The Market Inscribed Landscape: City and Industry Causes of Food Deserts

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CHAPTER I

INTRODUCTION

The Problem of Food Deserts

The term 'food desert' is meant to conjure an imagery of barren plains without a supply of food. Thinking of a non-industrialized aesthetic, one can plainly view an area without a source of food as a vast area of dirt and rock in which little to no plant life exists. In an industrialized urban landscape we no longer see barren stretches of land denoting a loss of food - areas with plentiful foods are housed in buildings surrounded by concrete. It is the lack of housing for the distribution of foods - typically supermarkets - that now represents this barren plain. Residents of these food deserts must travel to more plentifully stocked areas of the city in order to find food.

This is not to say there is an objective lack of food in food deserts - the term denotes a valuation of types of 'food' as 'food'. One can say the term food desert is moralizing - claiming certain foods are not acceptable for consumption and defining acceptable diets. The conception of a 'food desert' is most strongly associated with access to fruits and vegetable (likely tied into the lack of intake of fruits and vegetables in American culture). According to Ford et al. (2008) the term food desert was introduced in the U.K. in the early 1990’s to describe geographical areas with limited access to retail grocery stores. A common definition of food deserts is posited by Furey et al. (2001) as an area where people do not have easy access to healthy, fresh foods, particularly if they are poor and have limited mobility. ‘Food’ is then defined as what is deemed healthy by the researcher and exists largely at retail supermarkets.
Regardless, this moralizing sits on top of a reality of the consequences of diet on health and the role of the geographic proximity to certain types of food on diets. While diet is indeed cultural, there are health related repercussions of diet (though these consequences of diet also depend on the way one lives). If we take health as the morally prominent motivator for food choice, lacking geographic proximity to a supermarket (and thus access to fruits and vegetables and other perishables) is a serious problem in American society. In fact, research has shown that residents of areas without supermarkets tend to have worse health outcomes including higher rates of obesity, cardiovascular disease and diabetes and lower rates of fruit and vegetable intake (Franco et al. 2009; Michimi and Wimberly 2010; Moore et al. 2008; Morland, Wing and Diez Roux 2002; Morland and Evenson 2009; Powell et al. 2007) and must pay more for (especially healthy) food (Chung and Myers 1997; Kaufman et al. 1997).

The importance of the presence of supermarkets even extends beyond the health outcomes of residents. Being one of the largest employers in the U.S., supermarket placement patterns can help to advance or disable the job prospects of nearby residents. Given that retail has replaced manufacturing as the largest employer of non-skilled workers in the U.S. (Strait 2001) supermarket placement patterns may contribute to the ‘spatial mis-match’ problem noted in urban sociology (the mismatch between the location of low skilled workers and low-skilled jobs). Supermarkets also provide public spaces for the maintenance of informal social ties (Oldenburg 1989; Blanchard et al. 2003). Further magnifying the lack of space to promote social cohesion, supermarkets are a symbol of livability (Eisenhauer 2001) and, similar to other signs of physical disorder, lacking supermarkets may help to stigmatize the area for both residents and non-residents.
A large and growing public health literature on food deserts and the ‘food environment’ (not to mention the number of grants given to this topic) displays the prominence of the problem of access to healthy foods (including access to supermarkets) in the scientific community (c.f. Beaulac, Kristjansson, & Cummins, 2009; Larson, Story, & Nelson, 2009; Lovasi et al., 2009; Moore & Diez Roux, 2006; Morland et al., 2002; Powell et al., 2007). Increased concerns over obesity have largely contributed to the importance of the problem of food deserts. According to the American Medical Association, one of the single greatest actions the United States can take to affect health outcomes is to reduce childhood obesity. In fact, in 2010 the office of the Surgeon General called the levels of obesity among Americas the most important public health issue of our time. This is why Michelle Obama, the Clinton Global Initiative and hundreds of other organizations have taken obesity as their primary concern. While many take obesity as an individual level problem – in particular by attempting to change the dietary behaviors of individuals and families – others look for contextual solutions to curb obesity. Examining the ‘food environment’ and ‘food deserts’ is one way public health researcher can examine ways to curb obesity at a contextual level.

Along with obesity, others have taken the problem of food deserts as a matter of social justice. Some view the lack of health foods in neighborhoods as a form of structural violence – where the lack of health foods in a neighborhood does violence to the bodies of neighborhood residents. Similarly, ‘food justice’ implies that access to healthy food is not even a question of economics (i.e. can a supermarket turn a profit) but a fundamental right to nutrition (c.f. Alkon and Norgaard 2009). Concerns over inequalities in the ‘food environment’ have fostered non-profit (e.g. Social Compact, Market Makeovers, Nashville Mobile Market to name a few of the
hundreds nationally) and city governments (e.g. Birmingham, Detroit, L.A.) efforts to bring supermarkets (or other sources of healthy foods) to underserved areas.

Currently, the correlates of supermarket locations are generally agreed upon (c.f. Beaulac, Kristjansson, & Cummins, 2009; Larson, Story, & Nelson, 2009; Lovasi et al., 2009). Supermarkets are less common (and food deserts are more likely to exist) in urban areas with higher rates of poverty, higher proportions of African Americans, and lower average incomes (Algert, Agrawal, & Lewis, 2009; Lee & Lim, 2009; Moore & Diez Roux, 2006; Morland et al., 2002; Powell et al., 2007; Zenk et al., 2005). Much of this research on supermarket location implies that the correlates of supermarket placement are their causes: food deserts exist due to the demographics of the area. Unfortunately, these public health studies of neighborhood based problems ignore the long theoretical and empirical history of ‘the neighborhood’ and spatial disadvantage (and spatial resource disparities) in urban sociology. Despite the expansive literature on ‘food deserts’ and massive history of urban sociological research and theory, these two literatures have evaded each other. Instead of elaborating ‘food deserts’ as a more general (urban) problem of neighborhood resource disparities, the (largely public health) ‘food desert’ literature has tended to take the correlates of supermarket location as their cause. A major contribute of this dissertation is to incorporate urban sociological theory into the study of food deserts in order to better understand the causes of the presence of supermarkets in neighborhoods (or lack thereof).
Urban Sociology and Neighborhood Resources

Robert Park and Ernest Burgess (as well as Louis Wirth, John Gibbs St. Claire Drake and Horace Cayton among others) provided the foundation for urban sociology in the early 20th century, propagating the ‘urban ecological’ theory of cities and neighborhoods (c.f. Sampson et al. 2002). In essence, urban ecologists take the way urban landscapes are spatially differentiated/integrated by various demographics – and how these differentiated/integrated ‘little worlds’ maintain or disrupt social order – as paramount to understanding cities and social life more generally. The ‘functional integration’ of neighborhoods is reflected in the material and symbolic resources of neighborhoods. Properly functioning neighborhoods produce resources for neighborhood residents such as local amenities, organizations and businesses including supermarkets. In this sense, the material and symbolic resources of neighborhoods (e.g. supermarkets) derive from the proximate ‘functioning’ of neighborhoods. Following the urban ecological theory, the ‘neighborhood effects’ model of explanation (c.f. Sampson, 2012) has become one of the more influential models in the social sciences (especially since the 1990s): neighborhood demographics (e.g. concentrated poverty) lead to negative or positive neighborhood characteristics (e.g. a lack of supermarkets) which affects neighborhood resident (e.g. obesity). This ‘neighborhood effect’ understanding of neighborhoods resources (and their effect on residents) largely corresponds with the (public health) food desert literature.

Research on neighborhood resource disinvestment during the ‘urban crisis’ has largely corresponded with the urban ecology (and ‘neighborhood effects’) explanation of neighborhood resources. During the ‘urban crisis’ of the 1970s and 1980s “(a) urban poverty changed over the 1970s and 1980s and (b) it became more concentrated” (Small and Newman, 2001). Perhaps the most popular explanation for changes in urban areas from 1970 to 1990 is William Julius
Wilson’s ‘deinstitutionalized ghetto’ thesis (Wilson, 1987; Small and McDermott, 2006 coined the ‘deinstitutionalized ghetto’ name). Wilson (1987) cites Drake and Cayton (1945) to argue that, prior to 1970, predominantly African American neighborhoods had sufficient resources, including a great many organizations, due to the fact these neighborhoods were class integrated. Then, a combination of black middle income geographic dislocation from lower income blacks (due to increased social and political opportunities for middle income blacks) and the exodus of the manufacturing jobs from inner-cities during the 1970s and 1980s led to a dramatic increase in concentrated inner-city poverty (see also Johnson and Oliver 1991, 1992; Kasarda 1989). The flight of manufacturing jobs and middle income African Americans away from low income African American neighborhoods created ‘socially disorganized’ neighborhoods characterized by concentrated poverty; the functional break down of these neighborhoods with concentrated (especially African American) poverty led to an exodus of the symbolic and material resources needed by neighborhood residents (e.g. an exodus of supermarkets).

Massey and Denton (1993) argue that Wilson’s argument places too little emphasis on the unique plight of African Americans. According to Massey and Denton (1993), African Americans are unique in that they cannot assimilate into white neighborhoods due to a historical “series of well-defined institutional practices, private behaviors and public policies by which whites sought to contain a growing urban black population” (10). This inability to assimilate into other neighborhoods is unique for African Americans and leads to an extreme level of social isolation and resource deprivation. Given the inability to spatially integrate – and the discrimination that leads to a comparative lack of material and symbolic resources provided to African Americans – African Americans neighborhoods (regardless of income) fair worse than other neighborhoods. In this sense, the continued isolation of African American neighborhoods is
an important component of continued neighborhood disadvantage since 1970 (including a lack of supermarkets).

These theories differently argue how the demographics of urban neighborhoods changed during the ‘urban crisis’ of the 1970s and 1980s. Wilson’s (1987) “deinstitutionalized ghetto” thesis places its focus on the concentration of poverty in (especially African American) urban neighborhoods. Massey and Denton (1993) focus on the continued significance of African American segregation from whites affecting neighborhood resource disparities. Yet both of these theories, by focusing on how demographics changed (or did not change), view the demographics of neighborhoods as the causes of neighborhood resource disparities. Whether the demographics are African Americans or poverty, both theories agree that the demographic make-up of a neighborhood leads to particular outcomes for this neighborhood: The lack of material and symbolic resources (e.g. supermarkets) poor and racial minority neighborhoods experience are argued to result from the proximate lack of ‘social order’ of ‘self-contained little worlds’.

**Institutional and City Moderation of Neighborhood Resources**

Recent research has shown organizational and city dynamics moderate the relationship between neighborhood demographics and the characteristics (especially the resources) of neighborhoods (e.g. Marwell, 2007; Small and McDermott, 2006). This research points out that substantial variations in resources exist across contexts and across time for neighborhoods of similar demographics. The fact that, for example, low income areas lack organizations is not

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1 This understanding of neighborhoods is also suggested by ‘neighborhood effect’ studies (c.f. Sampson et al. 2002) and policies suggesting mixed-income development projects to solve the problems of low income areas similarly assume (c.f. Hyra, 2013).
necessarily due to the proximate ‘functioning’ of the neighborhood or the effect of the neighborhood having mostly low income individuals; rather, the lack of organizations is an effect of city and organizational dynamics influencing the conditions of these neighborhoods.

This dissertation develops and empirically demonstrates two new theories of how cities and industries moderate the relationship between the demographics and the presence of supermarkets in zip codes. First, this dissertation shows how ‘new institutionalism’ (c.f. Greenwood, 2008; Thornton, Ocasio, Lounsbury, 2012) can be used to investigate the causes of, and possible solutions to, the scarcity of organizations (and the resources they provide) in low income areas. It is argued that historically contingent institutional logics are the context in which neighborhoods are perceived, evaluated and acted upon by organizations. Specifically, this dissertation will show that the current institutional logic of the grocery industry, beginning around the mid-1970s, devalues low income consumers and leads to fewer supermarkets in low income areas compared to the institutional logic of the 1930s through early 1970s.

These results suggest that changes in the demographics of cities during the ‘urban crisis’ of the 1970s and 1980s is an insufficient explanation for changes in the placement of supermarkets. The ‘neighborhood effect’ of a lack of supermarkets on residents health, at least for low income areas, may be better understood as an effect of the historically contingent institutional logic of the grocery industry. In the same vein, instead of changing neighborhood demographics (c.f. Hyra, 2013), it is suggested that policy makers may be better served by modifying (or creating policy regarding) the institutional logic of the grocery industry to bring supermarkets into underserved economically disadvantaged areas.

