to draw cognitive maps of their food environment and compare these to show how they perceived access varies by family structure. This may hold important policy implications. As success or failure of policies rests on understanding the community’s unique needs, resources and challenges, policies would then be tailored to the situations of the particular community. Relatedly, additional studies should explore the perceptions of food access held by different age groups as suggested by the findings of this study. Perhaps seniors (ages 60 years and older) hold significantly different perceptions than young adults - those 21 to 35 years of age, for example. Understanding these dynamics would greater improve policy implementation and success.

Other areas for critical research lie in the hypotheses put forward in this study. Continued evaluation of corner store interventions is needed; in particular, there needs to be more studies conducted on the development of strategies (quantitative or qualitative) and measurements (self-reporting or researcher analysis of community health data) appropriate to evaluate corner stores. With little consensus on evaluative approach, it becomes difficult to derive meaningful comparisons of initiatives across regions. Relatedly, more research is needed
on corner stores in rural settings. How effective have these stores been in improving access in rural communities and why? Whether urban or rural, we do not fully understand how effective these interventions are in changing residents’ attitudes and behaviour about purchasing healthy food. That is, more scholarly work is needed on the topic of perceived access and factors that might affect it.

A final area of research would address the issue of healthful food as community economic development policies to reverse diet-related health issues often observed in low income, low access communities (Morales, 2009; Pothukuchi, 2005). Municipalities are exploring local healthy food policies as a boon for local community and economic development. However, as is suggested throughout this study, the extant economic development model may not be sufficient or is out dated. Research into diverse and alternative economic models is relevant (Bendfeldt et al., 2011; Dixon, 1999). These alternative economies around local food would be place-based ‘community economies’ (Gibson-Graham, 2006; Hill, 2011) that are small scale, community controlled, culturally distinctive, cooperative, and values long-term investments over short bursts of financial outlays (Foundation, n.d.; Gibson-Graham, 2006).

**Study Challenges and Limitations**

The study was beset by challenges of limited time and material resources. My analyses of quantitative data showed that there were other relationships that might have been found significant had I had a larger sample. However, due to material constraints, I was unable to conduct recruitment of participants with an introductory letter weeks in advance, offer a token for participating, or follow-up with residents who were interested in participating but unable at that time. Preparing a package to be mailed to neighbourhood addresses would also have increased the sample size.

Time and resources affected qualitative data gathering as well. Deep socio-cultural research requires time for the researcher to develop relationships and build trust within the community (Creswell, 2013; Silverman and Marvasti, 2008; Teddlie and Tashakkori, 2009). This would improve the quantity and quality of responses from participants and enhance our understanding of their lived experiences and food-buying decisions. Methodologically, the study suffered from the lack of a pre-test that would have measure perceived and physical access prior to the initiative. A pre-test and post-test in conjunction with a longitudinal study of neighbourhood cohorts would produce compelling findings about the effectiveness of the
initiative in reducing BMI (body mass index) of participants, thereby answering the question whether the initiative had indeed bridge the gap between healthy food availability and desired health outcomes.

Lastly, the study was affected by the survey instrument. The instrument suffered from the lack of cohesion among some items that a pilot test would have been effective in improving. These challenges, however, also presented opportunities for scholars to re-use what worked and improve upon the limitations in future research.

**Conclusion**

In conclusion, the purpose of this study was to expand our understanding of access and to evaluate the Healthy in a Hurry Corner Store initiative on the measures of perceived and objective access to healthy food. I used a mixed-methods, quasi-experimental design of four neighbourhoods to determine residents’ perception of access on five dimensions, acceptability, accessibility, accommodation, affordability and availability. In response to the first research question, the Healthy in a Hurry Corner Store Initiative had positively affected physical access in the initiative area. That is, locating fruits and vegetables in corner stores that are geographically located in areas not serviced by large grocery stores or chain supermarkets have increased accessibility and availability of healthy food. This finding was evidenced by the profitable sales record of the corner store that demonstrated a) demand for healthy produce, b) that families are able to locate and procure produce, and c) through geospatial analysis showing that the corner stores are located in ‘grocer gaps’ away from the immediate service areas of supermarkets and large grocery stores. This increase in physical access was temporary, however, and suggests that access should have a temporal dimension as well.

The second research question asked how has the Healthy in a Hurry Corner Store initiative affected ‘perceived’ access to healthy food? The results of the survey questionnaire indicated that participants’ perception of availability was positively affected for all groups except participants in Neighbourhood B for whom perception of availability was the lowest. In addition, older participants, those 65 years or older, showed increased perception of accommodation when compared to younger participants (Wilson et al., 2004). In light of this, public decision makers and planners should address access as it pertains to different age cohorts and concomitant needs in those life stages.
And third, the factors most influential to residents’ perception of access were the age of the participant, respondents’ neighbourhood of residence and community-corner store relationships. The corner store that hired neighbourhood residents either part-time or full-time showed prolonged and profitable sales of fruits and vegetables (Nutrition, 2013; H.-J. Song et al., 2011). These ideas informed my overarching summation of our approach to increasing access to healthful foods in low-income, low-access communities.

The prevailing analysis that resulted from this project is that when undertaking a public policy of food access through corner store interventions, municipal governments should consider Objectivity, Perception and Temporality as the three pillars in improving healthy food access. In Chapter Two earlier, I defined access as a construction comprised of a set of aggregated ‘strands’ of environmental factors – some may be cultural, economic or political, that influences families’ ability to acquire and benefit from healthy food. These aggregated strands and their relationship to access are illustrated in the Three Pillars of Access in Figure 36 below.

