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Food Deserts in Urban Areas

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Urbanization in its expansion to the outer circles can have a variety of positive aspects, but the process does not come without difficulties and problems that negatively affect a number of people in society. Gentrification, crime, and unequal access to education, healthcare, and/or food are a few common issues urban areas face. Limited access to food is a particular concern for urban areas that has not received as much attention as some of the other obstacles. Food deserts are a real problem affecting the lives of urban families and children, but they are not always considered on the forefront due to the perception that cities and urban areas have food products aplenty—otherwise they could not possibly support dense populations. However, food deserts specifically focus on the quality of food available and the type of access residents have to these basic nutritional necessities. Food deserts have a more significant impact on impoverished areas and minorities, placing costs of food and health as heavier burdens. With growing concerns for health, there are measures in place attempting to combat the effects of this urban issue, but in an evolving society, more changes for the benefit of all can and should be made.

Problem Definition

Food as sustenance is a basic need for living organisms and absolutely necessary for human life and existence. As cultures developed more complexity, moving away from hunter-gatherer style societies, access to agricultural products and other forms of sustenance was further highlighted as a key point for growing populations, especially with regard to urbanization (Malthus, 1798). Food shortages are a global concern that have a tendency to affect people who live in poverty. The concept of starvation is often far removed to third-world countries where impoverished peoples eat dirt due to the sheer desperation of having something fill their stomachs (Katz, 2008). However, the stark reality is that starvation and food shortages are issues that hit much closer to home, affecting many even in the "booming and prosperous" cities of the United States. Individuals living in urban areas distressed by poverty or elevated crime rates often experience these types of food shortages and restricted access to nutrition via food deserts. According to the United States Department of Agriculture (USDA), "food deserts are defined in theory as urban neighborhoods and rural towns without ready access to fresh, healthy, and affordable food. Instead of supermarkets and grocery stores, these communities may have no food access or are served only by fast food restaurants and convenience stores that offer few healthy, affordable food options" (Wright et al., 2016). Keeping all this in mind, food deserts have a huge impact on the quality of nutrition and overall health for inhabitants of urban areas, a feature that often goes hand-in-hand with poverty.

A person's diet can easily be considered the primary indicator of health in multiple aspects: the type of food one puts into their body has great significance, not only for physical health as it relates to nutrition, but also social, mental, and emotional health. Physically, a balanced diet with whole and fresh foods is essential to maintain the necessary energy to go about daily activities. Even when facing various illnesses, many turn to food-based remedies to feel better (think chicken soup, ginger ale, tea, etc.). A poor diet, whether due to conscious choices or food desert-related malnutrition, can have a snowball effect that leads to other health issues such as obesity, heart disease, and diabetes, among others. Culturally, food is central to a majority of social gatherings: holiday dinners with family and friends, block party potlucks, going out for or making dinner. These types of community-building activities involving the sharing of food with others have a chemical response in the human brain that stimulates a release of dopamine, a pleasure-inducing hormone issued as a chemical reward for food and sex. Too much or too little of this hormone can have negative impacts on emotional and mental health, in addition to the potential for addiction to the euphoric sensations it produces. In respect to the social and cultural ties people hold to food, this creates a socially constructed limitation of food access in many areas, further restricting the implicit availability of foods based on where it is deemed socially acceptable to purchase from as Howerton et al. (2017) discover in their interview study. Wright et al. (2016) discuss similar findings regarding the racial and class disparities in food choices and food accessibility.

The problem of foods in food deserts is not necessarily the extreme scarcity that leads to starvation seen in the extreme poverty of third world countries, but there is certainly something to be said for the quality of food available or what is perceived as available. Many people living in urban and poor urban areas only have access to cheap processed foods available at gas stations and convenience stores. Alternatively, many ethnic families do not feel welcome at predominantly white stores, or they simply cannot afford them, so they are then redirected to the local convenience stores (Howerton et al., 2017). Typically, the food sources at these marketplaces are either frozen or filled with countless preservatives to increase shelf life and unfortunately do not hold much nutritional value. Regularly eating or relying on these goods as a main dietary staple can lead to higher dependencies on sugar-rich processed food substances, which can further cause addiction. Additionally, continually providing one's body with insufficient nutrients increases the risk of developing heart disease, Type II diabetes, and/or obesity. Medical treatments and emergencies related to these health problems can be astronomical for anyone, especially for individuals living in poverty or who do not have proper healthcare. The financial strain of these issues harms a family's chances of rising above poverty, effectively continuing the cycle. Organizations like SNAP, Fed40, food banks, and others are attempting

to increase access to whole foods in urban areas (Green, 2016). If these gaps are not closed, the potential costs of medical care burdens being placed upon the taxpayer and government are far greater than the costs of providing the means for a balanced and healthy diet.

