THE POTENTIAL ROLE OF DOLLAR STORES IN ILLINOIS' UNEQUAL FOOD ACCESS

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Policymakers in Illinois have implemented numerous funding opportunities to increase access to healthy food (Connelly, 2023; Healthy Food Program Development Act, 2023). At the same time, the number of dollar stores exploded across the state (Athiyaman et al., 2019). Municipalities in other states have expressed concerns about the expansion of dollar stores and their effect on supermarkets, even banning them from their communities (Mitchell & Donahue, 2018). Using data from the American Community Survey (ACS) and Esri, we explore the relationship between dollar stores and supermarkets as well as additional factors that play a role in food access, including poverty, race/ethnicity, and education. We suggest that state policymakers consider the role that dollar stores could play to increase access to healthy food for millions of Illinoisans.

FOOD INSECURITY IN ILLINOIS

In 2020, more than one million Illinoisans experienced food insecurity, with more than half a million in Cook County alone (Feeding America, n.d.; Hake et al., 2022). This is an estimated 8.3% of all Illinois residents. Importantly, the issues in healthy food access are not limited to urban areas. When examining Supplemental Nutrition Assistance Program (SNAP) benefits, the Food Research and Action Center found that their use was highest in rural communities and small towns (Illinois Commission to End Hunger, 2021). These rural areas have rates higher than the state average and higher than metropolitan areas. Additionally, while every county in Illinois is affected by food insecurity, the rates are higher for people of color, children, seniors, and those with disabilities (Illinois Commission to End Hunger, 2021). In 2020, 19% of Black Illinoisans and 14% of Hispanic Illinoisans experienced food insecurity (Feeding America, n.d.).

Inequity in food access was exacerbated by COVID-19 (Illinois Commission to End Hunger, 2021). This increase and the accompanying additional strain on the food industry has drawn the attention of politicians. In the February 2023 State of the State Address, Governor JB Pritzker proposed the Illinois Grocery Initiative (Connolly, 2023). The initiative is a plan to invest $20 million to open

more grocery stores in underserved communities with the goal of reducing food deserts. Governor Pritzker also proposed an additional $2 million for buying produce from local farms. Further, in 2022, he signed Public Act 102-1049, the Healthy Food Program Development Act. The Act expands access to healthy food by providing funding to eligible retail outlets to offer healthier options through grants, loans, tax credits, equipment, and other assistance to grocery stores, farmers markets, corner stores, and other small food retailers.

DOLLAR STORE DESCRIPTION AND GROWTH

While food insecurity has been increasing, so too have the presence of dollar stores (Bhattarai, 2021). As of 2021, there were more than 34,000 dollar stores in the United States, an increase of more than 12,000 stores from a decade earlier (Mitchell & Donahue, 2018). Research from the Illinois Institute for Rural Affairs estimates that as of 2017, more than 1,000 dollar store chains have spread across Illinois (Athiyaman et al., 2019). Importantly, these stores are driven by demand. *Consumer Reports* estimates that 88% of Americans shop at a dollar store, at least sometimes, with no decline expected (Vines, 2021). Dollar stores have been capitalizing on the COVID-19 pandemic as well as on increased food prices due to inflation (Bhattarai, 2021). Large increases in company stock prices reflect the enormous growth in the number of stores over the last 20 years (NASDAQ, 2022a; NASDAQ, 2022b). This is all despite supply chain issues, news of rodent infestations at warehouses, and labor disputes (Bisaha, 2022; Holpuch, 2022; Repko, 2021).

There is a robust debate surrounding the role that dollar stores play in communities but even more specifically in disadvantaged communities (Caoui et al., 2022). Proponents argue that dollar stores offer consumers additional choices, which are particularly needed in communities with limited food options (Caoui et al., 2022; Shrestha, 2016). Because of their small footprint and ability to open so many locations, dollar stores are a convenient option, and their prices are lower than their competitors. Dollar stores also allow for quick in-and-out shopping without large parking lots or large floor plans. Lastly, they offer jobs in communities that often lack sufficient employment opportunities.

Opponents contend that dollar stores divert needed revenue from local grocery stores and supermarkets, which eventually leads to grocery store closures and lowers access to fresh food. Further, while dollar stores do sell smaller sized items, many of these end up costing the customer more per unit than a larger

volume of the same items purchased from another store (Shrestha, 2016). Lastly, research has shown that while dollar stores do offer jobs, they are often minimum wage with precarious scheduling (Vargas, 2021).

DOLLAR STORE RESEARCH

With their major recent growth, there has been a greater scholarly focus on dollar stores (e.g., Caoui et al., 2022; Chenarides et al., 2021; Marchesi et al., 2023). Much of this research focuses on the options that are available within the stores themselves and dollar stores' effect on grocery stores and health outcomes (e.g., Caoui et al., 2022; Caspi et al., 2017a; Sharkey et al., 2013). Caspi and colleagues (2017a; 2017b) studied the prices and purchases made at dollar stores and found that none of the dollar stores in their study offered fresh produce and that all other basic foods were more expensive than at supermarkets. Despite this finding, they also found that the most common reason for customers to shop at a dollar store was because they believed the stores offer "good prices" (Caspi et al., 2017a, p. 2591). While they didn't find a significant difference in the total spent at different types of stores, they did find that the dollar store customers purchased the most caloric food and the most sugar-sweetened beverages. Racine et al. (2016) found that no dollar stores offered fresh fruits and vegetables, but they did offer healthier staples such as rice, beans, and whole wheat bread. Frozen fruits and vegetables, milk, and frozen ground beef were available at some stores but not all.