![Figure 36. The Three Pillars of Access](image)

Objective access (characterised by Objectivity) describes components of location, affordability and availability of fresh food. We understand from the findings of this study and others that fresh fruits and vegetables must be affordable, available and located in neighbourhoods in areas that meet the transportation resources of residents – that is, there must be an objective ‘fit’ where physical infrastructure must occupy critical spaces for enhanced access (D. R. Block and Kouba, 2007; Bodor et al., 2008). However, though essential and possibly the easiest of the three components to institute, physical access alone is necessary but not sufficient for complete access.
Geographical location of corner stores, farmers’ markets, supermarkets and other food outlets is important not only for physical access but also for perceived access (Perception) as our perceptions are shaped by our interpretation of the messages we receive from the material world (Bandura, 1986, 2001; Gittelsohn et al., 2006). Stores that are located in unsafe areas have low quality produce, or unwelcoming workers reinforce the idea that this is not a place to shop for food. Residents’ perceptions of access are the critical factor (Caspi et al., 2012; Freedman and Bell, 2009; L. V. Moore et al., 2012; Sharkey et al., 2010). Individual perceptions and food-buying decisions are influenced by the intense power of complex social structures involving cultural, economic and political forces (Alkon et al., 2013; Pearce, et al., 2008). This is an important finding as these social structures are not inert or static; they are constantly in play with each other, and this interplay affect the living conditions of residents and the quality and duration of access in neighbourhoods.

Access must account for the effects of these dynamic changes, and speak to an on-going condition and not one that is temporary or episodic. Therefore, time (Temporality), which has been missing from previous conceptualisations, must be considered a component of access. To say that neighbourhood residents have access to fresh produce during the Summer time only, for instance, is to say that they have limited access at best – a characteristic of food insecurity (Coleman-Jensen et al., 2012; Tarasuk, 2001). This temporal component is predicated on inter- and intra-community relationships among neighbourhood residents, corner stores and wider community stakeholders. These relationships not only bring resources to bear on the problem to improve programme longevity, but they also provide the supportive interstitial glue to enable residents to access healthy food when resources are limited (Edwards et al., 2001; Jacobs, 1961; H.-J. Song et al., 2011). In this way, relationships also affect objective and perceived access.

Lastly, I suggest that critical planning theory’s ‘communicative’ approach is a transformative tool for urban planners to utilise in building genuine relationships, community participation and trust among stakeholder (Habermas, 1981; Healey, 2007). It is suggested that this theoretical lens would enhance perceived access by building community cohesion and social capital (Beil et al., n.d.; Morales, 2009), as it is understood that to the extent that the individual has material resources to engage in spheres outside his/her immediate neighbourhood, their perception of access is increased (Pearce, Day, et al., 2008; D. M. Smith et al., 2010; Wrigley et al., 2003).
Lest we forget, access is our penultimate goal. Our goal is to reduce diet-related illnesses we have observed in a particular segment of our population over time. And this portion of the journey should be taken up by further studies; however, thinking of healthy food access as being comprised of three pillars - Objectivity, Perception and Temporality, points us in the right direction.
APPENDIX A

DEFINITION OF TERMS

*Formalised, targeted Food Policy Initiatives:* By ‘formalised’ I mean those food initiatives that have been legally sanctioned by a vote by the members of the Metro Council and are encoded in the Land Development Code. ‘Formalised’ also refers to Federally funded projects for healthy food access and health equity (http://www.louisvilleky.gov/Health/PuttingPreventiontoWork/). Targeted food initiatives are those that have been implemented in and intended to bring about an effect in specifically identified communities.

*Healthy Food:* This study uses the term ‘healthy food’ to mean, whole foods such as fruits, vegetables, whole grains, fat-free or low-fat dairy, and lean meats that are perishable (fresh, refrigerated, or frozen) or canned as well as nutrient-dense foods and beverages. Retrieved from http://healthyfoodaccess.org/get-started/glossary - taxonomy-term-466.

*Food Swamp:* Neighbourhoods in which it is easier for residents to access – in terms of physical location and price, less healthy foods (for example, sugary, energy-dense or fast-food) when compared to access to healthy foods (Fielding and Simon, 2011).

*Food Environment:* The ‘food environment’ refers to the many dimensions that affect the quantity, quality and accessibility of food in a community. It explores who, what, where and how food is made available in a community. See http://blogs.usda.gov/2012/07/06/what-can-the-food-environment-atlas-tell-you/#more-40974.

*Urban Food Desert:* For the purposes of this study the term ‘food desert’ refers to ‘urban food desert’ only and not ‘rural’ food desert. In general terms, Urban Food Deserts are urban residential areas that are economically deprived and have limited access to healthy, affordable and culturally appropriate food. More specifically, I use the Federal Government’s definition of food desert located at http://www.ers.usda.gov/data-products/food-access-research-atlas/documentation.aspx -.

The United States Department of Agriculture defines an urban food desert as a low-income census tract where significant share of its residents has low access to a supermarket or large grocery store. ‘Low-income’ is defined by the Treasury Department’s New Markets Tax

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Credit (NMTC) as any census tract where (1) the poverty rate for that tract is at least 20 per cent, or (2) for tracts located within a metropolitan area, the median family income for the tract does not exceed 80 per cent of the greater of state-wide median family income or the metropolitan area median family income. ‘Low-access’ is defined as an urban census tract wherein at least 500 residents or 33 per cent of the tract population are more than 1 mile away from a supermarket or large grocery store.

NOTE: This definition is based solely on straight-line distances from the centre of a census tract and do not include private vehicle availability. It also does not consider other forms of healthy food providers such as farmers’ market, food trucks, community and private food gardens or corner stores.

_Urbanised Area:_ ‘Urban’ in this study should be taken to mean ‘urbanised area’ as defined by the U.S. Census Bureau: An urbanized area consists of densely developed territory that contains 50,000 or more people. (http://www.census.gov/geo/reference/gtc/gtc_urbanrural.html - ua).


_Supermarkets_ (pp. 13, 59) are defined as a full-line, self-service grocery store with an annual sales volume of $2 million or more. This definition applies to individual stores regardless of total company size or sales and therefore includes both chain and independent locations. Examples: Kroger, Food Lion, IGA, Cub Foods.