Food deserts affect many urbanized individuals and families with children, particularly those without cars or who live at or near the poverty line. There is an unequal distribution of lower class and minority individuals who experience this type of food insecurity (Wright et al., 2016). Limited transportation is a huge factor that causes food deserts. Many grocery stores are unlikely to have locations in areas with poor demographics or in impoverished areas, so people who live in these regions are often faced with the problems of food deserts (Green, 2016). Standard grocery stores are not in the vicinity, which makes grocery shopping for families without cars or reliable transportation extremely difficult. Additionally, many families struggle with affordability and finding stores to accept food stamps. As Hashim discusses: "Of the 436 venues that permit food stamps, 89 (less than one quarter) were "mainstream" grocers, which offered fresh produce" (2015). Accounting for all the nutritional deficiencies that lead to more serious health issues, food deserts further affect taxpayers and the government budget on a macroscale (Bastian, 2017).

Existing Policies

Food deserts have been placed in somewhat of a spotlight in recent years as the push for food security has highlighted the necessity of enabling all people to have access to adequate nutrition. For example, Michelle Obama's "Let's Move" campaign increased awareness about the importance of healthy eating to prevent obesity and other health problems, especially for children, which subsequently also pointed to the issue of food deserts (Hashim, 2015). National attention about the issue, in turn, has led to a number of strategic policy making and grassroots approaches to combat the negative effects of food deserts on communities and make nutritional alternatives more affordable to low-income families. As Ghosh-Dastidar et al (2017) mentions, policies such as the Healthy Food Financing Initiative (HFFI) have been introduced in order to increase access to healthy and budgetable produce and other food items to areas affected by food deserts. Bringing in grocery stores into underserved areas has also been a strategy to combat food deserts, as seen in the studies of both Ghosh-Dastidar et al. (2017) and Cummins et al. (2014).

Aside from traditional grocery stores, there are many movements toward urban farming and establishing community gardens as a means of increasing healthy food options. According to an article on gardens in food deserts, "Mobile vans have also been suggested as a means of providing food insecure

neighborhoods with fresh fruits and vegetables. Other studies have suggested that building a strong local food economy through farmer's markets and direct sales from farms could be an important strategy in the fight against obesity" (Mack, 2017). Liz Enbysk (2017) summarizes a number of different ways that cities across the country were fighting back against food deserts: Tampa Bay finances fresh produce for food stamp recipients; Syracuse enables grants and tax breaks to bring in affordable grocers; Baltimore uses maps and geographic information systems to survey areas and gauge the presence of food deserts; Denver fosters a non-profit group to develop an innovative urban farm market to provide fresh foods for residents and community members.

The issue of food deserts and the increasing awareness of their existence has not gone unnoticed—many programs and policies are being designed in an effort to reduce their effects and provide better access for nutritional needs. Walker (2012) compares the successes of two counties' responses to their food deserts: in Cook County, Illinois, the strategy of mobile groceries was extremely effective in providing residents with the fresh produce they needed; in Grant County, New Mexico, residents were able to establish a system of community gardens to provide the fresh produce needed by residents. The three-year case study of Ghosh-Dastidar et al (2017) saw mostly positive outcomes for the addition of supermarkets in food deserts, with increased access for residents to obtain healthy foods. However, the results from different types of strategies are not always so successful, as policies often cannot cater to the needs of every individual. In Chicago, many strides have been made to combat the food deserts of the segregated city: companies opening new stores, neighborhoods initiating urban farms, and even partnerships to sponsor mobile grocery stores, but "In spite of these efforts, food deserts continue to plague Chicago[,] and it is clear that private corporations cannot eradicate food deserts on their own" (Edwards, 2015).