Research also focuses on the local competition between dollar stores and supermarkets and grocery stores (Caoui et al., 2022; Marchesi et al., 2023; Chenarides et al., 2021). Caoui et al. (2022) examines the expansion of dollar stores starting in 2008. They find that dollar stores offer strong competition for grocery stores, which leads to a decline in the number of grocery stores and a decline in the amount of healthy produce that low-income families purchase. Similarly, Marchesi et al. (2023) find that independent grocery stores are 2.3% more likely to close when a dollar store opens in the area. They find that the grocery store experiences almost 6% lower sales with the dollar store opening. Additionally, they find that the likelihood of grocery stores closing is three times higher in rural areas than other spaces.

Chenarides and colleagues (2021; 2022) find varying effects. For example, Chenarides et al. (2022) find that a dollar store's entrance in the community is not associated with supermarkets exiting the retail space or with areas that are

categorized as "low access and low income," but they did find that once a dollar store was in the area, a supermarket was less likely to open. They also find that dollar stores are most common in non-metro areas. In a study of Texas, Chenarides et al. (2021) examine the relationship between small retail format stores — like dollar stores — and large stores. They find that dollar stores may actually serve as a complement to larger retail format stores while hindering the profit of other similarly sized stores. This means that dollar stores may threaten other small format stores but may actually increase the profitability of larger stores in the area.

MUNICIPAL AND COUNTY POLICIES

Some municipalities and counties are concerned about the expansion of dollar stores and have enacted different policies to slow their growth (Mitchell et al., 2023). Since 2018, at least 50 local governments have passed laws aimed at curbing their expansion (McCarthy et al., 2022). These restrictions started in 2016 in Kansas City, Kansas, and have spread across the United States to other cities, including Cleveland, Ohio; New Orleans, Louisiana; and Tulsa, Oklahoma (Brown, 2022). In 2019 and 2020 alone, 25 cities enacted restrictions on dollar stores (Dabney & Daigle, 2020). The majority of these policies were implemented in majority non-white communities with poverty rates higher than the national average (McCarthy et al., 2022). All were in the South or the Midwest.

Different localities have tried to curb dollar store growth in different ways. Some cities, like Cleveland, have enacted a moratorium on dollar stores, meaning that there is a ban on rezoning or permit applications for the stores (McCarthy et al., 2022). Some of these laws included exceptions if the store agreed to offer a certain amount of fresh food. Other cities, such as Fort Worth, Texas, require special exceptions for dollar stores, which often include proposed locations being a certain distance from other stores and a requirement that there be a specific number of healthy products (McCarthy et al., 2022). Some municipalities have prohibited the use of any land for dollar stores while others have created specific districts where dollar stores cannot open. For example, Birmingham, Alabama, created a Healthy Food Overlay District that devised stricter standards for new properties in the district specifically related to its food environment (McCarthy et al., 2022).

Through an analysis of the laws and their preambles, as well as other relevant documents such as committee reports or meeting notes, McCarthy et al. (2022) find that these policies are aimed at six specific concerns. First, they are focused on the unhealthy food options that dollar stores offer. Second, municipalities are focused on increasing the options in their local food environment. Third, they contend that these laws help bolster businesses that are already in the local economy. The previous two aims are specifically related to concerns that dollar stores will eliminate grocery stores or stop them from entering the market. The fourth concern is for community safety around the stores. There is evidence that dollar stores may increase crime in the surrounding areas (Dabney & Daigle, 2020). The final two concerns are the stores' appearance and the labor opportunities provided to the community. Critics note that the stores need fewer employees than supermarkets and that the major dollar stores are publicly held corporations that do not return money back to the community.

Given the previous research on the vast food insecurity in Illinois and the competing research about dollar stores, our research questions are as follows: (1) How many Illinoisans have access to dollar stores and supermarkets and does this differ for rural and urban residents? (2) What predicts access to dollar stores and supermarkets for rural communities? (3) What predicts access to dollar stores and supermarkets for urban communities?

DATA AND METHODS

DATA

Locations of dollar stores and supermarkets were obtained from Esri's Business Analyst 2022 U.S. Data Update. Demographic data came from the U.S. Census Bureau American Community Survey (ACS) 2015-2019 five-year estimates.

MEASURES

Dollar stores are limited to the "big three" chains: Dollar Tree, Dollar General, and Family Dollar. There is a small number of independently owned stores that would be difficult to disaggregate from the chain stores. Supermarkets collected include all local, regional, and national supermarket chains (including Walmart stores with groceries). This allowed us to differentiate between smaller grocery stores and larger supermarkets, which are typically used to define food deserts (Raja et al., 2008; Walker et al., 2010). The difference in distance between the nearest dollar store and the nearest supermarket to each block group population

centroid is used as a measure of access. Median household income derived from ACS captures income reported within the last 12 months. This variable is logged in order to maintain similar scales across variables. Unemployment and public assistance measure the percentage of the block group that is not currently employed or receiving public assistance respectively. Race/ethnicity was limited for this study to the census categories of percentage white and non-white. Because federal policy defines Hispanic not as a race but as an ethnicity, Hispanic identification is included as its own variable. Education is two measures, one of the percentage of a block group over age 25 that has a high school diploma and one of the percentage that has at least some college. This includes those with an associate's degree, bachelor's degree, and master's degree or professional degree.

ANALYTICAL STRATEGY

For the examination of Illinoisans' access to dollar stores, we used service-area modeling of block groups. To accurately assess accessibility, service areas were determined using travel along the street network rather than circular Euclidean buffers. This method allowed us to estimate the number of people served within a one-mile distance from the block group weighted population centroid for urban areas and 10 miles for rural areas (United States Department of Agriculture (USDA) Economic Research Service, 2022). These are the distances determined by the USDA to designate areas of low access to healthy foods. Ordinary Least Squares (OLS) regression models that predicted the difference between the distances to the nearest dollar store and supermarket allowed comparison of access to dollar stores and supermarkets, taking into account the supply and demand factors. We used the same measures for both urban and rural models. Additional testing was performed to determine if the effect size varied significantly between the urban and rural models.