_Superette/Small Grocery_ (pp. 13, 59) It defines a small grocery store as a grocery store with a sales volume ranging from $1 to $2 million annually. Typically, superettes are independent, but many are affiliated with groups such as IGA, Inc. A “small grocery” is defined as a grocery store with sales below $1 million annually. These are also known as ‘Mom & Pop’ stores, for example, Country Market and Superior Markets.

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APPENDIX B

HUMAN SUBJECTS COMMITTEE APPROVAL MEMORANDUM

Office of the Vice President for Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673 • FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 11/22/2013

To: Kareem Usher

Dept.: URBAN AND REGIONAL PLANNING

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research
Exploring the effects of formalised, targeted municipal food planning initiatives on access to healthy food.

The application that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Secretary, the Chair, and two members of the Human Subjects Committee. Your project is determined to be Expedited per 45 CFR § 46.110(7) and has been approved by an expedited review process.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 11/21/2014 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report, in writing any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is IRB00000446.

Cc: Timothy Chapin, Advisor
HSC No. 2013.11566
APPENDIX C

HUMAN SUBJECTS COMMITTEE RE-APPROVAL MEMORANDUM

The Florida State University
Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673 · FAX (850) 644-4392

RE-APPROVAL MEMORANDUM

Date: 10/7/2014

To: Kareem Usher

Dept.: URBAN AND REGIONAL PLANNING

From: Thomas L. Jacobson, Chair

Re: Re-approval of Use of Human subjects in Research
Exploring the effects of formalised, targeted municipal food planning initiatives on access to healthy food.

Your request to continue the research project listed above involving human subjects has been approved by the Human Subjects Committee. If your project has not been completed by 10/6/2015, you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the committee.

If you submitted a proposed consent form with your renewal request, the approved stamped consent form is attached to this re-approval notice. Only the stamped version of the consent form may be used in recruiting of research subjects. You are reminded that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report in writing, any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor are reminded of their responsibility for being informed concerning research projects involving human subjects in their department. They are advised to review the protocols as often as necessary to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

Cc: Timothy Chapin, Advisor
HSC No. 2014.13782
APPENDIX D

STATEMENT OF CONSENT: STAKEHOLDER INTERVIEWS

Statement of Request for Consent

You are invited to be in a research study that addresses the impacts of the local food initiatives on residents’ access to healthy food in designated neighborhoods. You were selected as a possible participant because as a community stakeholder you were either involved in the formulation of these policies or are affected by them. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by Kareem M. Usher, a doctoral candidate in the Department of Urban and Regional Planning at The Florida State University.

Background Information:

The purpose of this study is to explore the physical and perceived effects of the city’s strategies to improve healthy food access in designated neighborhoods.

Procedures:

If you agree to be in this study, you would be asked for your one-time participation in a semi-structured interview about the city’s Healthy in a Hurry Corner Store Initiative. This interview will take approximately 45 minutes (no more than 60 minutes) to complete. I will use a password-protected audio-recording device and handwritten notes (kept in a secure field journal) to save the information for further analysis by myself alone.

Risks and benefits of being in the Study:

There are no known risks associated with participating in this study.

There are no immediate or direct personal benefits associated with participating in this study. Information gained from this study will help policy planners, public officials, business owners, residents and other stakeholders gain a complete understanding of the immediate and more far-reaching effects of food access strategies such as these.

Confidentiality:

The records of this study will be kept private and confidential to the extent permitted by law. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject; however, participants are cautioned to exercise discretion when revealing information. Research records will be stored securely and only researchers will have access to the records. Additionally, participants are warned not to reveal any confidential information about third parties. The results of this study may be published, but your identity, organization or your position will not be revealed in the findings. The contents of this interview will be saved using a password-protected audio-recording device.
Audio files created from the interview will be downloaded and stored as .mp3 files on the primary investigator’s password-protected personal computer. Additionally, the information will be transcribed and stored via an encrypted PDF file saved on the primary investigator’s password-protected personal computer. This information will be saved for a maximum of three (3) years, allowing for any additional research on the subject to be completed. After which it will be securely erased.

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the university. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

Contacts and Questions:

The researcher conducting this study is Kareem Usher. You may ask any question you have now. If you have a question later, you are encouraged to contact him via email or phone. Alternatively, you may contact Professor Timothy Chapin (Committee Chairperson) via email or phone.

If you have any questions about your rights as a participant in this research, or if you feel you have been placed at risk, and/or if you would like to speak to someone other than the researcher, you are encouraged to contact the Florida State University Institutional Review Board by phone: 850-644-7900, e-mail: humansubjects@magnet.fsu.edu or mailing address: 2010 Levy Street, Research Building B, Suite 276, Tallahassee, FL 32306-2742.

You will be given a copy of this information to keep for your records.

Statement of Consent:

I have read the above information. If applicable, I have asked questions and have received answers. I consent to participate in the study.

________________  _________________
Signature                                          Date

________________  _________________
Signature of Investigator                    Date
APPENDIX E

STAKEHOLDER INTERVIEW PROTOCOL

These are guiding questions that will be modified according to the flow and progression of the interview. These interview are planned for duration of between 30 minutes and 1 hour and a half depending on level of feedback and conversation from the interviewee.

LMPHW, YMCA, Metro Council Rep., NGO

- Why and how did these initiatives come about?
- What happens after the funding expires?
- What are some costs and benefits of the programme?
- What happens if the initiative achieves its goals?
- Why these neighbourhoods? What criteria were used to select them?
- Were the initiatives applied evenly in all Initiative Designated Neighbourhoods (IDN)? Why?
- Why not?
- How do you define success?