The influence of different strategies on food deserts is slow to take effect in many communities because the need for food is remarkably complex as discussed previously. Pricing is a major factor of food shopping, and in the wake of commercial farming, the average cost to eat healthily is estimated to be about one dollar and fifty cents per person per day, which simply is not feasible for some (Wright et al., 2016). Wright et al. (2016) further discuss that the choice to consume unhealthy foods can stem out of the emotional needs for familiarity or enjoyment, even if access to and knowledge about healthy eating is present. As explained in an article on putting grocery stores in food deserts, "An underlying tenet of the Healthy Food Financing Initiative (HFFI) — a $500 million investment designed to bring affordable healthy foods to food deserts — is that opening a supermarket in the neighborhood will improve healthy food access for its residents" (Ghosh-Dastidar et al, 2017). The study found that many residents who shopped outside of their neighborhood before, continued to do so even after a

new supermarket was opened closer to their homes, possibly out of the need for familiarity that Wright et al. (2016) references.

Many barriers exist that make it difficult to effectively battle food deserts, such as economic and even geographic ones: “Several obstacles can prevent retailers from locating a new outlet in a food desert, such as higher distribution costs in low income areas due to poor transportation infrastructure, additional training cost from an unskilled labor pool, and increased security cost in areas with higher crime rates” (Bastian et al, 2017). In policy making, there is still some discrepancy and disagreement on the definition of food security and therefore what actually constitutes as a food desert (Hashim, 2015). Other barriers to ending food deserts include climate, for example, as Walker outlines in her article about Chicago’s food desert combat: “Community gardens? A great idea, but as Pinzino points out, ‘A garden in Chicago only gives fresh food 5 months out of the year.’ They needed to benefit as many people as possible year-round” (2012).

The policies that are in place to combat the issue of food deserts in urban areas have seen both successes and failures. The innovative methods of community gardens and mobile grocery stores have enabled areas to be provided with fresh food that they would not otherwise have access to. However, the inefficiency of policy-making and industry standards that make the cost of eating healthy more expensive cause any progress to be slowed. Additionally, the blurred lines of food security and what that means for different people as well as information available for urban areas and food deserts makes for difficult planning: “Food deserts are defined in terms of Census tracts. Tracts, in turn, correspond only loosely to what most people would recognize as neighborhoods. Moreover, the definition seems to imply that most people shop for groceries within the Census tract where they live, but in reality, fewer than one in five do” (Wright et al, 2016). Thus, better and more accurate information is needed. As far as combating food deserts in a nation constantly changing and striving for progress, more can always be done.

Alternatives

As discussed previously, there are a number of policies in place and programs acting to address the problems that food deserts bring to urban areas. Some common responses to combat food deserts include introducing grocery stores to underserved areas, and establishing community gardens or mobile markets for produce. However, some of these solutions do not work everywhere, due to geographical restraints and other feasibility logistics. However, new and more innovative strategies are constantly being developed that may prove to be more beneficial and potentially more effective than current regulations. The efforts to introduce grocery stores are not necessarily successful for a few

different reasons, including affordability issues and the unwillingness of many stores to open new storefronts in lower income areas due to heightened concerns with infrastructure and transportation. For the people living in these underserved areas, the continued consumption of nutritionally inadequate foods later causes many health problems, notably obesity. Treatments for the associated conditions are often paid for through the government and taxpayers, contributing to government expenditures.

Regarding policy, Edwards (2015) looks to public health and what can be done to establish a better approach to combat the problems of food deserts and associated obesity in the city of Chicago. The private reform efforts already made have seen some measures of progress to fight food inequality, though there is still a long way to go. Edwards suggests modeling new programs after other cities' success stories, like New York's food cart vendors or Philadelphia's Healthy Food Corners Initiative, along with improving zoning laws to reduce high concentrations of fast food establishments (2015). Similarly, other cities affected by food deserts can use the successful programs of other locations as models to address their food inequalities. The article does allude to the concerns of affordability for the introduction of grocery stores, particularly regarding Whole Foods: "Skeptics... questioned whether Whole Foods would be accessible to the community. 'Can they afford to spend $5 for a loaf of bread? Alternatively, can they afford to get four loaves for $5 when you have five kids at home?'" (Edwards, 2015).