RESULTS

Table 1 offers the descriptive statistics for our sample. The results show the average for each of the variables and indicate whether there is a significant difference between the average for rural and urban block groups. Figures 1 and 2 show the geographic distribution of the "Big 3" dollar stores and supermarkets across the state.

Table 2 shows Illinoisans' access to dollar stores and supermarkets. Figures 1 and 2 show a spread across the state. Our research shows that around three-

quarters of all Illinoisans have access to dollar stores and supermarkets. When this is split by rural and urban block groups, there are larger differences. For example, 96% of Illinoisans in rural communities have access to dollar stores with about 30% less having access to supermarkets. For urban communities, around 45% of Illinoisans have access to both supermarkets and dollar stores. Figures 3, 4, and 5 indicate that various counties have different amounts of stores located in different areas. For example, Cook County has a much larger spread of stores than Hamilton County. Interestingly, in areas that are more densely populated, there are both supermarkets and dollar stores; but in areas with smaller populations, there is no supermarket. For example, Hamilton County has no supermarket but is served by three dollar stores.

In addition to exploring the amount of access in different areas of the state, we also examined the factors that predict this access. Table 3 shows the results of the OLS regression models that examine factors in predicting the differences in distance between the nearest dollar store and the nearest supermarket when controlling for various other factors. This analysis was split with rural and urban samples. Further tests were completed to determine whether there is a

TABLE 1

DESCRIPTIVE STATISTICS

	RURAL BLOCK GROUPS MEAN (SD)	URBAN BLOCK GROUPS MEAN (SD)
Median Household Income	$69,803.87 ($24,956.06)	$76,288.26 ($40,942.49)
Percentage on Public Assistance	0.104[a] (0.091)	0.153 (0.155)
Percentage Unemployed	0.047[a] (0.047)	0.069 (0.080)
Race/Ethnicity		
Percentage White	0.934[a] (0.112)	0.652 (0.295)
Percentage Hispanic	0.040[a] (0.074)	0.182 (0.237)
Education		
High School	0.230[a] (0.097)	0.217 (0.121)
More than High School	0.428[a] (0.230)	0.338 (0.135)

[a]*Indicates a significant difference between urban and rural.*

TABLE 2

ILLINOISANS' ACCESS TO DOLLAR STORES AND SUPERMARKETS BY RURAL AND URBAN BLOCK GROUPS

	RURAL (WITHIN 10 MILES)	URBAN (WITHIN 1 MILE)
Dollar Store Access	1,824,705	4,878,883
Percentage Access	96.13%	45.11%
Supermarket Access	1,268,597	4,861,098
Percentage Access	66.83%	44.94%

TABLE 3

OLS REGRESSION MODELS OF THE DIFFERENCE IN DISTANCE TO NEAREST DOLLAR STORE VS. SUPERMARKET BY RURAL AND URBAN

	RURAL (N=1,703)		URBAN (N=8,173)	
VARIABLES	**ZERO-ORDER COEF. (SE)**	**FULL MODEL COEF. (SE)**	**ZERO-ORDER COEF. (SE)**	**FULL MODEL COEF. (SE)**
Median Household Income	3.834*** (0.325)	1.922*** (0.458)[b]	0.668*** (0.034)	0.336*** (0.049)
Percentage Public Assistance	-10.115*** (1.233)	-5.647*** (1.562)[b]	-1.618*** (0.123)	-0.074 (0.183)
Percentage Unemployed	-4.828* (2.442)	2.196 (2.490)[b]	-1.452*** (0.065)	0.420 (0.281)
Race/Ethnicity				
Percentage White	-4.500*** (1.011)	-3.484** (1.140)[b]	0.065 (0.066)	-0.459*** (0.079)
Percentage Hispanic	7.854*** (1.531)	4.847** (1.650)[b]	0.235** (0.082)	0.832*** (0.088)
Education				
High School	-11.239*** (1.147)	-4.493** (1.539)[b]	-3.009*** (0.157)	-0.574* (0.238)
More Than High School	9.005*** (0.819)	2.300 (1.328)[b]	1.789*** (0.082)	1.601*** (0.161)
Constant		-20.542*** (5.113)		-4.200*** (0.544)

**p<0.05, **p<0.01, ***p0.001*

[b] *Indicates a significant difference in the coefficients between rural and urban.*