Second, this dissertation will show that minority competition theory helps explain the negative relationship between the percentage of African Americans and the presence of supermarkets in a zip code. I do not have enough of a sample of cities to investigate city level
variations in the relationship between supermarkets and demographics during the ‘urban crisis’. Instead, I use a national sample of cities in 2010 to demonstrate how cities moderate the relationship between the presence of supermarkets and the percentage of African Americans in a zip code. Using 2010 U.S. national data, the results will indicate that at low levels of African Americans in a city there is low ‘perceived threat’ and low inequality in the placement of supermarkets; further, as the percentage of African Americans in the city increases, supermarkets are increasingly located away from African Americans; however, at high levels of African Americans in a city, the increasing unequal distribution of supermarkets away from African Americans declines – theoretically due to the cumulative effect of discrimination and the increased ability to attenuate discrimination when numbers are high.

Summary of Dissertation

In essence, this dissertation shows that the urban ecology and ‘neighborhood effects’ explanation of neighborhood resource disparities (c.f. Sampson, 2012) can be better understood as ‘city and/or industry’ effects. Empirically, I elaborate this theory by examining the extra-local causes of disparities in the presence of supermarkets across zip codes. Much of the (public health) research on supermarket location implies that the correlates of supermarket placement are their causes: food deserts exist due to the demographics of the area. It is surprising this previous research seems content to simply conclude ‘these types of neighborhoods will just be underserved by supermarkets unless their demographics are changed’. Many times – instead of investigating causes of relationships – public health researchers simply take neighborhood relationships as a given (or natural) and suggest possible interventions to curb these relationships. Yet, in this case, without an understanding of the broader causes of supermarket
location we are left without lasting avenues to combat the problem of being underserved that some neighborhoods experience (i.e. only ‘band-aid’ approaches). Would we attempt to eliminate diabetes by looking at the demographics of those with diabetes and suggest treatment? Or would we examine and intervene in the underlying reason why certain types of people tend to more often get diabetes? Why is it that we tend to take the former approach for public health research and interventions into neighborhoods? Few studies examine potential variations in the correlates of supermarket location patterns (e.g. variation across historical or city contexts); however, understanding why variations in the correlates of supermarket location occur (e.g. variation across historical or city contexts) should elaborate the causes of, and possible solutions to, underserved neighborhoods.

To show how institutional (institutional logics) and city (minority competition) dynamics moderate the relationships between the number of supermarkets in a zip code and the percent in poverty and percent African American of the zip code, this dissertation is organized as follows. In chapter 2 I show how urban ecological theory and the ‘neighborhood effects’ model of explanation have been used to understand the material and symbolic resources of a neighborhood (including the presence of supermarkets). I then present two new theories of how (1) institutional environments and (2) cities moderate the relationship between neighborhood demographics and the location of supermarkets. In chapter 3 I look for historical changes in the relationships between the number of supermarkets and the percentage of African Americans and economic disadvantage of zip codes from 1970 to 1990. I find that while the percentage of African Americans was consistently negative, the relationship between economic indicators and the presence of supermarkets changed from 1970 to 1990. In chapter 4 I show how a shift in the institutional logic of the grocery industry - from an 'economy of scale' to a 'mix margin
merchandising' logic - explains the change in the relationship between zip code economic indicators and supermarkets from 1970 to 1990. Finally, though the relationship between the percentage of African Americans and supermarkets did not change over time, in chapter 5 I show that this relationship varies across cities. I use minority competition theory to show how the percentage of African Americans in a city moderates (in a U-shaped pattern) the relationship between the percentage of African Americans and the number of supermarkets of the zip codes of cities. I conclude (chapter 6) by summarizing the results, their theoretical and policy implications and suggestions for future research.
CHAPTER II
CITY AND INDUSTRY CAUSES OF FOOD DESERTS

Neighborhood Effects

Robert Park and Ernest Burgess (as well as Louis Wirth, St. Claire Drake and Horace Cayton among others) provided the foundation for urban sociology in the early 20th century, propagating the ‘urban ecological’ theory of cities and neighborhoods (c.f. Sampson et al. 2002). In the early 20th century urban scholars – later known as 'urban ecologists' or scholars of the 'Chicago School' – attempted to "understand the emergent social processes found in the newly large, dense, and heterogeneous modern city" (McQuarrie & Marwell, 2009: 250). Common to sociological theory at the time, these scholars focused on how the city created, maintained or disrupted the social organization of human interaction (i.e. social order). This empirical and theoretical work on 'the city' (especially Chicago) established the neighborhood as a fundamental unit of analysis. According to Park (1925: 10, 40) "where individuals of the same race or of the same vocation live together in segregated groups, neighborhood sentiment tends to fuse together with racial antagonism and class interests...The processes of segregation establish moral distances which make the city a mosaic of little worlds". In essence, urban ecologists take the way urban landscapes are spatially differentiated/integrated by various demographics – and how these differentiated/integrated ‘little worlds’ maintain or disrupt social order – as paramount to understanding cities and social life more generally.

The functional integration of neighborhoods (spatially concentrated areas of those with similar social positions) is reflected in the material and symbolic resources of neighborhoods. Properly functioning neighborhoods produce resources for neighborhood residents such as local
amenities; for example, the presence of organizations – such as supermarkets – derives from, and helps to promote, the social organization of a neighborhood. For urban ecologists, organizations play important roles in how neighborhoods properly function, "but mostly by furthering or articulating a distinctive neighborhood social order" (McQuarrie & Marwell, 2009: 250). In this sense, the material and symbolic resources of neighborhoods (e.g. supermarkets) derive from the proximate ‘functioning’ of neighborhoods. Similarly, the absence of resources in a neighborhood is viewed as a symptom of a lack of neighborhood social order.

The ‘neighborhood effect’ line of research stems from urban ecological understanding of neighborhoods. Here, neighborhood attributes (especially neighborhood demographics) are viewed as providing (or failing to provide) material and symbolic resources to residents (which then have effects on neighborhood residents). This line of inquiry challenges methodological individualism, arguing that neighborhoods influence the outcomes of residents in ways that cannot be reduced to the characteristics of the residents themselves (Sampson, 2012). During the 1960s to 1980s the ‘neighborhood effects’ line of inquiry tended to focus on the structural dimensions of neighborhoods and their associated effects on the residents of these neighborhoods (Sampson et al., 2002). Most famously presented in the work of William Julius Wilson (e.g. 1987), a ‘risk-factor’ approach was used to present how neighborhoods effected residents (Sampson, 2012: 47). This risk-factor approach generally argued that ‘if you live in a neighborhood with X demographics, you were Y times more/less likely to have Z outcome’.

According to Sampson et al. (2002), there was a ‘process turn’ in the neighborhood effects literature in the 1990s. Criticisms of the neighborhood effects literature in the early 1990s (see especially Jencks and Mayer 1990) pointed out that “if growing up in a poor neighborhood mattered, intervening processes such as collective socialization, peer-group influence, and
institutional capacity were presumably part of the reason (Sampson et al. 2002: 443). Criticisms such as these launched a variety of studies attempting to describe the ‘black box’ of neighborhood effects: the processes and mechanisms that explain how and why the make-up of neighborhoods influenced the outcomes of residents in ways that cannot be reduced to the characteristics of the residents themselves. For example, in his 2012 book Sampson generally shows that “(a) (neighborhood demographics), notably but not only concentrated “structural disadvantage,” (b) affects contextual cultural (and material) conditions, notably but not only collective efficacy (and the presence of neighborhood amenities such as supermarkets), which then (c) affects individual responses, such as people’s experiences with and perceptions of crime and disorder” (Fischer, 2013). This is my use of the term ‘neighborhood effect’ in this dissertation: neighborhood demographics (e.g. concentrated poverty) lead to negative or positive neighborhood characteristics (e.g. a lack of supermarkets) which affect neighborhood residents (e.g. obesity); a graphical representation of this understanding of ‘neighborhood effects’ is presented in Figure 1.

The presence of organizations is one component of the mediating process (‘black box’) of how neighborhood demographics affect individual outcomes (Small & McDermott, 2006). According to Small and McDermott (2006: 1698) “one strand of the tradition of urban ecology was the social disorganization perspective (Shaw and McKay 1969), which, as part of a theory of cross-sectional neighborhood differences in crime, posited a relationship between neighborhood conditions and the presence of organizations and businesses. Poor, ethnically heterogeneous, residually unstable neighborhoods were unable to sustain businesses and organizations because they lacked economic stability and social organization”. In terms of neighborhood
effects, demographics effect the pull of organizations to a neighborhood which effect the resources needed by residents, and thus, can affect individual outcomes.

Until recently it has been largely assumed 'the market' explains the relationship between neighborhood demographics and the presence of organizations. Many scholars who make claims about the presence organizations generally assume the resources that can be extracted from neighborhoods (the ‘demand’ of aggregates of individuals) determine the resources supplied by organizations to these neighborhoods (the ‘supply to aggregates of individuals) (e.g. Wacquant, 2008 and especially Wilson, 1996). When investigated empirically, market-based studies take the demographic characteristics of neighborhoods as aggregates of consumers who have varying demands for goods and services (e.g. the food desert research described below). While mostly implicit in more recent ‘neighborhood effects’ studies, the idea that 'the market' affects the relationship between neighborhood demographics and the location of organizations has been explicitly stated by social disorganization theorist (e.g. Shaw and McKay 1969), retail economists (c.f. Brown 1993; Clarkson et al., 1996) and urban sociologists Wilson (1996) and Wacquant (2001; 2008).²

² Wacquant (2001; 2008) claims poor, predominantly African American (hyper) ghetto should be understood as a particular institution created after the 1970s that controls/subjugates poor African American populations. In this understanding poor, predominantly African American neighborhoods have similar characteristics and outcomes on neighborhoods residents across different contexts (in the United States). Conversely, I claim that these 'hyper-ghettos' have different characteristics and outcomes for residents across contexts (cities and institutional environments).
The Neighborhood Effect of Food Deserts

The presence of supermarkets in a neighborhood represents one of the mechanisms through which neighborhood demographics affect neighborhood residents. Supermarkets provide a variety of resources to communities. Supermarkets provide jobs to communities as one of the largest employers in the U.S. (Strait 2001). Supermarkets also can promote social cohesion by providing public spaces for the maintenance of informal social ties (Oldenburg 1989; Blanchard et al. 2003) and providing a symbol of livability (Eisenhauer 2001). Further, known colloquially as the ‘food desert’ literature, a great deal of research has shown that residents of areas without supermarkets (i.e. ‘food deserts’\(^3\)) tend to have worse health outcomes including higher rates of obesity, cardiovascular disease and diabetes and lower rates of fruit and vegetable intake (Franco et al. 2009; Michimi and Wimberly 2010; Moore et al. 2008; Morland, Wing and Diez Roux 2002; Morland and Evenson 2009; Powell et al. 2007; though see Boone-Heinonen and Shikany 2011).Exacerbating problems of access, those in areas with limited access to supermarkets pay more for food (Chung and Myers 1997; Kaufman et al. 1997). Concerns over inequalities in the ‘food environment’ have fostered non-profit (e.g. Social Compact, Market Makeovers, Nashville Mobile Market) and city government (e.g. Birmingham, Detroit, L.A.) efforts and have raised questions surrounding the issue of ‘food justice’ (Alkon and Norgaard 2009).

