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**Supermarket Redlining and Food Deserts: Characterizing Food
Insecurity and Urban Decline**

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Abstract

In recent decades, the act of supermarkets abandoning and disinvesting in inner city locations has resulted in increasing food insecurity and urban decline for residents. These so-called 'food deserts', occurring in cities throughout the United Kingdom and North America, and including Winnipeg, should be recognized as a serious threat to the revitalization of inner city areas. A variety of solutions can be addressed in the context of policy change and community development.

Introduction

An important, yet underemphasized trend has been occurring in cities all over the United Kingdom, USA, and Canada: the abandonment of food supermarket stores of inner city neighborhoods for suburban areas, implying a discrimination that is commonly termed ‘supermarket redlining’. This leaves predominantly low-income residential zones without a convenient and healthy food source (dubbed ‘food deserts’), which can contribute to a variety of detrimental consequences, most importantly the deprivation of food security. The grocery store has morphed throughout history to reach the present-day big-box, supermarket, formed and often ruled by conglomerate chain businesses that can facilitate high cash flows and designed to serve the needs of consumers that are predominantly middle-to-higher-class in their suburban locations. There are major implications for urban decline and revitalization related to the issue of food deserts, and it is crucial to examine these correlations in a city with significant urban decline such as Winnipeg. There are ideal steps that public policy can make in the direction of addressing this issue, with the cooperation of the housing sector and community development organizations. More light should be brought to those living in the inner city who are suffering from the lack of accessibility to one of the most important human needs: food.

The Changing Face of the Grocery Store Throughout History

The phenomenon of supermarkets moving out of urban inner city areas in favour of more suburban locations can be better understood through a historical examination of the grocery store in North America and the factors that have resulted in the present day situation.

At the beginning of the twentieth century, locally and independently owned grocery stores dominated the food retail industry. Though profit margins tended to be low, and business turnover high, these stores were designed to be full-service (Eisenhauer 2001). However, things changed in 1916 when the US entered the First World War, resulting in the increase of food prices. The pressure for food retailers to lower their prices began to change the face of food retail from full-service to self-service. This not only reduced staffing costs, but also made all products more accessible to the consumer’s eye (Patel 2007).

Still, in the 1920s-1930s, the food retail market was predominantly in the hands of independent merchants, with no small help from the substantial political influence these stores possessed. During and after World War Two, however, there was dramatic change, in that food shortages and a loss of many of these retail owners to the war effort saw an eventual shift towards larger self-service stores, the ‘pre-supermarkets’ of their time. In addition, cities were building and expanding, and many of these larger grocery stores followed the primarily white middle class clients to where they were purchasing homes on the edges of the city (Eisenhauer 2001).

The 1950s brought with them the shopping center, which was usually built around newly emerged supermarkets and on the outskirts of cities. Grocery retailers found that the expansive land available to them in these areas were much more conducive to the construction of larger stores, enabling them to also carry various non-food items in demand. From 1950-60, supermarkets in the US went from constituting 35 percent to 70 percent of the retail food market. (Eisenhauer 2001).

Computers were installed in supermarkets during the 1960s, which notably contributed to the collection of a database of consumer need and demand, at much higher speeds than previously, increasing retailer control over prices both in their store and in wholesale. In the 1970s, higher competition between supermarket chains began pushing out many of the independents that were left. By the end of the 1980s, these independent grocers were falling back on Leveraged Buyouts (dependence on a financial sponsor for significant loans) and mergers, and the result was usually the augmentation of food prices and less competition in inner city neighborhoods. The pulling out of supermarkets from inner city areas in the subsequent years provoked the development of the term ‘supermarket redlining’, to apply the illegal banking practice of ‘financial redlining’—the refusal to lend or invest in a certain neighborhood (often low-income, with a substantial ethnic minority population) to these patterns of divestment (Eisenhauer 2001). What we have seen in North America since then is the continuation and intensification of this trend, and the resulting ‘food deserts’, or “poor urban areas where residents cannot buy affordable, healthy food” have had various adverse consequences on the people who often depend on these grocery stores for food security (Cummins & Macintyre, in Friendly 2008, 8).