FIGURE 1

GEOGRAPHIC DISTRIBUTION OF ILLINOIS BIG THREE DOLLAR STORES

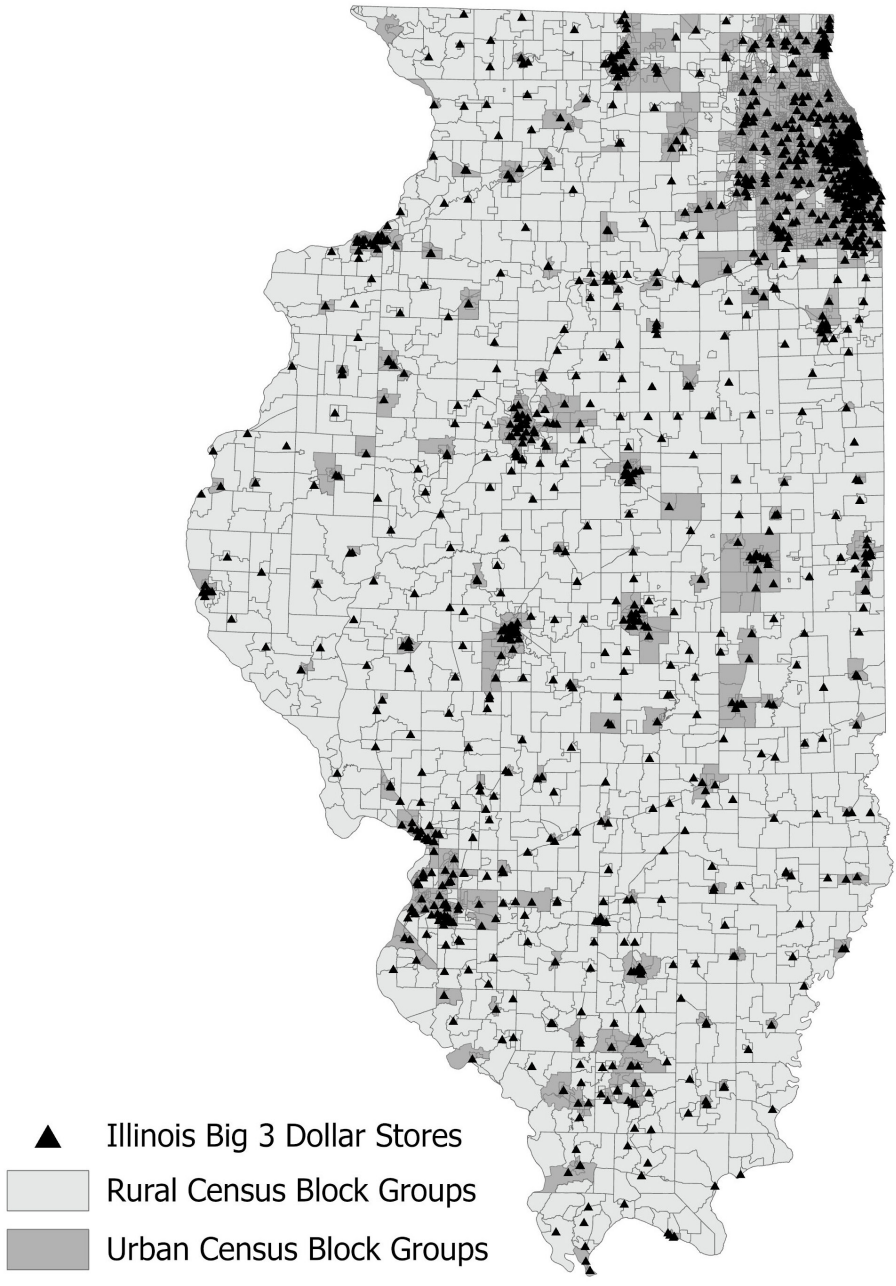


FIGURE 2

GEOGRAPHIC DISTRIBUTION OF ILLINOIS SUPERMARKETS

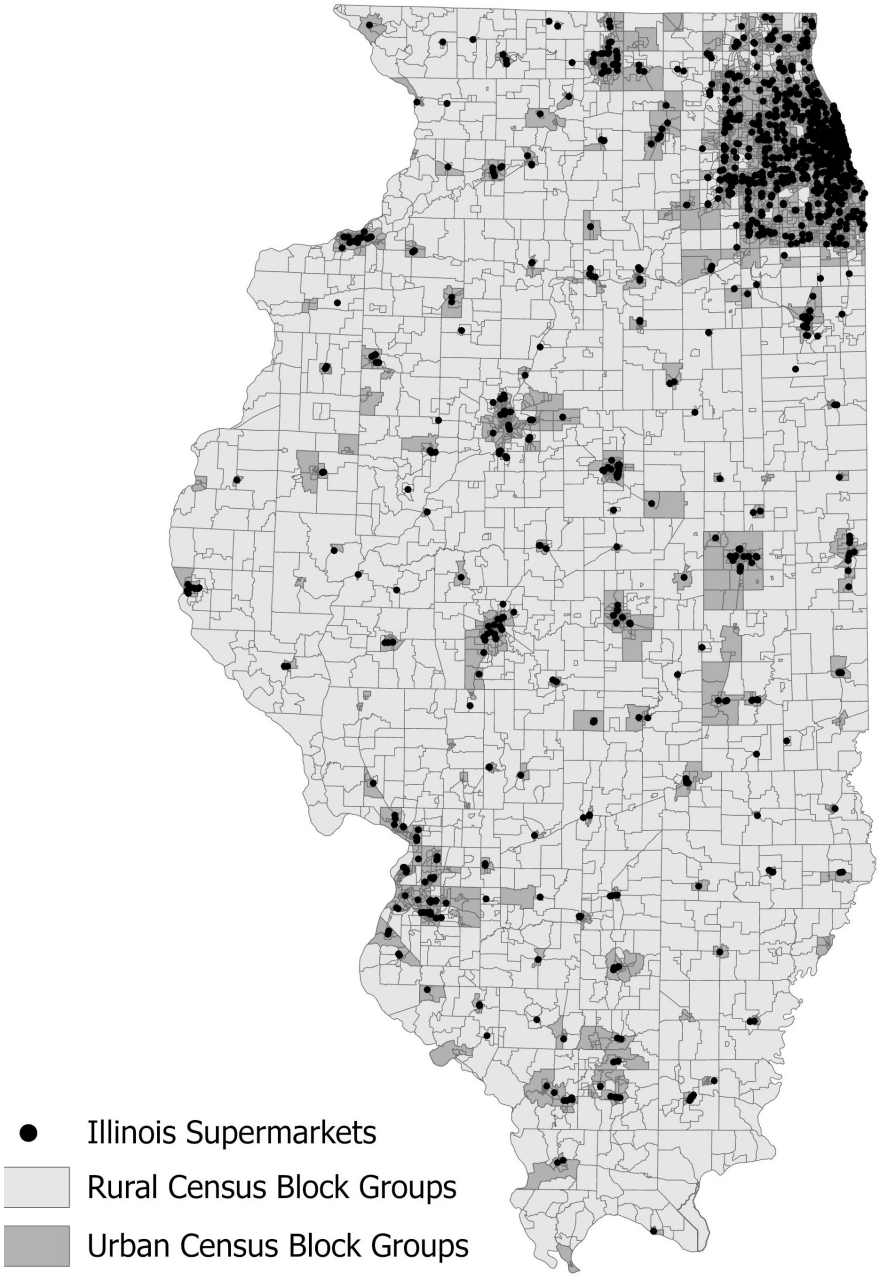