Healthy in a Hurry Corner Store

- Why did you decide to participate in the Healthy in a Hurry programme?
- Did you sell fresh produce before this initiative? If not, why?
- Has residents been purchasing fresh produce from your store? Can you show me the sales receipts for fresh produce sold at your store?
- Have you been able to make a profit from your fresh produce sales?
- Are you able to competitively price your fresh produce?
- Have you been able to make a profit from your fresh produce sales?
- Are you able to competitively price your fresh produce?
APPENDIX F

STATEMENT OF CONSENT: NEIGHBOURHOOD SURVEY INSTRUMENT

Dear Madam/Sir,

I am a researcher in the Department of Urban and Regional Planning at The Florida State University and have lived in Louisville for over ten years. I am writing to ask your help with my study to determine how the Healthy in a Hurry Corner Store initiative has affected attitudes toward access to healthy food in your neighborhood. This study will improve our understanding of how we provide healthy food to neighborhoods in Metro Louisville and other cities.

Your participation in this study is voluntary. The questionnaire is confidential, and your information will be protected to the extent allowed by law. There are no known risks associated with participation in this study. The results of the study may be published but neither your name nor individual answers will be known. Only the researcher (Kareem Usher) and research advisor (Dr. Timothy Chapin) are permitted to review responses. If you decide to participate, you are free not to answer any question or withdraw at any time.

As a resident of Jefferson County, you were randomly selected to participate in this study. If you agree to participate in this study and you are 18 years of age or older, you will be asked to complete this short survey questionnaire that will take approximately 5 to 10 minutes to complete.

Even if you are unfamiliar with the Healthy in a Hurry Corner Store initiative, your feedback will still be helpful. If you are under 18 years of age, please do not complete this survey.

If you have any questions regarding this research study, please contact Kareem Usher (Project Director) by email or phone. Alternatively, you may contact Dr. Timothy Chapin (Faculty Advisor) via email and phone. If you have any questions about your rights as a participant in this research, or if you feel you have been placed at risk, please contact the chair of the Human Subjects Committee, Institutional Review Board, through the Vice President for the Office of Research at (850) 644-8673 or mailing address: Florida State University Human Subjects Committee 2010 Levy Street, Research Building B, Suite 276, Tallahassee, Florida 32306-2742.

Thank you for your assistance.

Participant Signature: _______________________________________________________

Date: ______________________
APPENDIX G
HEALTHY IN A HURRY CORNER STORE SURVEY INSTRUMENT

HEALTHY IN A HURRY CORNER STORE SURVEY, 2014

Thank you for agreeing to take this survey. Using your honest assessment, please respond to the following statements. Mark ONE box per statement.

1. I have lived in this neighborhood for

<table>
<thead>
<tr>
<th>Less than 1 year</th>
<th>1 – 3 years</th>
<th>4 – 6 years</th>
<th>7 – 10 years</th>
<th>10 or more years</th>
</tr>
</thead>
</table>

2. Before the healthy corner store initiative began in 2009, where did you get fresh fruits and vegetables?

- Supermarket
- Gas station
- Convenient store
- Farmers’ Market
- Community Garden
- Personal Garden
- Community Supported Agriculture
- Other

If Other, please tell us where___________________________________________________.

ACCEPTABILITY: For the next five (5) statements, please tell us about the store workers and the fruits and vegetables in the store.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Unsure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

3. I am greeted by store workers when I enter the store.

4. Store workers help me find items in the store.

5. I have heard a store worker use a negative racial word about a customer.

6. The fruits and vegetables in the store are bruised or wilted.

7. The fruits and vegetables in the store showed signs of rot.

ACCESSIBILITY/LOCATION: Help us to understand where fruits and vegetables are located in your neighborhood and how you travel to the store.

<table>
<thead>
<tr>
<th>Walk</th>
<th>Bicycle</th>
<th>The Bus (TARC)</th>
<th>My personal motor vehicle</th>
<th>Family/Friend motor vehicle</th>
</tr>
</thead>
</table>

8. When you go to the corner store, what mode of transportation do you use?

Page 1 - Please continue to Page 2
Thank you for agreeing to take this survey. Using your honest assessment, please respond to the following statements. Mark ONE box per statement.

### ACCOMMODATION: For the next section, tell us about the store hours, payment methods and the arrangement of fruits and vegetables in the store.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Unsure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Based on your answer to Item 8, how long does it take you to travel to the corner store?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. I do most of my food shopping within my neighborhood.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Transportation problems make eating healthy hard for me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. The fruits and vegetables are displayed where I can see them as I enter the store.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. The store is open when I go to buy fruits and vegetables.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Crime in my neighborhood makes it hard for me to get fresh fruits and vegetables.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. The store provides check-cashing services.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. The store has an Automated Teller Machine (ATM).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. I do not like how the store smells.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. I feel safe shopping at the corner store.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### AFFORDABILITY: We are interested in your opinion on the affordability of fruits and vegetables in your neighborhood.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Unsure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>19. The corner store accepts EBT cards (‘food stamps’) to buy fruits and vegetables.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. I can afford to buy the fresh fruits and vegetables at the corner store.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. The cost of fruits and vegetables is higher in my neighborhood than in other areas.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Cost makes healthy eating hard for me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. The fruits and vegetables at the corner store cost the same as they do in other stores.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### AVAILABILITY: Can you tell us your opinions on the availability of fruits and vegetables in your neighborhood?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Unsure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>24. Fruits and vegetables are available in my neighborhood.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. Fruits and vegetables are available all year round at the corner store.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. The corner store in my neighborhood sells fruits and vegetables.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. The corner store has the types of fruits and vegetables that I want to buy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. When I go to purchase fruits and vegetables from the corner store, there is enough for me to buy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. I buy more fruits and vegetables now than I did before the corner store started stocking fruits and vegetables.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Page 2 - Please continue to Page 3
Thank you for agreeing to take this survey. Using your honest assessment, please respond to the following items.