Characteristics and Consequences of ‘Supermarket Redlining’ and ‘Food Deserts’

As urban centers in the US and Canada have moved towards suburban expansion and development, it has primarily been middle-higher income populations who transfer out of inner city areas in search of better housing, schooling, increased safety and decreased congestion (Carter & Polevychok 2003). In many cases, this leaves high rates of low-income residents in the inner city, whose lack of purchasing power usually implies a lack of political power. Inner city neighborhoods that lack a conveniently located grocery store within or near their boundaries do not have the same choices as suburban consumers when it comes to food quality, price and selection. Often these communities are forced to either shop at smaller convenience stores, whose nutritional food selection is typically poor quality or nonexistent, and food items typically cost from 10-60 percent more; or spend extra to take public transportation (where available) to visit far-away supermarkets (Kolodinsky & Cranwell 2000; Raja, Ma & Yadav 2008; Eisenhauer 2001).

In addition, it is important to note the health costs that come with lower nutritional intake, such as susceptibility to Type II Diabetes, heart disease and stroke—which, aside from the personal costs of these illnesses to the victims, also costs the health care system (Simcoe 2008; Skerritt 2009). Residents of Winnipeg’s Point Douglas neighborhood, an evident food desert, have higher rates of heart disease and stroke than anywhere else in the city (Skerritt 2009). A UK study that looked at the impact of a sudden and significant improvement in access to food retail in deprived areas on residents’ food consumption patterns found that those respondents that had the poorest diet habits before the intervention were the people that most significantly increased their consumption of fruit and vegetable produce, and ceased shopping at the costly, limited-range stores they had previously frequented (Wrigley et. al. 2002). Further, Eisenhauer (2001) notes that, while many studies on diet tend to examine differences between ethnic groups, nutritional deficiencies are more related to class, and therefore income, rather than culture.

The withdrawal of supermarkets and large grocery stores from inner city areas to the suburbs also damages whole communities and neighborhoods. Firstly, the ‘redlining’

effect of giving the neighborhood a perception of high investment risk is a major factor (Eisenhauer 2001). There are also reduced opportunities for employment of local people, fewer multiplier effects (stimulation of the surrounding economy, often locally-owned businesses), lower entrepreneurship opportunities for these surrounding businesses to be stimulated, and less support for community activities. The pattern of ‘outshopping’—grocery dollars from inner city residents being spent outside inner city boundaries—results in inner city deprivation of as much as 25% of the existing demand (Pothukuchi 2005; Kilman 2005). This goes to show that in many cases, there is potential in the inner city nonetheless.

There have been various reasons given by supermarket chains on their decisions to pull out stores from these urban areas. High costs of store development due to demolition, large land requirements for typical big-box style stores (and parking), less convenient loading and unloading for trucks, less convenient access to major highways and transport routes, shifts in population, high crime rates and market pressures to maximize profit and cash flow serve as the main arguments in favour of this action (Kolodinsky & Cranwell 2000; Pothukuchi 2005). This long list of deterrents for supermarkets to develop in inner city areas may require changes in public policy as incentive, or alternative solutions for food security, which will be discussed further in this report.

Why Should Food Deserts be Addressed?

In Raj Patel’s book *Stuffed and Starved: Markets, Power and the Hidden Battle for the World’s Food System* (2007), he speaks about supermarket redlining and food deserts, and the subsequent urgency many inner city neighborhoods in American cities are facing due to its effects. This was placed in a local context while hearing members from Winnipeg’s Exchange District Residents’ Association Committee call out for the need of a grocery store in their neighborhood, with a growing resident population and high demand. Research shows that, although the issue is only relatively recently addressed by studies, these patterns are occurring similarly in the UK, US, and in Canada. Counter to Canadian studies in Edmonton and Montreal showing the relative absence of these food deserts (Smoyer-Tomic, Spence & Amrhein 2006; Apparicio, Cloutier & Shearmur

2007), a study by Larsen and Gilliland (2008) executed from 1961-2005 in London, Ontario, concluded that food deserts are in fact a very real occurrence in Canada, and more likely so in other mid-sized Canadian cities such as Windsor, Winnipeg and Saskatoon. Some publications and media attention (though very little) has been given to the phenomenon within Winnipeg, regarding neighborhoods such as Point Douglas (Skerritt 2009).