\(^3\) Food deserts are “areas where people do not have easy access to healthy, fresh foods” (e.g. Furey et al. 2001), but these food deserts tend to be operationalized as areas (especially zip codes) that lack supermarkets. The term ‘food desert’ is meant to conjure an imagery of barren plains without a supply of food. Thinking of a non-industrialized aesthetic, one can plainly view an area without a source of food as a vast area of dirt and rock in which little to no plant life exists. In an industrialized urban landscape we no longer see barren stretches of land denoting a loss of food - areas with plentiful foods are housed in buildings surrounded by concrete. It is the lack of housing for the distribution of foods - typically supermarkets - that now represents this barren plain. Residents of these food deserts must travel to more plenitfully stocked areas of the city in order to find food.
Currently, the correlates of supermarket locations are generally agreed upon (c.f. Beaulac, Kristjansson, & Cummins, 2009; Larson, Story, & Nelson, 2009; Lovasi et al., 2009). Supermarkets are less common (and food deserts are more likely to exist) in urban areas with higher rates of poverty, higher proportions of African Americans, and lower average incomes (Algert, Agrawal, & Lewis, 2009; Lee & Lim, 2009; Moore & Diez Roux, 2006; Morland et al., 2002; Powell et al., 2007; Zenk et al., 2005). Much of this research on supermarket location implies that the correlates of supermarket placement are their causes: food deserts exist due to the demographics of the area. It is surprising the previous research seems content to simply conclude ‘these types of neighborhoods will just be underserved by supermarkets unless their demographics (or the effects of demographics) are changed’. Many times – instead of investigating causes of relationships – public health researchers simply take neighborhood relationships as a given (or natural) and suggest possible interventions to curb these relationships. Yet, in this case, without an understanding of the broader causes of supermarket location we are left without lasting avenues to combat the problem of being underserved that some neighborhoods experience (i.e. only ‘band-aid’ approaches). Would we attempt to eliminate diabetes by looking at the demographics of those with diabetes and suggest treatment? Or would we examine and intervene in the underlying reason why certain types of people tend to more often get diabetes? Why is it that we tend to take the former approach for public health research and interventions into neighborhoods? Few studies examine potential variations in the correlates of supermarket location patterns (e.g. variation across historical or city contexts); However, understanding why variations in the correlates of supermarket location occur (e.g. variation across historical or city contexts) should elaborate the causes of, and possible solutions to, underserved neighborhoods.
Cities and organizations Moderate Neighborhood Effects

The issue of ‘neighborhood effects’ – at least the characteristics and effects of high poverty, high percent African American neighborhoods (i.e. ghettos) – was taken up in a ‘Symposium on the Ghetto’ (2008). Both Mario Luis Small and Herbert Gans argue that the concept of the Ghetto hides more that it elaborates about social phenomena. Small (2008) argues that the term ‘ghetto’, among other things, hides the heterogeneity of poor African American neighborhoods and tends to take the state as a homogenous force despite the variety of government interventions affecting low income areas across cities. To take this point more generally, the ‘neighborhood effect’ model tends to assume that spatial and temporal variations in the demographics of the landscape lead to similar spatial and temporal variations in neighborhood characteristics\(^4\) – including the presence of organizations.

Recent research has shown that the relationship between demographics and the presence of organizations is not necessarily affected by 'the market': variations in the presence of organizations exist across neighborhoods with similar 'demand' demographics. For example, Small and McDermott (2006) present a (city) ‘conditional perspective’ of organization placement patterns. Specifically, they argue that the relationship between the demographics and the number of organizations of a neighborhood is moderated\(^5\) by the characteristics of the city in which the neighborhood resides. Looking at 2000 national data, Small and McDermott (2006) show that the zip code placement patterns of 10 organizations (including supermarkets) in

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\(^4\) Among others, Burawoy et al. (2000), Gottdiene (1988), Hannerz (1992), Lloyd (2006) and Logan and Molotch (1987) – in their own way – all argue that urban ecology's "focus on local system obscures the importance of broader social and historical forces" (Lloyd, 2006: 31).

\(^5\) "A moderator variable is one that influences the strength of a relationship between two other variables, and a mediator variable is one that explains the relationship between the two other variables." (Baron and Kenny, 1986)
relation to the percent of people in poverty of the zip code depends on which region of the U.S. the city is in and the poverty rate of the city as a whole. This study empirically demonstrates that the relationship between demographics and the presence of organizations is not necessarily affected by 'the market'. Rather, city dynamics moderate the relationship between demographics (in this case poverty) and the presence of organizations. A graphical representation of this ‘city contingency model’ is presented in Figure 2. In this sense, the 'neighborhood effect' of living in poverty on resident outcomes related to lacking organizations may be better understood as a 'city effect'.

Similarly, scholars are beginning to seriously question the role of organizations in moderating neighborhood effects. For example, speaking of neighborhood effects, Herbert Gans (2009: 10) argues that “even in the very poorest areas, the deleterious effects of poverty are not caused by the neighborhood, but by institutions, most of them outside the neighborhood, that initiate or perpetuate poverty and conditions associated with it”. McQuarrie & Marwell (2009)

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6 Other theorists have rejected the urban ecological notion that cities are constructed through the natural competition of neighborhoods and focus on the city-level dynamics affecting neighborhoods. Logan and Molotch’s (1987) political economic theory of cities argues that when looking at the way land is dealt with we should not simply look at the demographics of the neighborhood but the specific interests associated with the neighborhood. In their theory, Logan and Molotch claim local elites with various interests (but a common interest in increasing the land value of the city) work in concert to increase the economic viability of a city. In terms of racially and economically segregated areas, then, we must ask about the interests involved (or not involved) in these areas. For instance, gentrification strategists, developers creating retail-centered areas, or those interested in dissuading the long-term costs of health care may all have interests in the way racially and economically segregated areas are invested in by businesses. Different cities have different interests involved in areas that may have similar demographics – it is the interests of city elites that are involved in these areas that, at the very least indirectly, determine supermarket location pattern.

7 The idea that the logic of industries affects space is also theorized by political economists. However, research and theory on the way economic logics affect space have focused on how labor is produced and exploited in space (e.g. Harvey, 1989; Krugman, 1991; Lloyd 2006) rather than how places for the exchange of goods are spatially organized. Theories of production in space see cities and businesses organized depending on how they produce goods and services
recently showed how research on ‘neighborhood effects’ (among other lines of urban scholarship) has viewed organizations as derivative rather than productive of urban social relations.  

Recent research and theory has shown that organizational dynamics moderate the relationship between economically disadvantaged areas and negative outcomes for its residents (e.g. Allard & Small, 2013; Gans, 2009; Marwell 2007; Also see Warren, 1963). A graphical representation of this ‘organizational contingency model’ is presented in Figure 3. For example, Marwell and McQuarrie (2013) argue that organizations can integrate – or fail to integrate – residents of a neighborhood. Similarly, Marwell (2007) shows how community based organizations - and especially the economic and political institutions with which they must contend – can moderate the effects of living in disadvantaged neighborhoods. Further, Small (2009) shows how organizations moderate the negative effects living in disadvantaged neighborhoods have on resident social networks. These studies of non-proximate forces affecting

rather than viewing the city as organized around the location of goods and services being exchanged. While the capitalist mode of production is indeed transparent in the urban landscape, we should not assume that the logic of locations of exchange (e.g. retail locations) necessarily follows the logic of locations of production (see e.g. David Ricardo vs. Karl Marx on this point). Perhaps a stronger critique of political economic theory is that it lacks the ability to investigate particular industries and businesses (McQuarrie and Marwell, 2009). Political economy claims historical epochs of capitalist accumulation to which all industries follow. Industries (and organizations) are seen as passive bystanders to grand logics of capital accumulation. I argue here that new institutionalism should be used to understand how institutional environments are productive in the spatial organization of places for the exchange of goods.

McQuarrie & Marwell (2009) then elaborate a structuration theory that includes both organizations and neighborhoods as mutually productive.

Organizations can also mediate neighborhood effects. That is, organizations can also explain the relationship between demographics and resident outcomes. For example, the presence of supermarkets can partly mediate (help explain) the relationship between neighborhood poverty and poor resident health. It has not been suggested the presence of supermarkets influences the strength of the relationship between neighborhood poverty and resident health (i.e. no one has argued there is a relationship between poverty and health independent from the presence of supermarkets, but this relationship is strengthened or weakened by the independent influence of the presence of supermarkets).
neighborhood relationships challenge the urban ecology and related ‘neighborhood effect’ models. The material and symbolic resources of neighborhoods (e.g. the presence of supermarkets) are not necessarily derivative of the proximate ‘functioning’ of a neighborhood. Neighborhood relationships are not self-contained but are moderated by extra-local factors. If the effect of neighborhood disadvantage on the outcomes of neighborhood residents depends on (non-proximate) organizational dynamics, we can hardly talk about these negative outcomes on residents as specifically neighborhood effects; rather, the impact of the neighborhood on residents may be better thought of as an ‘organizational’ effect.

The modified understanding of ‘neighborhood effects’ represented by this recent research - as moderated by cities and organizations - has important policy implications. Corresponding with the neighborhood effects model of explanation, Federal and State policy since the 1990s has tended to follow the market-driven explanation of neighborhood effects.\(^{10}\) If the problems of a neighborhood stem from concentrated disadvantage, the answer is to change the demographics of the neighborhood by promoting (or creating) a mixed-income environment (this ‘neighborhood effects’ understanding of policy interventions is depicted graphically in Figure 4). However, projects such as these (e.g. Hope VI, Empowerment Zone initiative) tend to promote gentrification (c.f. Hyra, 2013; Also see Deener, 2012; Zukin et al. 2009 for how class coded retail promotes gentrification). It is often the case that the truly disadvantaged do not benefit from the arrival of organizations in their communities, but are instead displaced. A city and organization moderation model of explanation would suggest policies that modify city and organization moderation model of explanation would suggest policies that modify city and

\(^{10}\) Sampson (2012) is a bit different in that he argues we should not necessarily move people (since this will hide temporarily hide the impact of neighborhoods) but create policies that facilitate open movement across neighborhoods or effect mediating processes of neighborhoods. I (and other city and organization moderation researchers) would instead argue that focusing on neighborhood dynamics misses the fact these dynamics are moderated by extra-local factors.
organization dynamics. This ‘organizational contingency’ understanding of policy interventions is depicted graphically in Figure 4. Instead of modifying neighborhood demographics, modifying organizational (or other non-proximate) causes of neighborhood organizational scarcity may prove a better solution; at the very least it would provide solutions that are focused on specific problems instead of a vague ‘general well-being’ of neighborhoods. More important though, by focusing on non-proximate causes instead of demographics causes, city and organization based policies would be much less likely to displace the existing residents of neighborhoods.


The neighborhood effects approach to explanation has also been used in studies of the changes in demographics that have occurred in urban areas from 1970 to 1990. Analogous to the urban ecological perspective, it has been largely assumed that historical variations in the demographics of neighborhoods corresponded with variations in resource deprivation. As Small and Newman (2001:24) point out, “most sociologists agree that (a) urban poverty changed over the 1970s and 1980s and that (b) it became more concentrated. But there are marked differences in how sociologists think about these two issues”.

Drake and Cayton (1945) were the first of the Chicago school to focus on the unique characteristics of African American neighborhoods. Drake and Cayton showed that African Americans could not assimilate into non-African American neighborhoods the way other races could. However, in the 1930s (in Chicago) African American neighborhoods were vertically integrated by class; this vertical class integration lead to ‘socially organized’ predominantly
African American neighborhoods with the associated material and symbolic resources needed by residents (e.g. the presence of businesses and other organizations). This was the first major study of African American neighborhoods since Dubois’s (2010 [1899]) study of Philadelphia. It was also one of the last sociological studies of African American neighborhoods until the late 1960s [expanding greatly after the mid 1980s, especially after Wilson (1987)].

Perhaps the most popular explanation for changes in urban areas from 1970 to 1990 is William Julius Wilson’s ‘deinstitutionalized ghetto’ thesis (Wilson, 1987; Small and McDermott, 2006 coined the ‘deinstitutionalized ghetto’ name). Wilson (1987) cites Drake and Cayton (1945) to argue that, prior to 1970, predominantly African American neighborhoods had sufficient resources, including a great many organizations, due to the fact these neighborhoods were class integrated. Then, a combination of black middle income geographic dislocation from lower income blacks (due to increased social and political opportunities for middle income blacks) and the exodus of the manufacturing jobs from inner-cities during the 1970s and 1980s led to a dramatic increase in concentrated inner-city poverty (see also Johnson and Oliver 1991, 1992; Kasarda 1989). The flight of manufacturing jobs and middle income African Americans away from low income African American neighborhoods created ‘socially disorganized’ neighborhoods characterized by concentrated poverty; the functional break down of these neighborhoods with concentrated (especially African American) poverty led to an exodus of the symbolic and material resources needed by neighborhood residents (e.g. an exodus of supermarkets).