30. What is your gender?
- Male
- Female
- I do not wish to answer this question

31. What is your age?

32. With which racial group do you identify?
- White
- Black of African American
- Asian
- Native Hawaiian or other Pacific Islander
- Other race
- Biracial or Multiracial
- I do not wish to answer this question

33. Are you of Hispanic, Latino or Spanish origin?
- Yes
- No
- I wish to decline this question

34. The combined incomes within your household falls within which range.
- $0-14,999
- $15,000-29,999
- $30,000-49,999
- $50,000-74,999
- $75,000-99,999
- $100,000-249,999
- $250,000 and above
- I do not wish to answer this question

35. What is your highest level of completed formal education?
- Less than high school graduate or equivalent
- High school graduate or equivalent
- Some college – no degree
- Associate's degree
- Bachelor’s degree
- Master’s degree
- Professional degree (e.g., JD, MD, MBA)
- Doctoral degree
- I do not wish to answer this question.

36. Do you receive benefits through SNAP or WIC?
- Yes
- No
- I do not wish to answer this question.

37. The number of adults in your household is?

38. The number of children under 18 years in your household is?

Please tell us about your experience buying fruits and vegetables at the corner store in your neighborhood. You may also send your comments to me by email at kmusher@fsu.edu.
APPENDIX H

NEIGHBOURHOOD TYPOLOGY VARIABLES

Urban/Rural Status
Population Density (Pop_dens): Census tracts are considered urban if the density of its population, measured as persons/square miles, is 2,500 or more.

Control Variable
Percentage African American (Pct_BLK): We find in the literature that low income, urban census tracts that are considered ‘food deserts’ are correlated with minority residents.

Access Variables
Percentage no Vehicle (Pct_noveh): A census tract is considered low access, if at least 100 urban households are located more than one half mile from the nearest supermarket and have no private vehicle access.

Median Household Income (Med_inc): A census tract in a metro region is low income if the median family income is less than or equal to 80% of the metro region’s median family income. The median household income for Metro Louisville (2010 Census) is $42,535. Households are considered low income for this study if they earn $34,028 or less.

Distress Variables
Poverty Rate (Pvty_rate): Census tracts with rates of poverty of 20% or more of the population are considered distressed.

Percentage SNAP (Pct_SNAP): This variable is used as an indicator of neighbourhood distress. Census tracts with more than 25% of households receiving Supplemental Nutrition Assistance are considered distressed.
APPENDIX I

CORNER STORE INITIATIVE CONTRACT

Store Name:
Address:
Owner:

I will use all financial awards for the purposes of stocking, storing and selling approved items that are deemed “healthy” by the Corner Store Initiative team.

I understand that any infrastructure or equipment purchased with funds from the YMCA’s Activate America grant will be property of the YMCA of Greater Louisville, and can be withdrawn at any time due to misuse or other violations of the terms of the Corner Store Initiative.

I, _________________________________, owner of ____________________________ will continue to accept WIC vouchers and Food Stamps (EBT cards) while in operation.

I will disclose financial records when appropriate to the Corner Store Initiative team in order to monitor the inventory of “healthy” items sold, and to collect data on customer purchasing patterns.

I understand that the Corner Store Initiative may attract media attention, and will cooperate with media organizations to highlight the program.

___________________________________________  __________________
(Store Owner’s signature here)                      (today’s date)

___________________________________________  __________________
(Program Manager’s signature here)                  (today’s date)
## Table 38. Racial Group

<table>
<thead>
<tr>
<th>Racial Group</th>
<th>Neighbourhoods</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Asian</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Biracial</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Black</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>White</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>10</td>
</tr>
</tbody>
</table>

## Table 39. Food Assistance

<table>
<thead>
<tr>
<th>Food Assistance</th>
<th>Neighbourhoods</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Yes</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>No</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>9</td>
</tr>
</tbody>
</table>

## Table 40. Median Household Income

<table>
<thead>
<tr>
<th>Median Household Income</th>
<th>Neighbourhoods</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>I do not wish to answer this question</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>$0-14,999</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>$15,000-29,999</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>$30,000-49,999</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>$50,000-74,999</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>$75,000-99,999</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>8</td>
</tr>
</tbody>
</table>
Table 41. Formal Educational Attainment

<table>
<thead>
<tr>
<th>Formal Educational Attainment</th>
<th>Neighbourhoods</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Less than High school or equivalent</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>High School or equivalent</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Some college-no degree</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Associate’s degree</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Master’s degree or higher</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>9</td>
</tr>
</tbody>
</table>
# APPENDIX K

## DESCRIPTIVE STATISTICS

Table 42. Descriptive Statistics of Access Dimensions and Items.