The connection of this issue to urban decline and revitalization seems obvious, as the detrimental effects to individuals, families, and communities living in these inner city food deserts are highly correlated with disinvestment (Carter & Polevychok 2006). The pattern of supermarket migration may also correlate well with the stages of Bourne's Neighborhood Life Cycle—suburbanization, followed by the downgrading of facilities, and the thinning out stage of removing stores from many inner city areas (excluding the second stage of In-filling, which does not seem to be common or practical with supermarket chains) (Carter & Polevychok 2006). The food retail services that wish to cater to a population that is purchasing high quantities (of food and non-food items) simply follow the higher income families as they 'filter' towards new housing in the suburbs.

The reality for many low-income individuals faced with a lack of food choices is often to resort to whatever they can access most easily (usually implying convenience stores) as parents, who are often single, and working to feed their children simply don't have the time, money or energy; it has been shown that these young parents tend to choose lower cost over higher quality foodstuffs (Whelan et. al. 2002). For those that are able to 'outshop' at distant supermarkets, this contributes to urban decline by depriving the local economy; in addition, a lack of convenient stores such as food retailers may provoke those who can afford it to leave the area. As mentioned, the absence of multiplier effect hurts various other businesses in the neighborhood, and this vicious cycle often leads to potential investors in the area turning away from development. Further, the implications of housing policy on food security is of critical note, and will be discussed in more detail in the context of policy effects (Friendly 2008).

Food Deserts in Winnipeg

The London, Ontario study (Larsen & Gilliland 2008) is probably the most thorough to-date on the subject of food deserts in Canada, and as mentioned above, it definitely has implications for similarly sized cities, including Winnipeg. The study claims that over the past forty years, the percentage of residents who had good access to a supermarket has decreased from 75 percent to 20 percent. London had 25 supermarkets in 1961, and even after the city's population almost doubled, there were only 28 supermarkets in 2005. During this time, the average store size grew from 9000 square feet to about 43,000 square feet, though there were fewer residents living near these monster big-box stores. The study concluded that only 1 in 5 inner city residents have access to a conveniently located grocery store (Larsen & Gilliland 2008).

This scene is certainly applicable to the Winnipeg context, where many inner city residents are stuck in vast food deserts. Point Douglas neighborhood, for example, has only four chain supermarkets, which are scattered on its edges: A Safeway on Mountain Avenue, an Extra Foods and Safeway across the street from one another at Main Street and Inkster Boulevard, and a California Fruit Market on Euclid Avenue (Skerritt 2009). However, spokespersons from both the Mosaic Market Business Improvement Zone (BIZ) and the Point Douglas Residents' Committee expressed concern that California Fruits is now up for sale, and in the meantime they are scaling back their stock. Also, since a Pay Fare in that vicinity closed down around six years ago, competition has not been as fierce and prices have risen. In the meantime, congruent with the studies, many are simply resorting to convenience stores for their grocery shopping (Mosaic Market BIZ 2009; Point Douglas Residents' Committee 2009).

A representative from the West End BIZ lamented the December 2008 closure of the Safeway at Ellice Avenue and Wall Street, which was much depended on by many members of the West End Neighborhood (West End BIZ 2009). Safeway has decided to close this location as well as one in Polo Park Shopping Centre, to instead develop a new branch at the suburban corner of Ness and Century (Olafson 2008). Regardless, notes the West End BIZ representative, the Safeway at Sargent and Sherbrook is fortunately still seeing high rates of business and was just recently renovated (West End BIZ 2009).

A spokesperson from the Exchange District BIZ has said that the lack of any grocery store in the neighborhood has been recently raised in the media, particularly by the Exchange District Residents' Association. The BIZ has been making a big push to encourage more people to move into the area, which would, in turn, increase pressure and demand for these services. However, the BIZ recognizes that bringing a large supermarket into the Exchange is perhaps neither the most practical nor best option, and would like to see other developments with potential (Exchange District BIZ 2009). Since the time of this interview with the Exchange BIZ spokesperson, Mondragón Restaurant and Bookstore on Albert Street, a worker's co-operative, has created a grocery store for the neighborhood: 'Sacco and Vanzetti's Local Groceries and Vegan Deli.' This may be a more appropriate food retail option for the socially conscious dietary preferences of many of this area's residents, but will have to keep its prices reasonable in order to best serve the lower-income residents that live in the area.