Massey and Denton (1993) argue that Wilson’s argument places too little emphasis on the unique plight of African Americans. According to Massey and Denton (1993), African Americans are unique in that they cannot assimilate into white neighborhoods due to a historical
“series of well-defined institutional practices, private behaviors and public policies by which whites sought to contain a growing urban black population” (10). This inability to assimilate into other neighborhoods is unique for African Americans and leads to an extreme level of social isolation and resource deprivation. Even with increased poverty and middle income African American movement away from low income African Americans, there would not be such disadvantage without the fact that African Americans cannot integrate into White neighborhoods. Given the inability to spatially integrate – and the discrimination that leads to a comparative lack of material and symbolic resources provided to African Americans – African Americans neighborhoods (regardless of income) fair worse than other neighborhoods. In this sense, the continued isolation of African American neighborhoods is an important component of continued neighborhood disadvantage since 1970 (including a lack of supermarkets).

Quillian (1999) integrates the theses of Massey and Denton (1993) and Wilson (1987), showing that “in the 1970s and 1980s non-poor African Americans were moving into white areas fairly rapidly, as Wilson suggests. But the numbers of non-poor African Americans in white and non-poor areas have not increased much over time, as Massey and Denton (1993) have shown, because of the decline in white population in these neighborhoods (a likely cause of which is white flight)”. Quillian’s (1999) and Massey and Denton’s (1993) research of racial segregation slightly modify the “deinstitutionalized ghetto” thesis, claiming that along with the income level of the area, African American segregation remains a significant factor of the material and symbolic resources of a neighborhood (e.g. the presence of supermarkets).

These theories differently argue how the demographics of urban neighborhoods changed from 1970 to 1990. Wilson’s “deinstitutionalized ghetto” thesis places its focus on the concentration of poverty in (especially African American) urban neighborhoods. Massey and
Denton (1993) focus on the continued significance of African American segregation from whites affecting neighborhood resource disparities. Yet both of these theories, by focusing on how demographics changed (or did not change), view the demographics of neighborhoods as the causes of neighborhood resource disparities. Whether the demographics are African Americans or poverty, both theories agree that the demographic make-up of a neighborhood leads to particular outcomes for this neighborhood: The lack of material and symbolic resources (e.g. supermarkets) poor and racial minority neighborhoods experience are argued to result from the proximate lack of ‘social order’ of ‘self-contained little worlds’. More recent arguments of how cities and organizations moderate neighborhood effects would disagree – the relationship between neighborhood demographics (e.g. race or income) and neighborhood resources (e.g. supermarkets) varies depending on how cities and organizations affect these neighborhoods.

It is important to note that there was not an active research agenda negating the importance of cities and organizations on the resources of neighborhoods (though see Wacquant, 2008). Instead, urban sociologists have been much more concerned with why poor African American areas became or remained disadvantaged after the civil rights movement (e.g. Wilson 1987; Massey and Denton 1993); Similarly, more recent scholarship has focused on proving that 'place matters' because neighborhoods have distinct effects on individuals independent of the attributes of individuals, including why an individual chooses to live in a certain neighborhood (Sampson et al. 2002) or generally combating the dominance of methodological individualism (Sampson, 2012). The fact that neighborhoods with similar demographics may have different levels of resources depending on how they are acted upon by cities and organizations was just not an important topic: it was simply assumed that understanding the causes of demographic patterns and the ways neighborhoods independently effect individuals is primary to
understanding disparities in resources across neighborhoods (also see McQuarry and Marwell, 2009).

Yet this inattention to the moderating impact of cities and industries on neighborhood resource disparity is problematic. While concentrated poverty and racial segregation are in themselves important components of disadvantage (c.f. Sampson, 2012), organizations and cities can affect how resources are distributed across neighborhoods with similar demographics. Some poor and racial minority areas are better off than other areas due to the moderating impact of cities and organizations (Marwell, 2007; Small & McDermott, 2006; Small, 2009); in this sense, the lack of resources poor and racial minority areas experience may be less of a neighborhood effect and more of a city or organization effect. Studies of extra-local moderation should lead to more nuanced and, even better, more optimistic explanations of neighborhood resource disparities: neighborhoods with particular demographics are not doomed unless changed but can be ‘reinstitutionalized’ with city and organization based policies. This dissertation develops and empirically demonstrates two new theories of how cities and industries moderate the relationship between presence of supermarkets and the demographics (particularly the economics and percentage of African Americans) of a neighborhood.

New Institutionalism Moderates Neighborhood Effects

First, this dissertation suggests that ‘new institutionalism’ theory (c.f. Greenwood, 2008) should be used to investigate the causes of, and possible solutions to, the scarcity of organizations (and the resources they provide) in economically disadvantaged areas. New institutionalism points out that organizations do not operate independently but do so within an
institutional environment (such as an industry). In this institutional environment, organizations must take into account other organizations when acting in order to survive. Such actions include adhering to norms or establishing legitimacy within an institutional environment (DiMaggio & Powell, 1983).

As urban-oriented research has more recently demonstrated (e.g. Marwell 2007; Small, 2009), the interactions/relations of organizations moderate the operations and effects of organizations on neighborhoods; these interactions/relations can also include institutional environments (e.g. industries). It is suggested here that institutional environments moderate the scarcity of organizations within economically disadvantaged areas. A graphical representation of this ‘institutional environment contingency’ model of neighborhood effects is presented in Figure 6. Especially where organizational resources are concerned, organizations are not passive actors in the construction of neighborhoods (or derivative of the ‘functioning’ of such neighborhoods) (McQuarrie and Marwell, 2009); rather, institutional environments are the context in which the demographic attributes of neighborhoods are perceived, evaluated and acted upon by organizations.

The concept of an institutional logic (c.f. Thornton, Ocasio, Lounsbury, 2012) is used here to demonstrate how institutional environments moderate the relationship between neighborhood demographics and the presence of organizations. “Institutional logics are the socially constructed, historical pattern of material practices, assumptions, values, beliefs and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality” (Thornton and Ocasio, 1999:804).11

11The institutional logic model conceptualizes society as an inter-institutional system (Friedland and Alford, 1991). Thornton and Ocasio (1999) argue that institutional logics come together to
Variations in the way institutional logics are formed have implications for the operations of the actors within an institution environment (e.g. businesses within an industry). For instance, institutional logics can “influence how organizational actors perceive corporate policies, affecting firm-level adoption of policies and structures and field-level changes in prevailing organizational practices” (Zajac and Westphal, 2004:434). Organizational practices, influenced by historically contingent institutional logics, can explicitly or implicitly affect the ways in which neighborhoods are perceived, evaluated and acted upon by organizations.

The concept of an institutional logic is particularly appealing for historical studies of neighborhood effects (e.g. Rast 2012). A graphical representation of this ‘institutional logic / historical moderation model of neighborhood effects is presented in Figure 7. In studies of institutional logics, changes in the causes and effects of independent variables across time periods are used to demonstrate and analyze changes in institutional logics across these time periods (e.g. Thornton, Ocasio, Lounsbury, 2012; Thornton and Ocasio, 1999:807). As previously stated, William Julius Wilson’s (1996) ‘deinstitutionalized ghetto’ hypothesis assumes that neighborhood demographic changes caused changes in neighborhood resources over time – especially increased concentrations of poverty. The ‘neighborhood effect’ model of explanation would also predict that neighborhood demographic changes led to changes in the presence of organizations. Conversely, a study of institutional moderation would predict that the relationship between neighborhood demographics and neighborhood resources changed historically as the institutional logic of related institutions (e.g. industries) historically changed.

operate at the level of individuals, organizations, industries and society. My analysis focuses on the grocery industry; though I also indicate how society wide changes influenced the change in the institutional logic of this industry. Changes in the presence of organizations would then change resident outcomes, though I do not have the data to empirically examine this second component of the neighborhood effects model.
In this, researchers can examine whether relationships between neighborhood demographics and resources are stable over time (as would be predicted in the ‘neighborhood effects’ model and the deinstitutionalized ghetto thesis) or whether there are historically contingent institutional causes of historically contingent relationships between neighborhood demographics and resources. Examining supermarket location patterns over time, this dissertation hypothesizes the latter.

**Minority Competition Moderates Neighborhood Effects**

Second, this dissertation suggests that ‘minority competition’ theory (Blalock, 1967) should be used to investigate the causes of, and possible solutions to, the relationship between the presence of organizations and the percentage of African Americans in the neighborhood. As previously stated, following Drake and Cayton (1945) Wilson (1987) argues that prior to 1970 African American neighborhoods were not underserved by organizations due to the class integration of African American neighborhoods. Wilson then argues the exodus of the African American middle class from low income African Americans after the civil rights movement led to predominantly poor African Americans inner-city neighborhoods. In this, Wilson’s argument means that the percentage of African Americans in a neighborhood is only a meaningful neighborhood attribute when African Americans lack economic resources. Massey and Denton (1993) disagree with Wilson (and by extension Drake and Cayton) arguing that predominantly African American neighborhoods have/had fewer resources even when controlling for income. Massey and Denton (1993) show how (after 1900) the "black ghetto was constructed through a series of well-defined institutional practices, private behaviors and public policies by which
whites sought to contain a growing urban black population” (10). African Americans are unique in that they cannot assimilate into white neighborhoods due the historical and continued presence of institutional racism.

I follow Massey and Denton (1993) in taking the percentage of African Americans as an independent predictor of the presence of organizations. As others have shown (c.f. Beaulac, Kristjansson, & Cummins, 2009; Larson, Story, & Nelson, 2009; Lovasi et al., 2009), controlling for income, as the percentage of African Americans in a zip code increases there is a (statistically significant) decrease in the number of supermarkets in the zip code. However, following the ‘conditional perspective’ of neighborhood effects (e.g. Small and McDermott, 2006; Small, 2009) I argue that there are city level moderating effects on the relationship between the presence of organizations and the percentage of African Americans in a neighborhood. The historical and continued presence of institutional racism that leads to the scarcity of organizations in African American neighborhoods is moderated by city (racial) dynamics.

The ‘contingency theory’ of neighborhood effects suggests significant variation across cities in the ways supermarkets locate relative to the percentage African Americans in a neighborhood (see Figure 2 for a graphical representation of this model). Some cities may have no relationship or even a positive relationship between African Americans and supermarkets. Understanding variations between cities should help to illuminate city level policies that can alleviate disparities in the distribution of resource across neighborhoods that are simply due to

13 In large part, urban regime theory (Stone 1989) and urban political economy (Logan and Molotch 1987) ignore the independent effects of racial dynamics, viewing race as one component to consider in the pursuit of the economic interests of local elites who govern cities (Kraus 2004). As a group conflict theory in its own right, minority competition theory can be studied along with urban regime and urban political economy theories to investigate the unequal distribution of resources in cities across (racial) groups.
the number of African Americans in a neighborhood. In answering the ‘city contingency’
question, I hypothesize that ‘minority competition theory’ (Blalock 1967) helps explain how city
characteristics (specifically, the percentage of African Americans in the city) moderate the
relationship between the percentage of African Americans and number of supermarkets of a zip
code.

**Minority competition theory**

Massey and Denton (1993) argued that the ‘black ghetto’ - and the social isolation and
related spatial discrimination against African Americans - was an intentionally developed
construct that persists today. Minority competition theory (Blalock, 1967) is similar in that it
argues discrimination against African Americans is an intentionally developed phenomenon.
However, minority competition theory argues that discrimination against African Americans
stems from the perceived threat of African Americans by Whites when the number of African
Americans grows large. That is, the theory generally agrees with Massey and Denton but argues
that city level group threat dynamics moderate discrimination (such as resource disparities).

In essence, minority competition theory states that as a minority group becomes a greater
threat to the resources of the majority group, this majority group will increasingly use
discriminatory means to maintain resources.\textsuperscript{14} While there are other factors involved in the threat

\textsuperscript{14}The current study lacks measures of motivations to discriminate (though possibilities for future
categorizations and measurements are presented in the conclusion); however, while measures
of motivations to discriminate should be desired where available (e.g. Quillian, 1996; Stults and
Baumer, 2007), Blalock (1967) argues that by studying how the percentage of minorities relates
to unequal outcomes between groups we can infer how discrimination occurs (Also see for
example Behrens, Uggen and Manza 2003; Jacobs and Carmichael 2002; Welch and Payne
2010).
minorities pose to the majority, a higher percentage of minorities is largely understood as the primary way minorities will provoke a perceived threat in the majority. That is, as the percentage of minorities increase, this increase will provoke a greater motivation by the majority to hoard resources away from this minority group. However, since discrimination is cumulative, as the percentage of minorities grows the minority group will become less of a threat (due to their greater handicap). For example, a 5% minority increase will create a greater degree of inequality going from 10-15% compared to 30-35% (Blalock 1967:147-150). Continuing with this idea, as others have noted (e.g. Horowitz 1985; Turk 1969), as the percentage of minorities becomes large, they will be able to gain some ability to attenuate the already high effects of discrimination. As such, minority competition theory predicts a non-linear relationship (a decreasing then slightly reversing slope) between the percentage of minorities and resource inequality.