To address these issues of affordability, Bastian et al. (2017) developed a prospective incentive plan for food retailers to reduce food deserts and therefore the associated health risks: "By applying a Principal-Agent economic model in conjunction with several mathematical programming models, not-for-profit agencies can effectively develop and implement subsidy-based incentive programs that seek to share financial risk with food retailers in exchange for the appropriate mix of new retail food outlets that will offer healthy food alternatives" (Bastian et al., 2017). This plan would theoretically reduce food costs for consumers and additionally act as preventative health measures that will, in the long term, further reduce medical costs that are often left to government expenses for the treatment of diabetes, heart conditions, and other food-related health issues.

On another note, Tomlinson (2015) proposes an idea that both addresses the need for fresh foods in urban areas, particularly those affected by food deserts, while also making use of vacant buildings often seen in cities: "One way to solve the problem of food deserts is to encourage the creation of aquaponics farms, an agricultural system that combines the practices of aquaculture and hydroponics within abandoned factory buildings" (Tomlinson, 2015). This model is a similar take on some of the urban farming and community gardens' responses to food

deserts but then further expands the level of output and efficiency. Approving the use of such aquaponics farming could have a positive effect on the availability of fresh foods as well as reduce the number of vacant and unused buildings that often fall into disrepair for lack of use.

To effectively enact relevant solutions to eradicate food inequality and urban food deserts, many different people need to be involved. The only way that this problem can truly be solved will be through a combination of policy change, company cooperation, and education about the issues. Citizens need to be informed of the issue as well as the associated health risks of poor diet. Education on the long-term effects and costs should be made readily available in a number of different forms. Many of the approaches adopted in different areas have made great strides in reducing food deserts in urban areas. The innovative efforts of cities' dedication to community gardens and other food sources can certainly be applied and prove successful in other areas. A more efficient system, like the aquaponics discussed by Tomlinson (2015), could certainly be even more effective than typical community gardens and urban farming. Economically, the incentive for food retailers will generate government and/or taxpayer costs in the short-run, but the returns for this expense will potentially lower medical costs by reducing obesity rates (Bastian et al., 2017).

The incentive plan for food retailers, while logically feasible, may have difficulties finding retailers willing to share the financial risks associated with coming to lower income areas. Additionally, as Ghosh-Dastidar et al. (2017) and Cummins et al. (2014) found, bringing new grocery stores to underserved areas does not always have much of an impact on the shopping habits of residents. Edwards (2015) aims to attack food deserts through policy-making, which can have drawbacks in the amount of time that it can take for regulations and programs to be passed and then take effect. For both Edwards' and Tomlinson's suggestions, these proposed models run into a handful of zoning issues with cities as well. Regarding aquaponics farming, while these models are very efficient and produce minimal waste, they do require a large amount of energy to run and are therefore very expensive to construct (Tomlinson, 2015). Justifying the cost of building these types of farms may be difficult for cities to invest in if another solution can be just as effective in its place. Any number of the proposed solutions could prove to be effective, and likely even more so in combination. More research and analysis into the predictions of each potential method can be conducted to more accurately project the economic costs and returns, for policy, farming or even incentives and determine the effectiveness of any or all adjustments. Nevertheless, all of the simulations can only be guesses at potential progress. Truly determining the success of any of these proposed measures to eradicate food deserts cannot be established until implementation and effects can be observed.

The process of urbanization in its expansion to the outer circles has created many food deserts throughout the nation, limiting millions of individuals' access to healthy foods. While not always considered as a high priority issue, the effects of malnutrition caused by food deserts and inadequate diets can lead to long-term health problems such as obesity, diabetes, and heart disease. Both food deserts and the associated health issues disparately affect minorities and those living in impoverished areas. The short-term costs of providing access to and education about necessary diet changes would potentially offset the future long-term medical costs for individuals and government. With growing concerns for health and economics, many cities have made successful strides in combating food deserts, such as establishing community gardens and urban farming or introducing mobile produce stores and affordable grocery markets in underserved areas. Some methods have proven more successful than others, but often facing difficulties with zoning legislation or the affordability of products for consumers. Alternative approaches may involve indoor aquaponics farms, economic incentives for storefronts, or the adjustment of other legislative policies. Progress toward eradicating food inequality is already in the making, but for further success, a combination of different proposed solutions will need to be implemented with cooperation of government, companies, and consumers on many different levels. Until the effects of such changes take place, the future of food deserts or lack thereof cannot truly be resolved.

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