The Downtown BIZ was more optimistic on the subject, noting that residents are not suffering majorly with 16 different grocery stores in the area, though there has been some desire to see a 'higher-end quality' of store. They see grocery stores such as The Bay Food Mart making beneficial contributions to the community in terms of quality and selection (Downtown BIZ). Nevertheless, it is clear that food deserts do exist in Winnipeg, and are affecting the predominantly low-income populations that live in the affected neighborhoods.

Opportunities, Failures and Successes

Judging from the challenges identified in the 'Characteristics and Consequences' section of this report, it would seem that the current model of large supermarkets and the rigorous requirements that accompany them are less than ideal in more densely-populated, spatially-lacking inner city regions. However, US studies (Pothukuchi 2005) have seen a change in perceptions of the 'urban disadvantage' since the 1990s, namely through two trends: First, the suburban grocery market has hit maximum development in many places, and growth through mergers have already been largely achieved, which is leading chains to look for more opportunities further within the city boundaries once more. Secondly, those chains that are 'taking chances' on inner city locations are often finding a very

positive response from consumers (contributing through business and loyalty), and have made some progress in addressing some issues of development and operation unique to the urban, inner city environment. However, these circumstances have been rare in the US and usually required political co-operation at the highest levels and partnerships with non-profit community organizations (Pothukuchi 2005). Other research recommended that consumers would be between 1.3 to 3.5 times more likely to shop at a downtown grocery store if it offered both convenience and staple items, offered special services (such as delivery or phone orders), and if it was easily accessed by transportation (Kolodinsky & Cranwell 2000).

Additional studies have found that, while the convenience and supply that supermarkets can offer may seem optimal; they are perhaps not always the best option in the inner city context. Introducing new supermarkets into an area may result in the closure of smaller, independently owned grocery stores; and in addition, the risk of the supermarket pulling out quickly could do more damage to the neighborhood than the state it was in before they were recruited. Instead, Raja, Ma and Yadav (2008) call for “creative planning and policy support for networks of existing small grocery stores,” which may be a better option for many residents and the local economy. Some alternatives to relying on supermarkets may be alternative forms of food supply such as locally owned independent stores, farmers’ markets, neighborhood gardens, or community supported agriculture (Eisenhauer 2001).

Short, Guthman and Raskin (2007) emphasize that neither extreme of recruiting large supermarkets nor looking to alternative models are necessarily the answer. They recommend the improvement and development of already existing grocery stores in inner city neighborhoods, though stress that the difference to food security must be achieved through offering high quality produce, maintaining appropriate labour standards, and selling at affordable prices. An example of success through this avenue can be seen in the San Francisco Bay area, where these smaller, independent outlets kept neighborhoods adequately food-secure (Short, Guthman & Raskin 2007).

It was difficult to find a particular study that identified an example of a failed project of supermarkets’ moving into the inner city; however, with the risks listed above, linked to the adverse effects of a large chain pushing out smaller businesses and

damaging livelihoods in an area, it is easy to see how there may be better solutions in certain circumstances. Two success stories have stood out as examples of how members of an inner city community can take the initiative and provide the means for healthy, nutritious, quality food for their own neighborhoods. They are also both, coincidentally, co-operatively owned and operated.

The first is the People's Grocery in West Oakland. In the inner city neighborhood of Emeryville, California, home to 30,000 (mostly racial and ethnic minorities), there are 36 convenience and liquor stores, and only a single supermarket. Three young activists living in the area decided to take it upon themselves to found the People's Grocery in a co-operative style, selling fresh, organic produce grown on donated land within the neighborhood as well as a farm outside the area, to people in the community at affordable prices. They offer delivery services, and a weekly pre-ordered package of fruits and vegetables to those who need them, and have found the response and business incredibly amazing and inspiring (Patel 2007).