Recent research on minority competition has typically focused on the effect of the percentage of minorities on punishment practices (also called punishment power by Blalock). While not universally supported, minority competition theory has explained how increases in the percentage of minorities relates to such phenomena as police use of deadly force (Chamlin 1989), the death penalty (Jacobs and Carmichael 2002), interracial killings (Jacobs and Wood 1999), high school punitiveness (Welch and Payne 2010) and disenfranchisement (Behrens, Uggen and Manza 2003). Despite this large body of research there are few studies on the impact of minority competition on the unequal distribution of resources across groups (also called

15 There have been a few variations on Blalock’s (1967) early work on minority competition theory (Eitle, D'Alessio and Stolzenberg, 2002) as well as Blumer’s (1958) earlier theory that discrimination and prejudice are contingent upon group position (and feelings of privilege and threat that arise from group positioning). I focus on Blalock’s (1967) theory to avoid too much confusion between theories with slight variations.
reward power by Blalock). Although it was also theorized to predict unequal economic outcomes, minority competition research incorporating economic indicators tends to use them as causal variables of motivations to discriminate: also known as ‘economic threat’ (e.g. Bonacich 1972; Eitle, D'Alessio and Stolzenberg 2002; Olzak 1990; Parker, Stults, Rice 2005; Stults and Baumer 2007). The minority competition theory elaborated by Blalock conflates economic indicators as both causes of motivations to discriminate and as outcomes of the competitive threat minorities pose that motivate discrimination. Though future theorizing should attempt to do so, this dissertation does not elaborate how to separate economic indicators as causes and effects of motivations to discriminate. This dissertation simply points out that the minority competition process can prove useful in understanding city level moderating causes of the relationship between the percentage of African Americans and the presence of supermarkets in a neighborhood.

**Minority competition: The current study**

It is important to stress that this dissertation does not empirically investigate whether historical changes in cities affected changes in the relationship between demographics (African Americans) and the presence of organizations. I do not have a large enough sample of cities (nine cities were sampled from 1970 to 1990) to examine whether changes in the percentage of African Americans effected changes in the relationship between African Americans and the
presence of organization. Future research would be wise to look at ‘neighborhood within city’
minority competition dynamics historically.16

Using 2010 U.S. national data, this dissertation examines whether the relationship
between African Americans and the number of supermarkets in a zip code depends on the
proportion of African Americans in a city in a U-Shaped pattern described by minority
competition theory. Based on recent research confirming minority competition dynamics at the
level of cities still predicts discrimination against African Americans (e.g. Behrens, Uggen and
Manza 2003; Jacobs and Wood 1999), this dissertation predicts this to be the case. While lacking
a historical component, my analysis of 2010 national data still speaks to the ‘neighborhood
effects’ model of explanation: that the relationship between African Americans and supermarkets
is moderated by city dynamics. Similarly, agreeing with Massey and Denton (1993), though
contrary to Wilson (1987; 1996), this dissertation argues the percentage of African Americans in
a neighborhood has an effect on the presence of organizations, independent of income. However,
modifying Massey and Denton's thesis, I use minority competition theory to show that the

16 It is possible Drake and Cayton were misled by a small sample size. Drake and Cayton only
focus on Chicago and, as Small (2009) notes, it is unwise to focus on one city to show national
trends. Using 1950s data, Blalock (1967) showed that discrimination (including disparities in
resources) against African Americans depended on the proportion of African Americans in the
city as a whole. Drake and Cayton's study took place in the late 1930s - before the 2nd great
migration and the large influx of African Americans into Chicago (and the Mid-west more
generally). In this, Drake and Cayton may have been misled by only looking at Chicago which,
at the time, had a low total percentage of African Americans. Per minority competition theory,
the small amount of African Americans in Chicago in the 1930s may explain the relative
affluence of African American neighborhoods. Further, the increase in African Americans in
northeast and mid-west cities during the second great migration (1940 to 1970) and the continued
large numbers into the 1970s and 1980s may be another – though in this case city contingent –
component of the continued structural racism experienced by African Americans after the civil
rights movement (Massey and Denton, 1993). If minority competition theory is correct, future
research could show that changes the proportion of African Americans across cities changed the
presence of organizations (and/or other resources) in largely African American neighborhoods.
relationship between the percentage of African Americans and the presence of organizations in a neighborhood depends on the city in which it resides.

**Conclusion**

Despite the massive literature on ‘food deserts’ and massive history of urban sociological research and theory, these two literatures have evaded each other. Instead of elaborating ‘food deserts’ as a more general (urban) problem of neighborhood resource disparities, the (largely public health) ‘food desert’ literature has tended to take the correlates of supermarket location as their cause. This dissertation incorporates urban sociological theory into the study of food deserts in order to better understand the causes of the presence of supermarkets in neighborhoods (or lack thereof).

This dissertation argues that the ‘neighborhood effect’ explanations of the lack of material and symbolic resources in low income and high percentage African American neighborhoods – specifically disparities in the presence of supermarkets – are insufficient. Despite their differences, current policies attempting to attract resource to underserved areas (Hyra, 2013), research on food deserts (c.f. Beaulac, Kristjansson, & Cummins, 2009; Larson, Story, & Nelson, 2009; Lovasi et al., 2009) the ‘deinstitutionalized ghetto’ hypothesis (Wacquant 2008; Wilson, 1996) and the hypothesis of the continuing significance of race (Massey and Denton, 1993) all follow the ‘neighborhood effect’ model of the location of organizations: particular demographics cause the location of organizations and these relationships between organization location and demographics remain stable over time. Following previous research on the effect of cities and organizations on neighborhood resources (e.g. Marwell, 2007; Small and McDermott, 2006; Small, 2009) this dissertation develops and empirically demonstrates two
theories of how cities and industries moderate the presence of supermarkets in economically disadvantaged and African American zip codes.

First, this dissertation shows how ‘new institutionalism’ (c.f. Greenwood, 2008; Thornton, Ocasio, Lounsbury, 2012) can be used to investigate the causes of, and possible solutions to, the scarcity of organizations (and the resources they provide) in low income areas. It is argued that historically contingent institutional logics are the context in which neighborhoods are perceived, evaluated and acted upon by organizations. This theory will be empirically examined by investigating the impact of the grocery industry on the relationship between supermarkets and demographics during the years of the ‘urban crisis’ (1970 to 1990).

Second, this dissertation argues that minority competition theory helps explain the negative relationship between the percentage of African Americans and the presence of supermarkets in a zip code. I do not have enough of a sample of cities to investigate city level variations in the relationship between supermarkets and demographics during the urban crisis. Instead, I use a national sample of cities in 2010 to demonstrate how cities moderate the relationship between the presence of supermarkets and the percentage of African Americans in a zip code. Using 2010 U.S. national data, I hypothesize that at low levels of African Americans in a city there is low ‘perceived threat’ and low inequality in the placement of supermarkets; further, as the percentage of African Americans in the city increases, supermarkets are increasingly located away from African Americans; however, at high levels of African Americans in a city, the increasing unequal distribution of supermarkets away from African Americans declines – theoretically due to the cumulative effect of discrimination and the increased ability to attenuate discrimination when numbers are high. These results will indicate whether cities moderate relationships between zip code demographics and resources and suggest future research for city level (historical) studies of neighborhood resource disparities.
Generally speaking, the results of this dissertation will have important implications for both theory and policy regarding on ‘food deserts’ and neighborhood resource disparities more generally. This dissertation suggests that the ‘neighborhood effects’ explanation of the presence of organizations in neighborhoods can be better understood as ‘city and/or industry’ (or more generally ‘extra-local’) effects. In the same respect, instead of attempting to change the demographics of neighborhoods to solve neighborhood resource disparities – the most widely used policy tactic (c.f. Hyra, 2013) – policy makers would likely do better to change the city and industry causes of these disparities.
CHAPTER III

A HISTORICAL ERA OF FOOD DESERTS: CHANGES IN THE CORRELATES OF URBAN SUPERMARKET LOCATION, 1970-1990

Chapter Summary

This chapter investigates whether the correlates of supermarket location change over time. Data are collected from 1970 and 1980 city directories and unofficial data from the 1990 census zip business patterns. ‘Separate year’ and ‘differenced data’ models investigate changes in the correlates of supermarket placement in nine U.S. urban areas from 1970 to 1990. Results show that, controlling for population and the percentage of African Americans, in 1970 supermarkets were more likely to locate in urban areas with higher poverty and lower income. This pattern of store placement gradually reversed from 1970 to 1990.

As stated in chapter 2, previous research has largely agreed upon the correlates of supermarket placement (Beaulac et al., 2009; Larson et al., 2009; Lovasi et al., 2009; McKinnon et al., 2009). Focusing on urban areas, supermarkets are much less common (and food deserts more commonly exist) in urban areas with a higher percentage of those in poverty, a higher proportion of African Americans, and a populous with lower income (Algert et al., 2009; Lee and Lim, 2009; Moore and Diez Roux, 2006; Morland et al., 2002; Powell et al., 2007; Zenk et al., 2005). Much of this research on ‘food deserts’ implies that the correlates of supermarket placement are their causes: food deserts exist due to the demographics of the area.

More generally, as discussed in Chapter 2, despite their differences, the food desert literature, policies attempting to attract supermarkets into underserved areas, the ‘deinstitutionalized ghetto’ hypothesis (Wilson, 1996) and the hypothesis of the continuing significance of race (Massey and Denton, 1993) all follow the ‘neighborhood effect’ model of the location of organizations: particular demographics cause the location of organizations and...
these relationships between organization location and demographics remain stable over time. That is, these theories assume that in order to decipher or change the location of organizations one should investigate differences in demographics across neighborhoods either spatially or temporally.

In contrast to the aforementioned theories, this dissertation hypothesizes that the neighborhood demographic correlates of supermarkets changed over time. This chapter examines whether urban supermarket locations were consistently predicted by levels of income and the percentage of poverty and African Americans in a neighborhood or if there was a historical shift in these relationships from 1970 to 1990. Chapter 4 will empirically demonstrate why the correlates of supermarket placement changed over time. This chapter simply asks whether the neighborhood correlates of supermarkets are historically contingent. In empirically investigating the question of historical contingency, this chapter identifies whether the correlates of food deserts (and perhaps the investment patterns of organizations more broadly) should be considered as historical phenomena. If the correlates of urban food deserts are historically contingent, the focus on affecting neighborhood demographics (or the presumed effects of these demographics) to attract supermarkets would only mask the broader historical causes of food deserts; instead, researchers and policy makers should attempt to identify and resolve the historical causes of the problematic relationships between demographics and (a lack of) supermarkets.
Methods

Data and Variables

The unit of analysis in this study is the five digit zip code, which is to be preferred over census tracts for economic activity (Bingham and Zhongcai, 2001; Small and McDermott, 2006). Difficulties may arise when investigating changes in zip codes over time. Zip codes are categories for grouping mailing addresses and are not defined by geographic location. When a zip code changes its definition it does not change its name like a census tract. As such, examining a zip code over time can lead to a dramatically different defined area for the same zip code (Krieger et al., 2002). This limitation is not a problem when analyzing differences in independent models for each year; however, when investigating changes in specific zip codes over time a stationary zip code is mandatory. While zip code boundaries are relatively stable (Adams, 2007a) potential shifts in zip code boundaries are dealt with by looking for and excluding outliers in models utilizing data from more than one year. Eliminating outliers acts as a defense against changing zip code boundaries since any dramatic change in a zip code boundary will correspond with a dramatic change in its attributes.

Data come from three sources. Data for the number of supermarkets per zip code in 1970 and 1980 come from a sample of City Directories. City directories are to be preferred over yellow pages. City directories are funded through subscription, meaning information about businesses are collected by a canvass of businesses and “is compiled in a way to insure maximum accuracy”. Yellow page listings are paid for by the businesses who wish to be included in the classified sections. (Arrowhead Public Library System

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17 Two zip codes were eliminated from the 1970 to 1980 data: Zip code 75232 added 62% black along with a high change in HH income. In zip code 98107 population decreased by 34k, the next closest was 23k. One zip code was eliminated from the 1980 to 1990 data: In zip code 38127 population decreased by -43k, the next closest was 16k.