<table>
<thead>
<tr>
<th>Coding</th>
<th>Construct/Item</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Acceptability</strong></td>
<td>3.82</td>
<td>.41</td>
</tr>
<tr>
<td>GREET</td>
<td>Customer greeted</td>
<td>3.77</td>
<td>.53</td>
</tr>
<tr>
<td>HELP</td>
<td>Customer helped</td>
<td>3.82</td>
<td>.66</td>
</tr>
<tr>
<td>RACIAL</td>
<td>Negative racial terms used by corner store worker</td>
<td>4.36</td>
<td>.58</td>
</tr>
<tr>
<td>WILTED</td>
<td>Fruits and vegetables bruised or wilted</td>
<td>3.36</td>
<td>1.00</td>
</tr>
<tr>
<td>ROT</td>
<td>Fruits and vegetables rotten</td>
<td>3.77</td>
<td>.81</td>
</tr>
<tr>
<td></td>
<td><strong>Accessibility/Location</strong></td>
<td>3.65</td>
<td>.71</td>
</tr>
<tr>
<td>MODE</td>
<td>Mode of transportation used&lt;sup&gt;i&lt;/sup&gt;</td>
<td>3.31</td>
<td>1.14</td>
</tr>
<tr>
<td>TIME</td>
<td>Travel time to corner store&lt;sup&gt;ii&lt;/sup&gt;</td>
<td>4.09</td>
<td>1.29</td>
</tr>
<tr>
<td>SHP_NHD</td>
<td>Shop in neighbourhood</td>
<td>3.19</td>
<td>1.09</td>
</tr>
<tr>
<td>TRANSPT</td>
<td>Transportation problems</td>
<td>4.16</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td><strong>Accommodation</strong></td>
<td>3.70</td>
<td>.68</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>Fruits and vegetables easily seen</td>
<td>4.05</td>
<td>.38</td>
</tr>
<tr>
<td>OPEN</td>
<td>Store hours acceptable</td>
<td>4.50</td>
<td>.51</td>
</tr>
<tr>
<td>CRIME</td>
<td>Neighbourhood crime</td>
<td>3.55</td>
<td>1.06</td>
</tr>
<tr>
<td>CHECK</td>
<td>Check-cashing services</td>
<td>3.27</td>
<td>.70</td>
</tr>
<tr>
<td>ATM</td>
<td>ATM present</td>
<td>3.10</td>
<td>.94</td>
</tr>
<tr>
<td>SMELL</td>
<td>Store odour</td>
<td>3.27</td>
<td>1.03</td>
</tr>
<tr>
<td>SAFETY</td>
<td>Store safety</td>
<td>4.43</td>
<td>.51</td>
</tr>
<tr>
<td></td>
<td><strong>Affordability</strong></td>
<td>3.41</td>
<td>.40</td>
</tr>
<tr>
<td>EBT</td>
<td>EBT accepted</td>
<td>4.00</td>
<td>.45</td>
</tr>
<tr>
<td>AFFORD</td>
<td>Afford fruits and vegetables</td>
<td>3.81</td>
<td>.68</td>
</tr>
<tr>
<td>COST_NHD</td>
<td>Costs higher in neighbourhood</td>
<td>3.91</td>
<td>.75</td>
</tr>
<tr>
<td>COST</td>
<td>Cost a challenge to healthy eating</td>
<td>3.57</td>
<td>.68</td>
</tr>
<tr>
<td>SAME_COST</td>
<td>Fruits and vegetables cost the same</td>
<td>2.68</td>
<td>.72</td>
</tr>
<tr>
<td></td>
<td><strong>Availability</strong></td>
<td>3.63</td>
<td>.29</td>
</tr>
<tr>
<td>AVAIL_NHD</td>
<td>Fruits and vegetables available</td>
<td>3.70</td>
<td>.65</td>
</tr>
<tr>
<td>YR_AVAIL</td>
<td>Fruits and vegetables available throughout the year</td>
<td>3.62</td>
<td>.74</td>
</tr>
<tr>
<td>SELL</td>
<td>Store sells fruits and vegetables</td>
<td>3.71</td>
<td>.64</td>
</tr>
<tr>
<td>TYPE</td>
<td>Types of fruits and vegetables</td>
<td>4.38</td>
<td>.50</td>
</tr>
<tr>
<td>ENGH</td>
<td>Enough fruits and vegetables</td>
<td>3.81</td>
<td>.51</td>
</tr>
<tr>
<td>BUY_MORE</td>
<td>Buy more fruits and vegetables</td>
<td>2.44</td>
<td>.80</td>
</tr>
</tbody>
</table>

*Note: Unless otherwise stated, the variables were measured using a 5-item Likert scale anchored by *Strongly Disagree* and *Strongly Agree*. *Response scale: 1 = The Bus (TARC), 2 = Family/Friend motor vehicle, 3 = My personal vehicle, 4 = Bicycle, 5 = Walk. *Response scale: 1 = More than 30 minutes, 2 = 20-30 minutes, 3 = 15-20 minutes, 4 = 10-15 minutes, 5 = Less than 10 minutes.*
## APPENDIX L