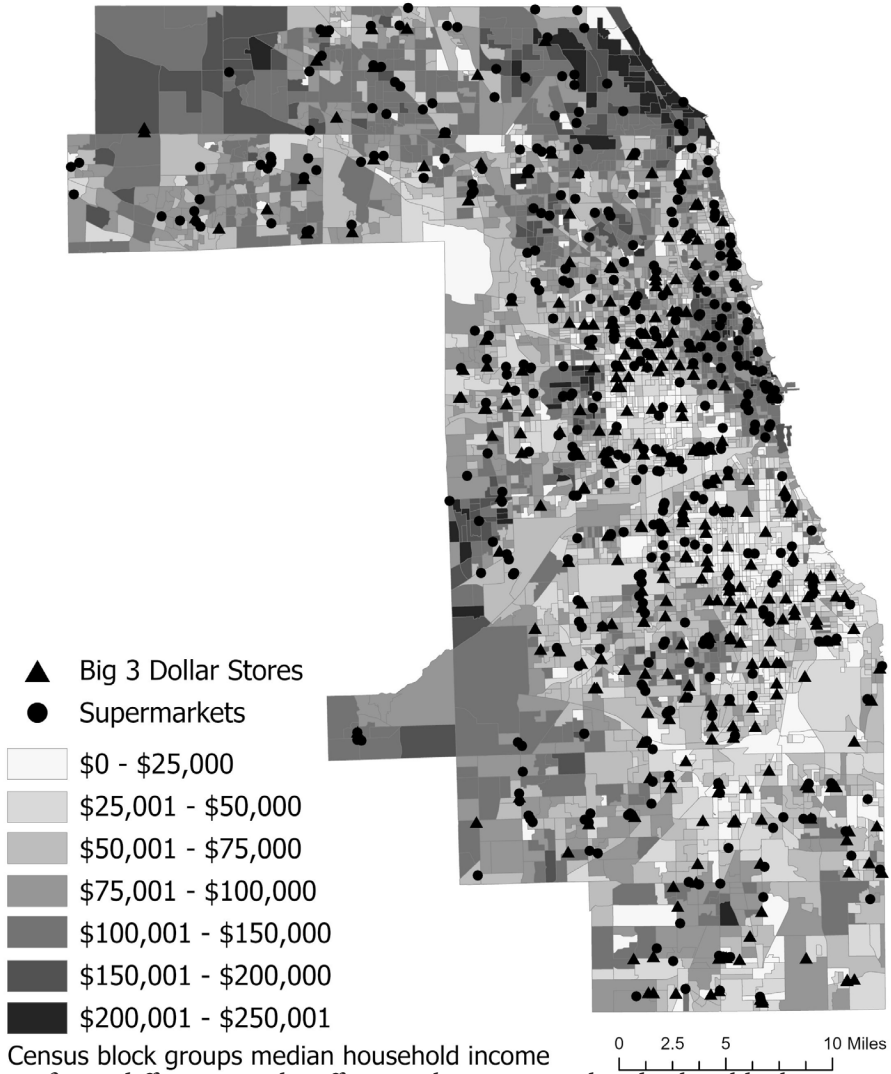


FIGURE 3

COOK COUNTY SUPERMARKETS AND BIG THREE DOLLAR STORES



significant difference in the effect size between rural and urban block groups.