18 City directories are to be preferred over yellow pages. City directories are funded through subscription, meaning information about businesses are collected by a canvass of businesses and “is compiled in a way to insure maximum accuracy”. Yellow page listings are paid for by the businesses who wish to be included in the classified sections. (Arrowhead Public Library System
suburbs and thus the analysis only applies to urban areas. Nine urban areas were sampled with a total of 207 zip codes per year. The sample includes the following nine urban areas (with the number of zip codes in parenthesis): Buffalo, NY (20), Dallas, TX (36), Indianapolis, IN (17), Kansas City, MO (32), Memphis, TN (17), Milwaukee, WI (25), Nashville, TN (14), San Francisco, CA (23) and Seattle, WA (23). Following previous research on the importance of region (e.g. Wilson, 1996) about half of the cities come from the Northeast and Midwest (5) compared to the South and West. Also, following Massey and Denton’s (1993) influential book American Apartheid, about half of the cities (5) had black-white ‘hyper-segregation’.  

The grocery section of city directories also includes convenience stores. The Super Market News 1970 and 1983 Distribution Study of Supermarket Sales were used to identify the supermarkets in these city directories (Supermarket News, 1970; 1983). In these Super Market News Distribution studies information about supermarkets are defined and reported by newspapers in these markets. Methods of compiling estimates vary, from detailed surveys to knowledge about the market based on checks among food representatives, brokers or stores, or informed opinion (Supermarket News, 1970). Section 1 of the Distribution Study of Supermarket Sales shows the leading supermarkets for the top 50 Standard Metropolitan Areas broken down by the following categories: Leading chains, leading convenience stores chains, leading independents and voluntary or cooperative groups; convenience stores are also noted with a ‘C’ when appropriate. Only the non-convenience stores listed in either the 1970 or 1983 Distribution

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2003) This means those working at the yellow pages do not actively seek out businesses to make their information as complete as possible.  
19 I control for the city level variables of (1) hyper-segregation and (2) the northeast and Midwest vs. the south and west. However, I do not examine how these city level variables moderate relationships between zip code demographics and supermarkets. Preliminary analyses suggest relationships between demographics and supermarkets are similar across these city level variables (and thus not significant) – however, the sample size is too small to make reliable estimates and reliably rule out the possibility of the significance of these city level variables.
Study of Supermarket Sales were counted. Every effort was made to verify that the stores listed in the Supermarket News Distribution study were supermarkets and not convenience stores. While this will not cover all supermarkets (especially independent stores with only one location) it is a conservative measure of supermarkets.\(^{20}\)

Data for the number of supermarkets per zip code in 1990 comes from an unofficial\(^{21}\) dataset of the Census bureau’s ‘Zip Business Patterns’ series (official data only extends back to 1994). A letter provided by the census states that “every attempt has been made to update and correct the ZIP Codes in the base file; however, some 5-digit ZIP Codes could be incorrect... They are not to be cited or presented in any way as official statistics developed by the Census.”

The Standard Industrial Code (SIC) 5411 for ‘grocery stores’ is used to count grocery stores. Establishments under this SIC also include convenience stores. Previous work has distinguished convenience stores from supermarkets in the SIC 5411 category by using only stores with over 50 employees as supermarkets (Alwitt and Donley, 1997; Apparicio et al., 2007; Moore and Diez Roux, 2006). While this will not pick up small stores and should be understood as the number of ‘supermarkets’ rather than ‘grocery stores’ it is a conservative measure of supermarkets. This coding method is followed here.

\(^{20}\) Measures that included all stores in the Supermarket News distribution study, any store with ‘Super Market’ in the name and stores that had more than 3 establishments in one city in either 1970 or 1980 that, when investigated, showed to be supermarkets were also investigated. This led to similar findings except that the statistical significance and R-square of the models increased (e.g. in 1970 poverty is significant at the 0.001 level instead of the 0.1 level).

\(^{21}\) Per the letter provided by the census: “Every attempt has been made to update and correct the ZIP Codes in the base file; however, some 5-digit ZIP Codes could be incorrect. Since this file is unedited, the tabulated data will not reflect final corrections from the County Business Patterns review and may contain residual errors of transcription or omission not present in official statistics. For these reasons, the data provided are intended for your internal use only. They are not to be cited or presented in any way as official statistics developed by the Bureau of the Census.” While the letter says ‘for internal use only’ researchers were informed the data can be used in published manuscripts as long as it was made clear the data was \textit{not official} census data.
Data on the demographics of zip codes come from the Census of Population and Housing, 1970, 1980 and 1990 extract files (Adams, 2000; 2007a; 2007b). Since the correlation between the demographic attributes of a zip code and supermarket location are of interest zip codes with fewer than 1000 population were excluded from the analysis (excluding 9 zip codes in 1970, 11 in 1980 and 6 in 1990). Summary statistics for each variable are provided in Table 1. The logarithm of population is used “because some neighborhoods are primarily residential, while others are primarily business zoned” (Small and McDermott 2006). Mean household income is adjusted for inflation over time. In accordance with the census, the Bureau of Labor Statistics' Consumer Price Index is used to adjust for changes in consumer buying power over time (U.S. Census, 2012). The percent of people in poverty is used as a separate economic measure. Along with a standard percentage, a dummy variable ‘%poverty over 30%’ is used to investigate the effect of living in a zip code with concentrated poverty (Ludwig, 1999; Wilson, 1996). The percent of the population in the zip code that is African American is also examined.

**Analytical Strategy**

A series of ‘separate year’ models and ‘differenced data’ models are used in tandem in order to examine changes in statistical relationships over time. Conducting separate models for each year implicitly tests for interaction effects of the historical time point on the relationships between the dependent variable and independent variables (c.f. Brown et al., 2001). However, conducting separate models for each year does not control for changes over time in the variables involved (differences) as predictors of these changing relationships. Conversely, models with ‘differenced data’ elaborate how the dependent variable changes in relation to initial year
independent variables and changes in independent variables; yet ‘differenced data’ models cannot show whether statistical relationships between variables change over time.

Using a series of ‘separate year’ models and ‘differenced data’ models together allows for an investigation of whether statistical relationships change over time, controlling for changes in the variables analyzed. This is accomplished by (1) investigating whether the relationships between a dependent variable and independent variables differ across time points (by year models) and (2) testing whether changes in a dependent variable is predicted by changes in independent variables or the level of an independent variable in the initial year (‘differenced data’ models with initial conditions). With these two series of models changes in statistical relationships across time points can be explained by how either initial year demographics or changes in demographics predict changes in the number of supermarkets across time points. Given this strategy, the analysis is separated into two parts: (1) a series of by-year analyses and (2) a series of ‘differenced data’ analyses.

Part 1

In part 1 of the analysis, the relationship between supermarkets and demographics for 1970, 1980 and 1990 are analyzed separately. Conducting separate models for each year implicitly tests for interaction effects of the historical time period on the relationships between the dependent variable and independent variables (Brown et al., 2001). The dependent variable, the amount of supermarkets in a zip code, is a simple count based on the coding system elaborated above. The distribution of supermarkets is positively skewed due to the larger amount of zip codes with a low amount of stores and a finite limit of zero. As a result, these regression models are estimated with negative binomial regression (where the conditional variance exceeds
the conditional mean). Percent poverty and household income are used in separate models since looking at one while controlling for the other makes little sense analytically.

**Part 2**

While part 1 shows whether statistical relationships between the number of supermarkets and the demographics of a zip code change over time, it is still unclear whether changes in statistical relationships are independent of overall changes in demographics and supermarkets. Further, in what manner the number of supermarkets changed in relation to demographics is still unclear. Part 2 extends the analysis of changes in the relationships between the number of supermarkets and demographics by examining how initial year demographics and changes in demographics affect changes in supermarkets.

Part 2 of the analysis uses the differences of the proceeding year from the preceding year (time 2 - time 1) for each variable. Summary statistics for the differenced data are shown in Table 2. The relationships between the difference in the amount of supermarkets and the difference in the demographics of a zip code from one year to the next are investigated. This is done for two models: from 1970 to 1980 and then from 1980 to 1990. The impact of initial year demographics on changes in supermarkets are also examined. Again, percent poverty and mean household income are separated into two separate models because looking at one while controlling for the other makes little sense analytically.

The impact of initial year demographics on changes in supermarkets may be non-linear. This is especially true if one category of a demographic explains most of the changes in the number of supermarkets (e.g. supermarkets leaving high poverty zip codes at a much higher rate than anywhere else, controlling for changes in poverty in these zip codes). To account for non-
linearity, categories of initial year demographics are incorporated into the models to examine whether these particular categories, independent of changes in the demographic, predict changes in supermarkets. To account for changes in categories of poverty and household income over time the average of the quartiles from the three years examined are calculated and used as categories for all models examined. Static categories of %African American over time are also used: low African American population (under 30%), mixed race population (30-70% African American) and a high African American population (over 70% African American). Variables are coded with three categories where the middle categories of a zip codes in the preceding time point are coded as 0 (the reference category), the low categories are coded as 1 and the high categories are coded as 2. These dummy variables test whether the relationship between a specific demographic category and the amount of supermarkets change over time, controlling for changes in demographics. This analysis leads to a total of eight statistical models for the 2 ‘differenced’ data sets.

Results

Part 1: By year analysis of the relationships between supermarkets and demographics

Table 3 summarizes the nine models used to examine the relationship between the demographics and the number of supermarkets of zip codes for the years 1970, 1980 and 1990. As shown in table 3, logged population is a significant positive predictor of the number of

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22 Average 1st and 3rd quartiles for Household Income (adjusted for the consumer price index): 36765, 54815. Average 1st and 3rd quartiles for %poverty: 6.25, 22.
23 Unless otherwise noted significant categories as three level categorical variables are also significant as two level categorical variables; e.g. high income zip codes (1) compared to both low income and middle income zip codes combined (0) in 1970 is also a significant predictor of changes in supermarkets from 1970 to 1980.
supermarkets in a zip code for the year 1970, 1980 and 1990. In fact, logged population is the only variable that is consistently significant in all models. The percentage of the zip codes’ population that is African American is a consistently negative predictor of supermarket placement. While the percentage of African Americans in a zip code is a consistently negative predictor over time, this variable is only significant in 1970 when controlling for %poverty and in 1990 controlling for household income.

As shown in table 3, the economic predictors of the number of supermarkets in a zip code changed direction over time. There is a significant positive relationship between %poverty and the number of supermarkets in 1970. In 1970, for every 10% increase in the %poverty of a zip code there was a 20% increase ($e^{0.18} = 1.20$) in the number of supermarkets in the zip code. This relationship between %poverty and supermarkets becomes non-significant (but still positive) in 1980. In 1990 this relationship between %poverty and the number of supermarkets becomes a negative predictor. In 1990, for every 10% increase in the %poverty of a zip code the number of supermarkets in the zip code decreases by a factor of 0.795 ($e^{-0.023} = 0.795$). The changing relationship between poverty and supermarkets is also shown by the models with zip codes with poverty over 30%: A non-significant and positive relationship in 1970 becomes a non-significant and negative relationship in 1980 and then a significant and negative relationship in 1990.

The mean household income of a zip code also changes direction as a predictor over time. The relationship between the mean household income of a zip code and the number of supermarkets in a zip code was negative (though non-significant) in 1970. In 1980 this relationship between household income and supermarkets became positive (though non-significant). The relationship between mean household income and the number of supermarkets in a zip code remained positive (though still non-significant) in 1990.
Part 2: The relationships between changes in supermarkets and changes in demographics

Part 2a

Part 2 of the analysis investigates changes in demographics, initial year demographics and zip codes categorized by initial year levels of demographics as predictors of the changes in supermarkets in zip codes from 1970 to 1980 and 1980 to 1990. Table 4 shows the relationship between changes in the demographics of a zip code and changes in the number of supermarkets in a zip code, controlling for the demographics of the zip code in the initial year. As shown in Table 4, the R-square for each model shows that changes in population, percent African American, percent in poverty and mean household income collectively predict changes in supermarkets over twice as well from 1970 to 1980 as compared to 1980 to 1990 (about 18% variation explained vs. about 8% variation explained).  