**SURVEY ITEM RESPONSE PERCENTAGES**

Table 43. Survey Item Response Percentages

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Disagree %</th>
<th>Disagree %</th>
<th>Unsure %</th>
<th>Agree %</th>
<th>Strongly Agree %</th>
</tr>
</thead>
<tbody>
<tr>
<td>GREET</td>
<td>-</td>
<td>2.7</td>
<td>8.1</td>
<td>48.6</td>
<td>-</td>
</tr>
<tr>
<td>HELP</td>
<td>-</td>
<td>5.4</td>
<td>2.7</td>
<td>48.6</td>
<td>2.7</td>
</tr>
<tr>
<td>RACIAL</td>
<td>24.3</td>
<td>32.4</td>
<td>2.7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>WILTED</td>
<td>2.7</td>
<td>35.1</td>
<td>2.7</td>
<td>18.9</td>
<td>-</td>
</tr>
<tr>
<td>ROT</td>
<td>5.4</td>
<td>43.2</td>
<td>2.7</td>
<td>8.1</td>
<td>-</td>
</tr>
<tr>
<td>SHP_NHD</td>
<td>5.4</td>
<td>24.3</td>
<td>8.1</td>
<td>45.9</td>
<td>2.7</td>
</tr>
<tr>
<td>TRANSPT</td>
<td>37.8</td>
<td>32.4</td>
<td>2.7</td>
<td>10.8</td>
<td>-</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>-</td>
<td>-</td>
<td>2.7</td>
<td>51.4</td>
<td>5.4</td>
</tr>
<tr>
<td>OPEN</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>29.7</td>
<td>29.7</td>
</tr>
<tr>
<td>CRIME</td>
<td>5.4</td>
<td>37.8</td>
<td>2.7</td>
<td>10.8</td>
<td>2.7</td>
</tr>
<tr>
<td>CHECK</td>
<td>2.7</td>
<td>-</td>
<td>35.1</td>
<td>21.6</td>
<td>-</td>
</tr>
<tr>
<td>ATM</td>
<td>2.7</td>
<td>10.8</td>
<td>24.3</td>
<td>16.2</td>
<td>2.7</td>
</tr>
<tr>
<td>SMELL</td>
<td>-</td>
<td>37.8</td>
<td>2.7</td>
<td>16.2</td>
<td>2.7</td>
</tr>
<tr>
<td>SAFETY</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>32.4</td>
<td>24.3</td>
</tr>
<tr>
<td>EBT</td>
<td>-</td>
<td>-</td>
<td>5.4</td>
<td>45.9</td>
<td>5.4</td>
</tr>
<tr>
<td>AFFORD</td>
<td>-</td>
<td>5.4</td>
<td>2.7</td>
<td>45.9</td>
<td>2.7</td>
</tr>
<tr>
<td>COST_NHD</td>
<td>-</td>
<td>13.5</td>
<td>27.0</td>
<td>18.9</td>
<td>-</td>
</tr>
<tr>
<td>COST</td>
<td>-</td>
<td>37.8</td>
<td>13.5</td>
<td>5.4</td>
<td>-</td>
</tr>
<tr>
<td>SAME_COST</td>
<td>-</td>
<td>27.0</td>
<td>24.3</td>
<td>8.1</td>
<td>-</td>
</tr>
<tr>
<td>AVAIL_NHD</td>
<td>-</td>
<td>8.1</td>
<td>8.1</td>
<td>64.9</td>
<td>-</td>
</tr>
<tr>
<td>YR_AVAIL</td>
<td>2.7</td>
<td>-</td>
<td>13.5</td>
<td>40.5</td>
<td>-</td>
</tr>
<tr>
<td>SELL</td>
<td>-</td>
<td>5.4</td>
<td>5.4</td>
<td>45.9</td>
<td>-</td>
</tr>
<tr>
<td>TYPE</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>35.1</td>
<td>21.6</td>
</tr>
<tr>
<td>ENGH</td>
<td>-</td>
<td>2.7</td>
<td>5.4</td>
<td>48.6</td>
<td>-</td>
</tr>
<tr>
<td>BUY_MORE</td>
<td>-</td>
<td>54.1</td>
<td>5.4</td>
<td>13.5</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Bus (TARC) %</th>
<th>Family/Friend motor vehicle %</th>
<th>Personal motor vehicle %</th>
<th>Bicycle %</th>
<th>Walk %</th>
</tr>
</thead>
<tbody>
<tr>
<td>MODE</td>
<td>5.4</td>
<td>10.8</td>
<td>54.1</td>
<td>2.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Bus (TARC) %</th>
<th>Family/Friend motor vehicle %</th>
<th>Personal motor vehicle %</th>
<th>Bicycle %</th>
<th>Walk %</th>
</tr>
</thead>
<tbody>
<tr>
<td>MODE</td>
<td>5.4</td>
<td>10.8</td>
<td>54.1</td>
<td>2.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Bus (TARC) %</th>
<th>Family/Friend motor vehicle %</th>
<th>Personal motor vehicle %</th>
<th>Bicycle %</th>
<th>Walk %</th>
</tr>
</thead>
<tbody>
<tr>
<td>MODE</td>
<td>5.4</td>
<td>10.8</td>
<td>54.1</td>
<td>2.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Bus (TARC) %</th>
<th>Family/Friend motor vehicle %</th>
<th>Personal motor vehicle %</th>
<th>Bicycle %</th>
<th>Walk %</th>
</tr>
</thead>
<tbody>
<tr>
<td>MODE</td>
<td>5.4</td>
<td>10.8</td>
<td>54.1</td>
<td>2.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Bus (TARC) %</th>
<th>Family/Friend motor vehicle %</th>
<th>Personal motor vehicle %</th>
<th>Bicycle %</th>
<th>Walk %</th>
</tr>
</thead>
<tbody>
<tr>
<td>MORE THAN 30 MINUTES %</td>
<td>20-30 MINUTES %</td>
<td>15-20 MINUTES %</td>
<td>10-15 MINUTES %</td>
<td>LESS THAN 10 MINUTES %</td>
</tr>
<tr>
<td>TIME</td>
<td>2.7</td>
<td>16.2</td>
<td>8.1</td>
<td>10.8</td>
</tr>
</tbody>
</table>
REFERENCES


Beil, K., Budds, M., Hicks, E., Kennedy, D., Rencher, K., & Iannarone, S. S. (n.d.). *Land use and planning for secure regional food systems.*


Caspi, C. E., Kawachi, I., Subramanian, S. V., Adamkiewicz, G., & Sorensen, G. (2012). The relationship between diet and perceived and objective access to supermarkets among low-income housing residents. *Social Science & Medicine, 75*(7), 1254–62. doi:10.1016/j.socscimed.2012.05.014


Gallagher, M. (2007). *Key Sections of Central Louisville are “Food Imbalanced.”*


Macintyre, S. (2007). Deprivation amplification revisited; or, is it always true that poorer places have poorer access to resources for healthy diets and physical activity? *International Journal of Behavioral Nutrition and Physical Activity, 4*, 1–7. doi:10.1186/1479-Received


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Ploeg, M. Ver. (2010). Access to affordable, nutritious food is limited in “Food Deserts.”


BIOGRAPHICAL SKETCH

KAREEM M. USHER

RESEARCH INTERESTS

Urban food systems as an application of Social Justice • Alternative Community Economies • Equity Planning • Spirituality and Planning • Regional Governance • Planning for Places: Neighbourhood Development and Sustainable Community Economic Development • Collaborative Planning - Participatory Research

PROFESSIONAL PREPARATION

Doctor of Philosophy, Urban and Regional Planning 2015
The Florida State University: Tallahassee, Florida, United States of America
Dissertation Topic: Exploring the effects of formalised, targeted municipal food-planning initiatives on access to healthy food. Dissertation Committee Chair: Professor Tim Chapin

Master of Arts, Urban Planning 2005
University of Louisville: Louisville, Kentucky, U.S.A.
Specialisation: Housing and Community Development
Capstone: A Framework for Natural Hazards Mitigation in the Caribbean: Lessons Learned from Belize

Bachelor of Arts, Sociology 1997
Spalding University: Louisville, Kentucky, U.S.A.