FIGURE 4

MCLEAN COUNTY SUPERMARKETS AND BIG THREE DOLLAR STORES

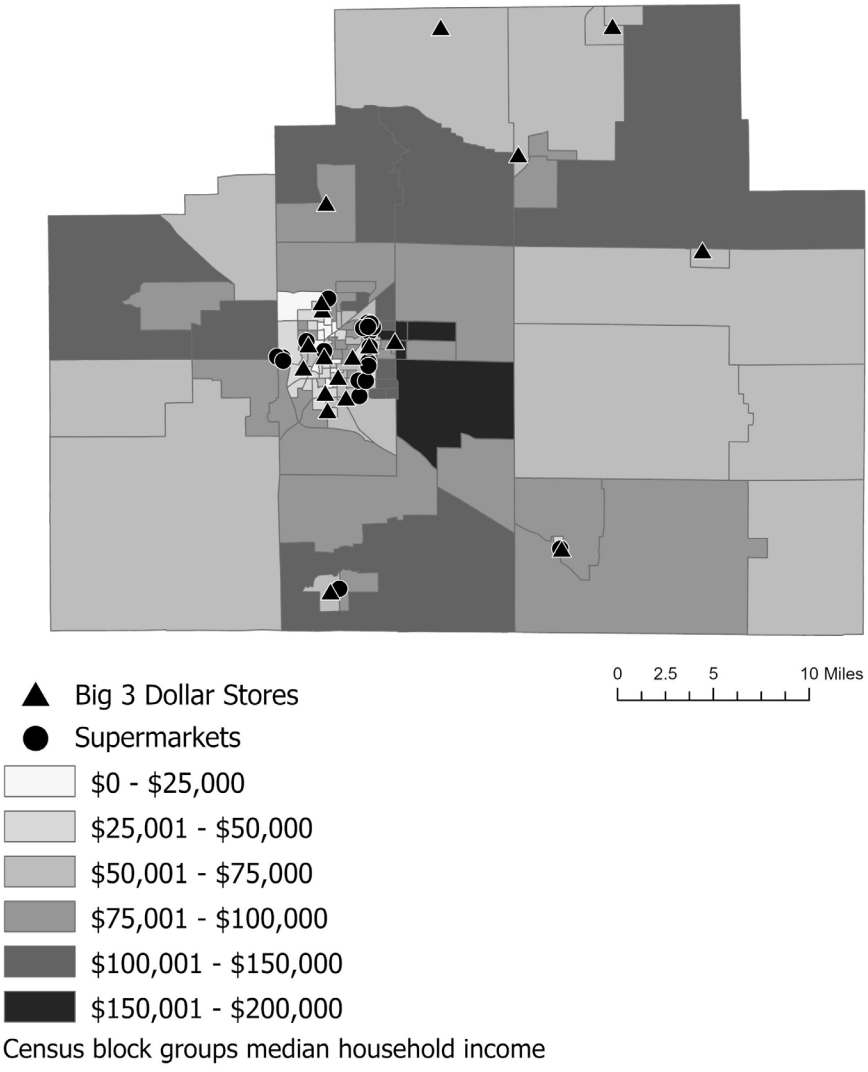
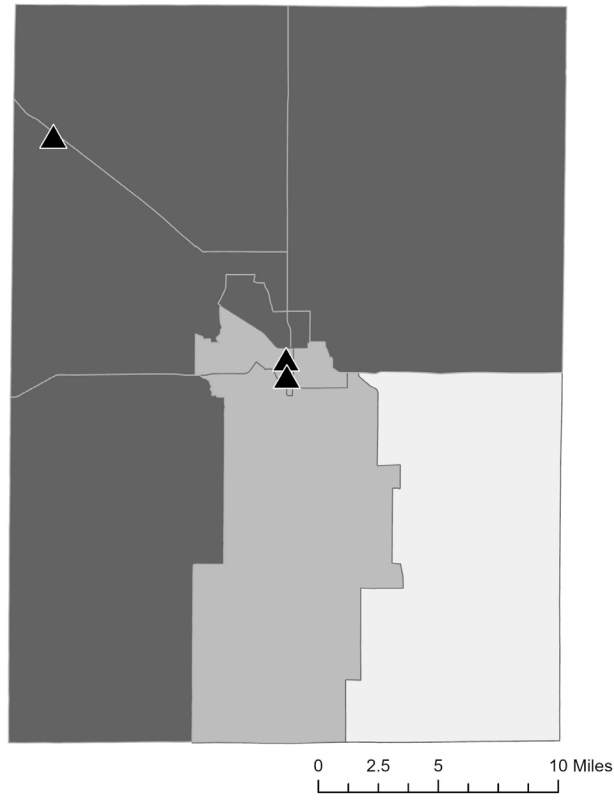


FIGURE 5

HAMILTON COUNTY BIG THREE DOLLAR STORES



Census block groups median household income

Note: There are no supermarkets in Hamilton County

RURAL FINDINGS

At the bivariate level, we find that for each percentage increase in those on public assistance and those unemployed, the difference in the distance between dollar stores and supermarkets decreases by 10.115 miles and 4.828 miles respectively. This indicates that block groups with higher rates of public assistance and unemployment are nearer to a dollar store than a supermarket. This is similar when examining the percentage of people who identify as white and the percentage of those with a high school diploma. Having more than a high school diploma and higher percentages of Hispanic populations are predictors of being nearer a supermarket.

When looking at the full model, the results are similar to the previous analysis with the expectation of the percentage of unemployment and having more than a high school degree, both of which disappear. Model 2 adds in race/ethnicity. Net of other factors, white populations predict being nearer a dollar store while larger Hispanic populations predict being closer to a supermarket. Lastly, we find that for each percentage increase of those with a high school diploma, the block group is 4.493 miles closer to a dollar store than a supermarket.

URBAN FINDINGS

In the full model, there are no significant effects of public assistance and unemployment in urban areas when accounting for additional supply and demand factors. Results show that as median household income increases, supermarkets are nearer than dollar stores. Similarly, as the percentage of people identifying as Hispanic increases, supermarkets are nearer than dollar stores, but the opposite is true for the percentage of people identifying as white. We found that as the percentage of those with a high school degree increases, dollar stores are nearer, but the opposite is true for the percentage of those with more than a high school degree. While the effects are in the same direction for urban and rural areas, there is a significant difference in the size with each variable.

DISCUSSION

With high rates of food insecurity throughout the state, we aimed to examine the role of one particular food outlet, the dollar store (Feeding America, n.d.; Hake et al., 2022). Today, there are nearly the same number of dollar stores as there are supermarkets across Illinois. Our findings showed that

almost three-fourths of the state's population has access to dollar stores (where "access" is used as defined by the USDA). Dollar stores have the potential to impact the availability of healthy food for a large proportion of Illinoisans.

The discussion surrounding food environments often focuses around disentangling the effects of race/ethnicity and poverty (Moore & Diez Roux, 2006; Powell et al., 2007). When accounting for race/ethnicity, the effect of household income and public assistance remains significant. Race/ethnicity are also significant even when accounting for poverty measures, like household income, public assistance, and unemployment. These findings indicate that both race/ethnicity and poverty are important factors when considering food access in both urban and rural areas. While these findings hold in both community types, the effects are significantly larger for rural communities. This leads us to ask further questions about the processes at play in urban and rural communities separately.

Based on our findings, we believe that state and local governments can play a constructive role in increasing access to healthy food for all Illinoisans. The Healthy Food Program Development Act stipulates that funding is available for a variety of food outlets, including "other small food retailers," which is defined as "a small business that is not a grocery store." We encourage policymakers to hold robust conversations about whether or not to allow dollar stores to apply for available funding.