Changes in the mean household income and the percent in poverty of a zip code are never significant predictors of changes in supermarkets over time. The initial conditions of the percent in poverty and the mean household income of zip codes are also not significant for either model. A change in population is a significant predictor of changes in the number of supermarkets from both 1970 to 1980 and 1980 to 1990 – though in different ways. From 1970 to 1980, for every

\[ \text{Changes in the mean household income and the percent in poverty of a zip code are never significant predictors of changes in supermarkets over time. The initial conditions of the percent in poverty and the mean household income of zip codes are also not significant for either model. A change in population is a significant predictor of changes in the number of supermarkets from both 1970 to 1980 and 1980 to 1990 – though in different ways. From 1970 to 1980, for every} \]

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Some may point to the 1980-1990 model as evidence that the city directory and unofficial zip code business pattern data are dissimilar. However, the coding system reflects a highly conservative measure of supermarkets, making it highly unlikely the data captures anything other than supermarkets. Systematic under-reporting of supermarkets is also highly unlikely: A measure that included all stores in the Supermarket News distribution study, any store with ‘Supermarket’ in the name and stores that had more than 3 establishments in one city for the 1980 measure increased the R-square. Further, using a measure of supermarkets with 20 or more employees in 1990 decreased the R-square. This low R-square likely reflects a loss in the predictive power of demographics on changes in supermarkets. Similar to the 1980-1990 model, when analyzing the relationship between changes in supermarkets and changes in demographics from 1990-2000 (both from zip business patterns) there was a much smaller R-square and predictive ability of variables as compared to the 1970-1980 model.
10,000 increase in population there was a 1.32 increase in supermarkets controlling for the percent of people in poverty and a 1.38 increase in supermarkets controlling for mean household income. From 1980 to 1990, for every 10,000 increase in population there was a 0.70 decrease in supermarkets controlling for the percent of people in poverty and a 0.74 decrease in supermarkets controlling for mean household income.\textsuperscript{25}

Changes in the percentage of those in the zip code who are African American from 1970 to 1980 are related to changes in supermarkets from 1970 to 1980. From 1970 to 1980, for every 10% increase in the percentage of African Americans in the zip code there was a 0.34 decrease in supermarkets controlling for the percent of people in poverty and a 0.35 decrease in supermarkets controlling for mean household income. Controlling for mean household income, the percentage of African Americans in a zip code in 1980 (the initial year) is significantly (at the 0.1 level) associated with changes in supermarkets from 1980 to 1990: For every 10% increase in the percent of African Americans in a zip code in 1980 there was a 0.41 increase in the number of supermarkets from 1980 to 1990; however, this relationship is not significant when controlling for the percent in poverty.

Part 2b

\textbf{Table 5} and \textbf{Table 6} extend the analysis of the effect of initial year demographics on changes in supermarkets, controlling for changes in demographics.\textsuperscript{26} Table 5 presents two models with a three categorical variable of the percent of the population in who are African American in the initial year [30-70% black (0), under 30% black (1), over 70% black]. The first

\textsuperscript{25} Future research is needed to explain this result. One possible hypothesis is that supermarkets began to favor increasingly commercially dominant zip codes within cities from 1980 to 1990.\textsuperscript{26} Categorized levels of changes of demographics (e.g. low/medium/high changes in poverty) provided no significant results for either time period.
model controls for the percent of the population in poverty and the second controls for mean household income. As shown in Table 5, whether controlling for household income or percent poverty, the three categorical variable %African American in 1970 does not significantly predict changes in supermarkets from 1970 to 1980. Further, the three categorical variable %African American in 1980 does not significantly predict changes in supermarkets from 1980 to 1990.

Table 6 includes a model with a dummy variable of three levels of initial year economic demographics [the middle two quartiles (0), the lowest quartile (1), and the highest quartile (2)]. While changes in mean household income and a ratio variable of 1970 mean household income did not significantly predict changes in supermarkets from 1970 to 1980 (see above), zip codes in high income areas in 1970 lost significantly more stores from 1970 to 1980 than middle income areas. As shown in Table 6, controlling for changes in population, %African American and mean household income (along with 1970 logged population and %African American), zip codes that were high income in 1970 lost 0.76 fewer supermarkets from 1970 to 1980 compared to middle income areas. From 1980 to 1990, compared to middle income zip codes, zip codes that were low income in 1980 lost 1.07 more supermarkets. Low income zip codes in 1970 and high income zip codes in 1980 did not significantly predict changes in supermarkets from 1970 to 1980 and 1980 to 1990 respectively.

Table 6 also provides a model with a three categorical variable of the percent of the population in poverty in the initial year. While changes in percent poverty and a ratio variable of 1970 percent poverty did not significantly predict changes in supermarkets from 1970 to 1980 (see above), zip codes in low poverty areas in 1970 lost significantly fewer stores from 1970 to 1980 than middle poverty areas. As shown in Table 6, controlling for changes population, %African American and percent poverty (along with 1970 logged population and %African American...
American), zip codes that were low poverty in 1970 lost 0.83 fewer supermarkets from 1970 to 1980 compared to middle poverty areas. Similarly, compared to middle poverty zip codes, zip codes that were low poverty in 1980 lost 1.01 fewer supermarkets from 1980 to 1990. High poverty zip codes in 1970 and 1980 did not significantly predict changes in supermarkets from 1970 to 1980 and 1980 to 1990 respectively.

Part 2c

Table 7 further elaborates changes in the relationships between the number of supermarkets in a zip code and the mean household income and the percent poverty of a zip code. Table 7 separates %poverty and household income into the bottom, middle two and top quartiles to show how the number of supermarkets in low, middle and high income/poverty categories changed over time. The top section of table 7 shows the number of supermarkets divided by the logarithm of population (to control for population) for each demographic category analyzed. The bottom section of table 7 shows the total number of supermarkets for each demographic category analyzed.

In 1970 high income zip codes had the fewest number of supermarkets while middle income zip codes had the most. From 1970 to 1980 high income zip codes lost the fewest stores: high income zip codes lost 67% fewer stores than middle income zip codes and 120% fewer stores than low income zip codes. This uneven decline in stores from 1970 to 1980 across

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27 To make these results more intuitive, take two hypothetical areas: a low poverty and a high poverty area. According to theories that argue demographics necessarily cause supermarket placement patterns, if both areas were to gain 10% poverty, each area should lose a similar amount of supermarkets. The greater increase in poverty in high poverty areas (concentrated poverty) is to account for the unequal losses in supermarkets in high poverty areas. The analysis here shows that, even if there were equal increases in poverty a zip code in the lowest quartile of poverty and highest quartile of poverty, the high poverty area would lose more supermarkets.
income categories led to a higher amount of stores per zip code in high income areas compared to either middle or low income areas in 1980. Then, from 1980 to 1990, there was a large decline of supermarkets in low income zip codes. Low income zip codes lost 1144% more stores than middle income zip codes and 229% more stores than high income zip codes from 1980 to 1990. However, high income zip codes lost the second most stores from 1980 to 1990. The low amount of supermarket losses in middle income zip codes compared to high income zip codes, combined with an extremely high amount of supermarket losses in low income zip codes, led to a positive relationship between supermarkets and mean household income in 1990. The high number of supermarkets in middle income areas throughout also accounts for the non-significant relationship between household income and the number of supermarkets in a zip code.

Table 7 also illustrates the changing relationship between poverty and supermarkets from 1970 to 1990. In 1970 low poverty zip codes had the fewest number of supermarkets while middle poverty zip codes had the most. From 1970 to 1980 high and middle poverty zip codes lost a similar amount of supermarkets while low poverty areas lost less than half the amount of supermarkets as either category. This relatively low loss of supermarkets in low poverty zip codes meant in 1980 low poverty zip codes had more supermarkets than high poverty zip codes (though still fewer than middle poverty zip codes). Then, from 1980 to 1990, there was an increase in supermarkets in low poverty areas. This increase occurred while middle income zip codes lost a similar amount of supermarkets and high poverty areas lost twice as many supermarkets as low poverty zip codes had gained. The gain of supermarkets in low poverty zip codes and the loss of supermarkets elsewhere led to a significant negative relationship between supermarkets and poverty in 1990.
Discussion

This study set out to investigate whether the mean household income, percent poverty and percent African American of a zip code necessarily leads to the number of supermarkets in a zip code or whether these associations are historically contingent. The analysis shows that a higher proportion of African Americans in a zip code is associated with fewer supermarkets from 1970 to 1990. A more populous zip code is also associated with more supermarkets over time.

The analysis shows that the relationship between mean household income and the number of supermarkets changed from 1970 to 1990. One consistent attribute about the relationship between the number of supermarkets and mean household income is that middle income areas had a relatively high amount of supermarkets over time. This high number of supermarkets in middle income areas led to a consistently non-significant relationship between supermarkets and mean household income. However, the location of supermarkets in high vs. low income zip codes changed over time. In 1970 low income zip codes had more supermarkets than high income zip codes. In 1980 and (to an even greater extent) 1990 low income zip codes had fewer supermarkets than high income zip codes. The analysis shows that the relationship between supermarkets and high vs. low income zip codes changed over time because high income zip codes in 1970 lost significant fewer stores than other areas from 1970 to 1980 and low income zip codes in 1980 lost significantly more stores than other areas from 1980 to 1990 (both controlling for changes in demographics).

Similarly, the analysis shows that the relationship between the percentage of people in poverty and the number of supermarkets changed from 1970 to 1990. In 1970 the relationship between the number of supermarkets and the percent of the population in poverty was positive.
This positive relationship between poverty and supermarkets became non-significant in 1980 and turned negative in 1990. Further analysis showed that, controlling for changes in demographics, the relationship between poverty and supermarkets changed direction over time due to a significantly smaller decline of supermarkets in low poverty areas compared to other areas from both 1970 to 1980 and 1980 to 1990.

**Conclusion**

This analysis shows that the relationship between zip code economic characteristics and supermarket locations are historically contingent. These findings stand in contrast to previous research and theory that implies that in order to decipher or change the location of organizations one should investigate differences in demographics across neighborhoods either spatially or temporally. The ‘neighborhood effect’ of concentrated poverty on a lack of supermarkets is actually a ‘historical’ or an ‘extra-local’ effect of the time period in which the high poverty neighborhood exists. While poverty is itself problematic, access to supermarkets for those living in high poverty (or low income) areas in 1970 was not the problem it is today.

To this point, policy interventions attempting to change neighborhood economic characteristics or modify the negative effects of economically disadvantaged areas on supermarket profit margins will only mask the historical shift of supermarkets away from economically disadvantaged areas to economically advantaged areas. Along these same lines, future research and theory should examine the problem of food deserts in economically disadvantaged areas as a historical issue; I do just this in the next chapter.
CHAPTER IV
THE MARKET INSCRIBED LANDSCAPE:
AN INSTITUTIONAL LOGIC OF FOOD DESERTS

Chapter Summary

This chapter shows that the 'neighborhood effects' of a lack of resources provided by organizations to economically disadvantaged areas are moderated by institutional logics. This theory is demonstrated by examining the institutional logics of the grocery industry, a business whose scarcity in economically disadvantaged areas negatively affects resident outcomes. From the 1930s to early 1970s the grocery industry had a logic of 'economies of scale': growth through increasing sales volume. A new ‘mix margin merchandising’ logic came about after the mid 1970s: using low margins on high demand items (especially ‘staples’) to gain the foot traffic needed to increase sales of high margin items. Using company specific grocery store location data for the transitional years of the industry (1970 to 1983), this chapter analyzes whether differences in company philosophy – economies of scale vs. mix margin merchandising – affect their presence in economically disadvantaged zip codes. Results show that supermarkets are less likely to locate in economically disadvantaged zip codes when operating under a mix margin philosophy. Combined with the results of chapter 2, these results indicate that a shift to a 'mix margin merchandising' institutional logic corresponded with a devaluation of (and exodus from) economically disadvantaged areas by the grocery industry after the mid 1970s.

Chapter 3 showed that, at least for nine urban areas, the scarcity of supermarkets in economically disadvantage areas is historically contingent: in 1970 economically disadvantaged zip codes were not underserved by supermarkets; but from 1970 to 1990 supermarkets moved away from economically disadvantaged zip codes to an extent that cannot be accounted for by increased economic disadvantage.

This chapter shows that the institutional logic of the grocery industry moderates the relationship between neighborhood economic attributes and the presence of supermarkets. It is hypothesized here that the changed relationship between neighborhood economic indicators and
supermarket location from 1970 to 1990 (shown in chapter 3) was caused by a change in the institutional logic of the grocery industry.