Associates of Arts, Biology and Mathematics 1994
St. John’s College Sixth Form (Junior College): Belize City, Belize, Central America

ACADEMIC APPOINTMENTS

Post-Doctoral Fellow, August 2014 – present
Austin E. Knowlton School of Architecture – City and Regional Planning Section
The Ohio State University, Columbus, Ohio

The Kirwan Institute for the Study of Race and Ethnicity
The Ohio State University, Columbus, Ohio

AWARDS, FELLOWSHIPS AND CERTIFICATES

• 2013 Recipient: Dissertation Research Grant – The Graduate School, Florida State University
• 2013 Recipient: Global Partner Certificate – Training in Intercultural Competency
• 2005 Hardin Fellow: School of Urban and Public Affairs, University of Louisville.
• 2005 Recipient: The American Planning Association, Kentucky Chapter’s, “2005 Outstanding Student” Award.

RESEARCH

Refereed Journal Articles


**Other Publications**


**Conference Presentations**

- **Panellist:** Together at the Table: Justice in the Food System. A community dialogue on World Food Day. (24th October, 2014). Columbus, Ohio.
- **Presenter/Panellist:** Florida State University Fellows Forum – Journey to the Table: A Discussion of the Food System. (30th March, 2012). Tallahassee, Florida.
- **Co-Presenter:** Building Creative Communities Conference: Caring for Mother Earth through the Art of Storytelling, Community Building and Social Change. (2nd – 5th February, 2012). Colquitt, Georgia.

**Funded Projects**

**Graduate Research Assistant** (May, 2012 – May, 2013)

*The Florida State University*

**Project title:** Spatial Components of Successful Aging-in-place and Community-based long term care.

Co-Principal Investigators: Professor Rebecca Miles and Professor Andrew Aurand.

The main purpose of this project is to study Naturally Occurring Retirement Communities in an intermediate sized city in order to better understand how to support successful aging-in-place in such locations.

**Project Team Member** (Fall, 2006)

*Center for Infrastructure Research and the Center for Hazard Research and Policy Development – University of Louisville*

**Final Report:** Emergency Communications With Your Local Government and Community.

Retrieved at: http://www.werf.org/Content/ContentFolders/ReportPDFs/2003/03CTS5SCO.pdf

Principal Investigators: Professor Thomas Rockaway and Professor David Simpson.

Project funded by the Water Environment Research Foundation (WERF) through the United States Environmental Protection Agency (EPA) Homeland Security-Wastewater Security Agreement and the American Water Works Association (AWWA) Research Foundation.

**TEACHING**

**Graduate Teaching Assistant** (August, 2013 – May, 2014)

*The Florida State University*

Supervisor: Professor Rebecca Miles

Provided course support for ‘Healthy Cities, Health Communities’ and ‘Planning Theory’ courses.

**URP3000: Introduction to Planning and Urban Development** (Fall, 2010 – Spring 2012)
The Florida State University
Instructor of Record. I taught this upper-division undergraduate survey course to approximately 60 students for five semesters including a six-week summer session.

Staff Writing Consultant (Fall, 2009 – Summer, 2010) Jefferson Community and Technical College (Louisville, Kentucky)
Conducted individual writing consulting sessions both in person and online.

Substitute Teacher (2008 – 2010) Jefferson County Public Schools (Louisville, Kentucky)
Taught Science, Mathematics, History and Language Arts to elementary and high school students.

SERVICE and OUTREACH

- **Doctoral Student Representative:** Department of Urban and Regional Planning, Faculty Search Committee
- **Co-Organizer:** *Interdisciplinary Symposium-Bridging the Gap between Theory and Practice, between Academy and Community – Act 1: Social Justice.* Winners of first Florida State University Graduate School award ($2,000) for Interdisciplinary Symposium. The symposium to be held from 28th February – 2nd March, 2014 at FSU will foster conversations on social justice by bridging disparate fields, methodologies and ideas - [http://isjs.org/](http://isjs.org/).
- **Member:** Tallahassee Food Network, Tallahassee, Florida (2010-Present).
- **Member:** Community Farm Alliance, Louisville, Kentucky (2005-Present).
- **Member of the Board of Directors:** Louisville Central Development Corporation, Inc. (2008-2010).
- **Member of the Board of Directors:** Rivercity Housing Corporation (2010).
- **Participant:** Planning and the Black Community Division of the American Planning Association. (8 – 11 August, 2007). Indiana University Northwest; Gary, Indiana.
- **Founder and Past-President:** The Belizean Organization Of Kentucky (B.O.O.K.), Louisville, Kentucky.
- **Rotarian:** Rotary International-Jeffersontown Rotary Club of Jeffersontown, Kentucky. Secured funding to off-set travel costs for Belizean children suffering from neck, spine, shoulder, elbow, hip, knee, foot, and other types of bone abnormalities, to receive treatment at Shriner’s Hospital in the United States.
- **Participant (2005-2006):** Re-defining Brownfields and the Revitalization of the Parkhill Corridor, three-month symposium addressing brownfields with particular attention to those in the Parkhill neighbourhood.
- **Public Relations Officer (2004-2005):** The Planning Students Organization, University of Louisville.

PROFESSIONAL EXPERIENCE

**Consultant**
Community Farm Alliance (2005)  
Researcher and Community Organiser to establish farmers’ markets in urban neighbourhoods identified as ‘food deserts’.

**Member**
Champions for West Louisville Economic Development (2005- 2010)  
Organised place-making workshop for addressing economic development issues in West Louisville’s struggling neighbourhoods.

**Graduate Research Assistant**
International Service Learning Program- University of Louisville (2005)  
- Received foreign dignitaries.
- Office management.
- Conducted staff meetings.
- Held pre-departure seminars for students travelling to Belize on Service Learning Program. Managed students and faculty at the Belmopan City site in Belize.
LANGUAGES

- Belize Kriol: Fluent speaking, comprehension and writing.
- English: Fluent speaking, comprehension and writing.
- Spanish: Basic speaking, comprehension and writing.

SKILLS

- Mixed-Methods research design.
- Verbal and written communication.
- IBM SPSS Statistics 20, ArcGIS-ArcMap 10, MAXQDA 11, GeoLytics Data Package.
- Cross-cultural competency.