There is already evidence that dollar stores' spatial distribution can be used in a way to support public health goals. For example, in 2021, during the COVID-19 pandemic, the Virginia Department of Health partnered with Dollar General to provide locations for vaccine distribution. They used Dollar General's footprint in rural areas to offer convenient locations to underserved populations. Also, while ultimately not carried out, the Centers for Disease Control and Prevention was in conversation to offer the vaccine at Dollar Generals throughout the United States, similar to Kroger and Publix (Ellis, 2021; Virginia Department of Health, 2021).

Dollar General and Family Dollar have also been experimenting with increasing their healthy options (Meyersohn, 2021). As of 2021, Dollar General offered produce at 1,300 of its 17,000 locations. While this represents a small percentage overall, the company is working to add produce to 10,000 more stores in the future. Family Dollar (owner of Family Dollar and Dollar Tree)

also began to offer fruits, vegetables, and meat. Much of this is done through the addition of coolers (Raugust, 2022).

The examples above notwithstanding, corporate ownership structure of the dominant dollar store chains presents a challenge to Illinois' state-sponsored approach. Corporate entities would likely have to be incentivized to make the changes necessary to upgrade the standards of food available. The companies themselves have endured years of criticism concerning their roles in food inequity, which some argue has led to the increase in healthy foods on offer today. Legislators have shown that they are willing to offer creative initiatives related to food access, as seen in the recently passed laws. With this in mind, we encourage policymakers to expand the discussion of where healthy options could be made available to include dollar stores. While there are mixed findings regarding their effects, there is no denying that dollar stores regularly reach millions of Illinoisans who lack access to affordable, healthy food options.

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REFERENCES

Athiyaman, A., Merrett, C., & Olupona, T. (2019, Fall). Dollar stores in Illinois: Trading areas, consumer behavior, and impacts on commercial structure and incumbent retailers. *Rural Research Report*, 29(1), 1-12. https://iira.org/wp-content/uploads/2023/10/RRR_Dollar_General_2019_final.pdf

Bhattarai, A. (2021, August 20). Booming business at dollar stores shows the widening gulf between haves and have-nots during pandemic. *The Washington Post*. https://www.washingtonpost.com/business/2021/08/20/growing-number-americans-are-relying-dollar-stores/

Bisaha, S. (2022, September 3). Dollar store workers in the South have a labor movement. Just don't call it a union. *NPR Weekend Edition Saturday*. https://www.npr.org/2022/09/03/1120473763/dollar-stores-labor-unions-workers-wages-organizing

Brown, W. (2022, April 20). As dollar stores proliferate food deserts, some communities push back. *Eater*. https://www.eater.com/23026173/dollar-store-general-food-deserts

Caoui, E. H., Hollenbeck, B., & Osborne, M. (2022, June 22). The impact of dollar store expansion on local market structure and food access. [USDA working paper]. https://dx.doi.org/10.2139/ssrn.4163102

Caspi, C. E., Lenk, K., Pelletier, J. E., Barnes, T. L., Harnack, L., Erickson, D. J., & Laska, M. N. (2017a). Food and beverage purchases in corner stores, gas-marts, pharmacies and dollar stores. *Public Health Nutrition*, 20(14), 2587-2597. https://doi.org/10.1017/S1368980016002524

Caspi, C. E., Pelletier, J. E., Harnack, L. J., Erickson, D. J., Lenk, K., & Laska, M. N. (2017b). Pricing of staple foods at supermarkets versus small food stores. *International Journal of Environmental Research and Public Health*, 14(8), 915-927. https://doi.org/10.3390/ijerph14080915

Chenarides, L., Cakir, M., & Richards, T. J. (2022). Dollar store entry. [Selected poster prepared for presentation at the 2022 Agricultural & Applied Economics Association Annual Meeting, Anaheim, CA; July 31-August 2]. https://ageconsearch.umn.edu/record/322100

Chenarides, L., Cho, C., Nayga Jr., R. M., & Thomsen, M. R. (2021, September). Dollar stores and food deserts. *Applied Geography*, 134(3), 1-24. https://doi.org/10.1016/j.apgeog.2021.102497

Connolly, D. (2023, February 20). Governor JB Pritzker proposes Illinois Grocery Initiative. WCIA. https://www.wcia.com/news/state-news/governor-j-b-pritzker-proposes-illinois-grocery-initiative/

Dabney, D., Daigle, L. E., & Eichinger, M. (2020). Evaluation of small box discount retailers and negative outcomes in unincorporated DeKalb County. https://www.dekalbcountyga.gov/sites/default/files/users/user3566/Small%20Box%20Discount%20Retail%20Store%20(SBDR)%20Report.pdf

Ellis, R. (2021, March 21). CDC in talks with Dollar General to expand vaccinations. WedMD News Brief. Retrieved June 16, 2022, from https://www.webmd.com/vaccines/covid-19-vaccine/news/20210312/cdc-in-talks-with-dollar-general-to-expand-vaccinations

Feeding America. (n.d.). Food insecurity among overall (all ages) population in Illinois. Retrieved April 25, 2023, from https://map.feedingamerica.org/county/2020/overall/illinois

Hake, M., Engelhard, E., & Dewey, A. (2022, July). Map the meal gap 2022: A report on county and congressional district food insecurity and county food cost in the United States in 2020. Feeding America. https://www.feedingamerica.org/sites/default/files/2022-09/Map%20the%20Meal%20Gap%202022%20Report_0.pdf

Healthy Food Program Development Act, Illinois Public Act 102-1049. (2023). https://www.ilga.gov/legislation/publicacts/fulltext.asp?Name=102-1049

Holpuch, A. (2022, May 19). Family Dollar to close warehouse after rodent infestation. *The New York Times*. https://www.nytimes.com/2022/05/19/business/arkansas-family-dollar-closing.html