Secondly, Neechi Foods in Winnipeg, Manitoba, operating since 1990, has evolved into the decently successful cooperative it is today, supplying fresh, quality foods to residents of its Lord Selkirk Park neighborhood and beyond (Maunder et. al. 2005). Its strictly guiding community economic development principles are focused on local supply, employment, skill development, and has contributed support for other community development initiatives (Neechi Foods 2009). Both of these success stories are examples of community grocers contributing to food security (as well as community development) and making the needs, values and health of their customers (largely Aboriginal) their priority, instead of focusing on corporate economic interests, which most supermarkets are likely to have as their primary concern.

What Role Can Public Policy and Community Development Play?

Public policy can take significant and meaningful initiative in the matter of addressing food insecurity in food deserts. However, according to a study by Pothukuchi (2005), city planning and developing agencies are largely inactive in designing food retail strategies; in many cases they are "unsure whether [dealing with] grocery store access is

their role.” (238) Suggestions for policy include: the coordination of systematic assessments of food demand at both citywide and neighborhood levels; finding potential chains and independents from within and outside the area that could be introduced to stimulate competition; creation of a citywide supermarket program to alleviate work for developers by identifying potential sites and assistance, and utilizing a review process. Public policy can also recognize grocery stores as contributors to community quality of life, rather than simply tools of economic development (Pothukuchi 2005). Other policy suggestions for local government have included: providing support for existing businesses and food producers and encouraging building and enhancing networks; working on public safety concerns in inner city areas; creating incentive programs that could help smaller, local groceries acquire equipment needed to store and sell healthy foods; and a targeted focus on those neighborhoods that are least food secure (Raja, Ma & Yadav 2008).

The role of community non-profits in collaborating with policy-makers and developers is important, as their efforts can often help to decrease the perception of high investment risk where unnecessary (Pothukuchi 2005). David Northcott of Winnipeg Harvest acknowledges that a growing number of people with low-income status are depending on food banks, but that these services are a ‘band-aid’, not a long-term solution. One large problem is that many people simply are not educated about healthy food alternatives, and creative meal recipes using fresh produce. Winnipeg’s Mary Jane Easton facilitates cooking classes for aboriginal and refugee women, teaching them how to choose and cook healthy, local, affordable meals. Initiatives by community organizations and individuals are valuable, but are more likely to be utilized by those whose lives are not overtaken by chronic crime and substance addictions (Skerritt 2009).

Friendly (2008) notes that many low-income families are caught in a ‘rent-food dichotomy’, in which housing payments usually have priority over food purchases. She suggests that social housing authorities in Canada have a responsibility and opportunity to incorporate community food security initiatives into food security policy frameworks, while maintaining a focus on community building. Some alternatives may be incorporating gardening spaces into and near housing units, and although there may be tensions between these types of endeavors and the need for housing improvements, these

gardens have been justified by residents as improving food security, community safety and networks (Friendly 2008).

Conclusion

What is clear in an examination of food deserts in regions all over the West, and of particular importance in the local context of Winnipeg, is that this is a subject that has gained little attention and only quite recently; and that for city and community food security initiatives, as well as urban revitalization endeavors, it must be addressed as an integral and urgent need for many living in inner city areas. The effects are wide reaching and long-lasting, and city policy makers and community organizations alike should be looking at the needs of each neighborhood through its own particular context, and search for solutions that will strengthen existing infrastructure, business and resources (including human) rather than depriving the community of these elements. So, in the question of whether supermarkets are the best direction to push in the inner city environment will depend on the situation, making it quite possible that alternative developments and improvements are more beneficial in the long run. Still, supermarket redlining should be avoided and discouraged by city policy makers and developers, as many inner city community members rely heavily on the services of these stores to fulfill their basic needs of consumption. It will be intriguing to see what solutions evolve in cities such as Winnipeg to combat this critical issue in the future.

BIBLIOGRAPHY

- Apparicio, P., M-S. Cloutier, & R. Shearmur. (2007). The case of Montreal's missing food deserts: Evaluation of accessibility to food supermarkets. *International Journal of Health Geographics*, 6.
<<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1803774>>.
- Carter, T. & C. Polevychok. (2003). Comprehensive neighborhood studies: Characterizing decline. *Canada Research Chair in Urban Change and Adaptation, The Institute of Urban Studies, University of Winnipeg*, 1-48.
- Downtown BIZ. (10 February 2009). Spoken interview. (10 February 2009). Spoken interview. Winnipeg, MB.
- Eisenhauer, E. (2001). In poor health: Supermarket redlining and urban nutrition. *GeoJournal*, 53, 125-133.
- Exchange District BIZ. Spoken interview. (10 February 2009). Spoken interview. Winnipeg, MB.
- Friendly, A. (Sept. 2008). Towards food security policy for Canada's social housing sector. *Canadian Policy Research Networks Report*, 1-72.
- Kolodinsky, J. & M. Cranwell. (2000). The poor pay more? Now they don't even have a store to choose from: Bringing a supermarket back to the city. *Consumer Interests Annual*, 46, 1-6.
- Larsen, K. & J. Gilliland. (2008). Mapping the evolution of 'food deserts' in a Canadian city: Supermarket accessibility in London, Ontario, 1961-2005. *International Journal of Health Geographics.*, 7, 16.
- Maunder, M, V. Maracle, T. Carter, C. Polevychok & T. Janzen. (Apr. 2005). Echoes of inner city voices. *Institute of Urban Studies, Winnipeg, MB*. 1-52.
- Mosaic Market BIZ. (10 February 2009). Spoken interview. Winnipeg, MB.
- Neechi Foods Worker Co-op. (2009). Neechi CED Principles. *The Canadian CED Network*. <<http://www.ccednet-rcdec.ca/?q=en/node/4539>>.
- Olafson, J. (12 Nov. 2008). Safeway plans to close inner-city store. *CTV Winnipeg*. <http://winnipeg.ctv.ca/servlet/an/local/CTVNews/20081112/wpg_safeway_closing_081112/20081112/?hub=WinnipegHome>.

- Patel, R. (2007). *Stuffed and starved: Markets, power and the hidden battle for the world's food system*. Toronto: HarperCollins.
- Point Douglas Residents' Committee. (10 February 2009). Spoken interview. Winnipeg, MB.
- Pothukuchi, K. (2005). Attracting supermarkets to inner-city neighborhoods: Economic development outside the box. *Economic Development Quarterly*, 19, 232-234.
- Raja, S., C. Ma & P. Yadav. (2008). Food deserts: Measuring and mapping racial disparities in neighborhood food environments. *Journal of Planning Education and Research*, 27, 469-482.
- Short, A., J. Guthman & S. Raskin. (2007). Food deserts, oases, or mirages? Small markets and community food security in the San Francisco Bay area. *Journal of Planning Education and Research*, 26, 352-364.
- Simcoe, L. (17 Oct. 2008) Core residents more susceptible to diabetes. *Saskatchewan News Network*.
 <<http://www2.canada.com/reginaleaderpost/news/story.html?id=f1316248-8106-44a2-85da-c82add246ee2>>.
- Skerritt, J. (11 Jan. 2009). Hunger amid the plenty: The inner city is a 'food desert' – a nutritional nightmare. *Winnipeg Free Press*.
 <http://www.winnipegfreepress.com/breakingnews/hunger_____amid___the___plenty.html>.
- Smoyer-Tomic, K.E., J.C. Spence & C. Amrhein. (2006). Food deserts in the Prairies? Supermarket accessibility and neighborhood need in Edmonton, Canada. *The Professional Geographer*, 58 (3), 307-326.
- West End BIZ. Spoken interview. (10 February 2009). Spoken interview. Winnipeg, MB.
- Whelan, A., N. Wrigley, D. Warm & E. Cannings. (2002). Life in a 'food desert'. *Urban Studies*, 39 (11), 2083-2100.
- Wrigley, N., D. Warm, B. Margetts & A. Whelan. (2002). Assessing the impact of improved retail access on diet in a 'food desert': A preliminary report. *Urban Studies*, 39 (11), 2061-2082.