Illinois Commission to End Hunger. (2021, March). From food insecurity to food equity: A roadmap to end hunger in Illinois. Retrieved April 25, 2023, from https://static1.squarespace.com/static/603fc10fa2120f0be59e5d86/t/604693ade576e13daf9d9fcc/1615238085448/From+Recovery+to+Resilience.pdf

Marchesi, K., Lopez, R., & Steinbach, S. (2023, January). Dollar store expansion, food retail competition, and rural employment. [Invited paper prepared for presentation at the ASSA 2023 Annual meeting, January 6-8]. https://ageconsearch.umn.edu/record/329895

McCarthy, J., Minovi, D., & Singleton, C. R. (2022, July). Local measures to curb dollar store growth: A policy scan. *Nutrients*, 14(15), 3092-4005. https://doi.org/10.3390/nu14153092

Meyersohn, N. (2021, June 2). Dollar stores are starting to offer fresh food after years of criticism. CNN Business. https://www.cnn.com/2021/06/02/business/dollar-general-family-dollar-fresh-food/index.html

Mitchell, S., & Donahue, M. (2018, December 6). Dollar stores are targeting struggling urban neighborhoods and small towns. One community is showing how to fight back. Institute for Local Self-Reliance. https://ilsr.org/dollar-stores-target-cities-towns-one-fights-back/

Mitchell, S., Smith, K. & Holmberg, S. (2023, March). The dollar store invasion: Communities are in revolt, but the chains' predatory tactics also call for federal action. Institute for Local Self-Reliance. https://cdn.ilsr.org/wp-content/uploads/2023/01/ILSR-Report-The-Dollar-Store-Invasion-2023.pdf

Moore, L. V., & Diez Roux, A. V. (2006, February). Associations of neighborhood characteristics with the location and type of food stores. *American Journal of Public Health*, 96(2), 325-331. https://doi.org/10.2105/AJPH.2004.058040

NASDAQ. (2022a). Dollar General Corporation Common Stock (DG). Retrieved May 31, 2022, from https://www.nasdaq.com/market-activity/stocks/dg/historical

NASDAQ. (2022b). Dollar Tree Common Stock (DLTR). Retrieved May 31, 2022, from https://www.nasdaq.com/market-activity/stocks/dltr/historical

Powell, L. M., Slater, S., Mirtcheva, D., Bao, Y., & Chaloupka, F. J. (2007, March). Food store availability and neighborhood characteristics. *Preventive Medicine*, 44(3), 189-195. https://doi.org/10.1016/j.ypmed.2006.08.008

Racine, E. F., Batada, A., Solomon, C. A., & Story, M. (2016, October). Availability of foods and beverages in Supplemental Nutrition Assistance Program-authorized dollar stores in a region of North Carolina. *Journal of the Academy of Nutrition and Dietetics*, 116(10), 1613-1620. https://doi.org/10.1016/j.jand.2016.03.014

Raja, S., Ma, C., & Yadav, P. (2008, January). Beyond food deserts: Measuring and mapping racial disparities in neighborhood food environments. *Journal of Planning Education and Research*, 27(4), 469-482. https://doi.org/10.1177/0739456X0831746

Raugust, K. (2022, March/April). Dollar stores and fresh produce: A winning strategy? *Produce Blueprints*. https://apps.bluebookservices.com/BBOS/LearningCenter/BP/March%202022/eBook/index.html

Repko, M. (2021, August 26). Deep discounters like Dollar Tree get hit, as they juggle supply chain costs and price-sensitive customers. CNBC. https://www.cnbc.com/2021/08/26/deep-discounters-like-dollar-tree-get-hit-as-they-juggle-supply-chain-costs-and-price-sensitive-customers.html

Sharkey, J. R., Dean, W. R., Nalty, C. C., & Xu, J. (2013, January). Convenience stores are the key food environment influence on nutrients available from household food supplies in Texas border colonias. BMC Public Health, 13(45), 1-8. https://doi.org/10.1186/1471-2458-13-45

Shrestha, S. (2016). Dollars to dimes: Disparity, uncertainty, and marketing to the poor at U.S. dollar stores. *International Journal of Cultural Studies*, 19(4), 373-390. https://doi.org/10.1177/1367877913515869

United States Department of Agriculture Economic Research Service. (2022, December 9). Food access research atlas. [Data set]. Retrieved June 12, 2023, from https://www.ers.usda.gov/data-products/food-access-research-atlas/

Vargas, T. L. (2021, February). Consumer redlining and the reproduction of inequality at Dollar General. *Qualitative Sociology*, 44(3), 205-229. https://doi.org/10.1007/s11133-020-09473-w

Vines, B. (2021, October 6). The truth about those dollar stores: Dollar General, Dollar Tree, Family Dollar, and others offer low prices but also raise concern in communities that feel choked by them. *Consumer Reports*. https://www.consumerreports.org/dollar-stores/the-truth-about-those-dollar-stores/

Virginia Department of Health. (2021, November 3). VDH Partners with Dollar General to provide COVID-19 vaccinations at select stores. https://www.vdh.virginia.gov/news/vdh-partners-with-dollar-general-to-provide-covid-19-vaccinations-at-select-stores/

Walker, R. E., Keane, C. R., & Burke, J. G. (2010, September). Disparities and access to healthy food in the United States: A review of food deserts literature. *Health & Place*, 16(5), 876-884. https://doi.org/10.1016/j.healthplace.2010.04.013

Zhang, M., & Ghosh, D. (2016, February). Spatial supermarket redlining and neighborhood vulnerability: A case study of Hartford, Connecticut. *Transactions in GIS*, 20(1), 79-100. https://doi.org/10.1111/tgis.12142