To demonstrate this point, this chapter is organized into two sections: first, the chapter presents a historical analysis of the grocery industry. The historical analysis shows the grocery industry has had two dominant institutional logics since the 1930s: one existing from 1930 to the early 1970s, another existing from the mid 1970s through the present. These two institutional logics, reasons for the change in institutional logic in the 1970s, and the ways companies locate stores differently under these two logics are detailed below. Second, this chapter statistically investigates whether stores with corporate philosophies corresponding to the two different institutional logics had different store location patterns during the transitionary years of the grocery industry: 1970 to 1983; the relationship between store location and zip code economic disadvantage under different corporate philosophies (corresponding to different institutional logics) are of particular interest.

Institutional Logics of the Grocery Industry

The Economy of Scale Logic (1930s – 1960s)

The years following WWI saw an increase in the profits of the U.S. retailing industry and a corresponding rise in retail chain stores (Lebhar, 1959). Efforts to combat the dominance of chain stores by independents ultimately proved to be ineffective (Mayo 1993) as the 1920s ushered in the era of the retail chain store (Calvani & Breidenbach, 1990). One industry heavily affected by chain stores was the grocery industry (Ingram & Rao, 2004: 451).
The increase in chain grocery stores in the 1920s and 1930s led to a new institutional logic of the grocery industry that would last until the early 1970s: A logic of economies of scale. Under the economy of scale logic, grocery stores operated on two related understandings of store operation: (1) Company growth and increasing profits were to be accomplished through increased sales volume and (2) raising prices to gain profit and below cost pricing to gain customers were illegitimate means of accruing profits.

Academics (e.g. Adelman, 1959; Bloom, 1978; Mayo, 1993), industry insiders (e.g. Bellenger, Stanley & Allen, 1977: 60) and a congressional commission (U.S. National Commission on Food Marketing, 1966) have described the late 1930s through the 1960s grocery industry as one characterized by a focus on increasing sales volume to increase profits. For example, according to James Herring, chairman of the board and CEO of the Kroger Company in 1977, “retailers always made their profits on sheer volume and the steady predictable growth of their markets. But beginning in the late 1960’s, volume growth suddenly began leveling for the first time.” (Bellenger, Stanley & Allen, 1977: 60). From the late 1930s until the 1960s, grocery companies (both chains and independents) would grow by both increasing the sales volume per store as well as increasing the number of stores that they owned. As overall profits increased through sales volume, the company could lower price on their goods while maintaining or even increasing overall profits. Moreover, by lowering prices stores would seem even more attractive to consumers, further increasing sale volume and profits.

During this economy of scale era, accruing profits by selling goods at high margins was generally viewed as an illegitimate practice (Adelman, 1957). Accruing profits by selling goods at artificially low margins (i.e. below cost selling) to gain customers was also viewed as an illegitimate practice during this era. As the president of the American Food Institute stated in 1931 "Each (grocery) chain knows that its quotations will be met by the other chains. This has
turned men's minds towards other methods” (Lovell, 1948:9). The idea that a grocery store
couldn’t let their dollar become angry’ became axiomatic in the grocery industry (Progressive
Grocer 1964: 140). Especially in the 1930s and 1940s, the practice of loss leader pricing –
lowering prices on well known items to gain the foot traffic to sell higher priced items – was
particularly disdained by the grocery industry (Lovell, 1948:5-10; Tunks, 1938; U.S. Federal
Trade Commission, 1932).

The use of loss leaders and below cost selling was despised outside of the industry as
well. Anti-chain store rhetoric concerning ‘keeping dollars local’, “monopoly, ‘financial
feudalism’, loss of opportunity and (infringements on) democracy”, largely propagated and
diffused by independent retailers, helped foster anti-chain store sentiments in 1920s and 1930s
America (Ingram and Rao, 2004: 451). Two of the ‘deceptive’ practices that chains were claimed
to use were predatory pricing (lowering prices to gain dominance in a market then raising prices
afterwards to recoup losses) and loss leader pricing (Lovell, 1948:5-10). While, like most of the
grocery industry, chain grocery stores viewed loss leader pricing as an illegitimate means of
growth (Lovell, 1948: 9-10; Tunks, 1938; U.S. Federal Trade Commission, 1932), anti-loss
leader and below cost selling sentiments were tied into anti-chain store legislation.

Anti-chain store rhetoric in the late 1920s and 1930s – though influenced heavily by
retail trade associations such as the National Association of Retail Grocers (Ingram and Rao,
2004) – helped bring about state below cost pricing laws (some of which are still on the books
today) and the short lived National Retail Association Codes (1933 – 1935) followed by the long
lasting and more powerful Robinson-Patman Act (1936 – present). This legislation had a variety
of effects on the grocery industry, including limits on, and formal illegitimacy of, the ‘deceptive’
practice of loss leader and below cost pricing strategies.

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Sentiment against loss leaders by congress\textsuperscript{28} and courts lasted into the early 1970s. Anti-loss leader sentiments were delivered by courts over time including statements about the deceptiveness to consumers and destructiveness to competition of the practice; examples include statements by the Oklahoma Supreme Court in 1959 (McIntyre & Volhard, 1972) and the Minnesota Supreme Court in 1967 (who were speaking in reference to the virtues of state below cost laws). Similar sentiments were espoused by the National Commission on Food Marketing in 1966 (U.S. National Commission on Food Marketing, 1966) and many in congress during a debate on the topic in 1972 (though not enough members to pass a federal bill against loss leaders) (U.S. Congress, Senate, 1972).

The practices of the Great Atlantic and Pacific Company (A&P) stores in the 1930s speak to the interaction between law and industry disdain for high margin and below cost pricing practices. According to Adelman (1957: 40-55) the desired policy of A&P’s corporate management in the late 1920s and 1930s (and after) was to maintain the existing 'increasing volume leading to more efficiency and lower prices' business model. However, some individual A&P stores would use loss leaders and the status of A&P as a low price leader to gain customers and then, at the same time, increase the prices for other items as a way to increase the profits of the particular store. This was occurring despite the warnings (and to the annoyance) of A&P management that this method of selling for ‘embarrassingly high profits’ was unsustainable: the stores were making ‘too much money’ - which would lead to decreased sales, a strengthening of competition and a deterioration of the company overall (Adelman, 1957: 40-55).

\textsuperscript{28} Through a variety of tactics (mostly using Section 2(b) of the Robinson Patman Act) the Federal Trade Commission focused on preventing price discrimination/ predatory pricing practices with businesses in commerce (i.e. not at the retail to consumer level) from the 1940s to the 1960s. (Calvani, 1979).
While the corporate management of A&P did what they could to eliminate these below cost/high margin practices, the short lived National Retail Association Codes followed by the Robinson-Patman Act also had an effect on limiting below cost and high margin selling. For example, while section 3 of the Robinson-Patman was hardly used (Calvani & Breidenbach, 1990) and was weakened substantially in 1957 (McIntyre & Volhard, 1972), the use of below cost pricing was technically illegal under this law. Even though A&P did not use any legal processes, the threat of potentially using legal avenues helped A&P’s corporate management end the use of loss leader (combined with high margin) selling by individual A&P stores (Adelman, 1957: 51-55, 242).

Outside of the barely used section 3, the Robinson-Patman act only applied to manufacturer-wholesaler-retailer relations and did not apply to direct to consumer sales (Bauer, 1991; Crowley, 1947:332-333; McIntyre & Volhard, 1972). At least for direct to consumer pricing strategies, there were ways to get around these laws if grocery companies felt it to their advantage. Regardless, for a long while after the enactment of these laws loss leaders were generally not used by the grocery industry (Lovell, 1948:9-10). The interaction between industry and government disdain for high margin and below cost pricing practices spread, and upheld the strength of, an industry logic of growth through high volume sales from the late 1930s until the 1960s.

The End of Growth through Increased Sales Volume

A variety of changes in 1970s U.S. society helped to make growth through high volume selling in the grocery industry untenable. Growth through high volume selling depends on the ability to enter new markets and expand sales. The decline of population growth in the U.S. in
the 1970s (Brock, 1981; Mayo, 1993; Walsh, 1993) meant that, by and large, new consumer markets would not emerge. Instead, increasing sales volume had to come from expanding within existing markets. Yet the expansion into existing markets would also prove difficult. The suburban market, a key area for increasing sales in the 1950s, had become saturated with grocery stores by the 1960s (Mayo, 1993: 191-193; Padberg and Rogers, 1987). Further, the use of mergers to increase sales volume became severely limited by federal law, and the Federal Trade Commission in particular, from the mid 1950s (and especially after the mid 1960s) until the mid-1980s (Ellickson, 2011; Parker, 1976; Wrigley, 1992).

Along with the decline in opportunities to expand into new markets, several other changes in U.S. society affected the ability of grocery companies to grow through increasing volume. For example, changes in the U.S. economy and law in the 1970s allowed for greater product differentiation. In the 1970s there was a change in manufacturing industries, from an economy of scale to an economy of scope method of accruing profit (Harvey, 1991) as well as the spread of information technology and computer networks in both manufacturing and retailing industries (Kahn & McAlister, 1997). These technological and organizational changes allowed for the manufacturing of a larger variety of products and the ability to elaborate differences in demand for varied products across a wide variety of grocery shoppers (e.g. Brock, 1980:26-27; Kahn & McAlister, 1997). Further, the 1970s ushered in the era of a much more lenient interpretation of price discrimination law (especially the Robinson-Patman act) by the Federal Trade Commission (Calvani, 1979; Schildkraut et al. 1991) and courts (Brodley & Hay, 1980; Gifford, 1994). While the Robinson-Patman act does not apply to direct to consumer pricing (Crowley, 1947:332-333; McIntyre & Volhard, 1972) changes in the interpretation of these laws, among other things, allowed manufacturers to charge (and retailers to negotiate) different prices for goods of ‘like grade and quality’.

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Increases in energy costs and increasing wages for grocery employees also increased the overhead of grocery stores (Brock, 1980; Walsh, 1993) – and the overhead costs to sales volume ratio is crucial for an economy of scale logic. Further, changes in U.S. society affected time-relevant behaviors of consumers (i.e. a desire for more ‘convenience’) including more women in the workforce (Walsh, 1993) a rise in disposable income (Messinger and Narasimhan, 1997) and the spread of microwave ovens (in the 1980s).

As U.S. society changed in the 1970s so too did the viability of the grocery industry’s economy of scale logic. Profit generated by the grocery industry decreased markedly from the mid-1960s until the mid 1970s (Parker, 1976). For example, from 1964 to 1977 net profit as a percentage of sales dropped from around 1.4% to around 0.6% (Walsh, 1993:44). The 1970s saw a decline in population growth and ability to expand into more markets, as well as increasingly varied prices on increasingly differentiated products and higher store operating costs. These changes in U.S. society helped to make the ‘economy of scale’ institutional logic less profitable and untenable as the dominant method of grocery store operation. During the 1970s, the ‘economy of scale’ logic of the grocery industry was replaced by a new institutional logic: a ‘mix margin merchandising’ logic.

The Mix Margin Merchandising Logic (1970s – Present)

While low prices have always been a concern in the grocery industry (e.g. Padberg, Knutson & Jafri, 1993), the loss of the ability to acquire sales volume by expanding into new markets led to increased competition over prices to lure in existing customers in the 1970s (Brock, 1981:19; Craswell & Fratrik, 1985: 6,47; Progressive Grocer, 1977a). Grocery stores wished to be seen as the ‘low price leader’ of the geographic market in order to keep existing...
customers as well as convince customers of other stores to switch (Progressive Grocer 1972c, 1981). With heightened competition over consumers through low pricing, grocery store ‘price wars’ escalated in a number of cities in the 1970s and 1980s (Craswell & Fratrik, 1985; McNair & May, 1976:54; Zimmerman, 1985). With a limited ability to (or prospects of) expanding into new markets, lowering prices by increasing sales volume was no longer tenable in the 1970s. A new logic of merchandising and pricing came about in the 1970s: what I call a mix margin merchandising institutional logic, though the concept of ‘one-stop shopping’ (e.g. A&P 1968 SEC Public Filing; Jewel 1970 SEC Public Filing) is similar in definition.

Being a ‘low price leader’ did (and does) not necessarily mean low prices for every item in the store. In order to be viewed as a ‘low price leader’, stores would only have to create low prices for items that had well known prices (Craswell & Fratrik, 1985; Kahn & McAlister, 1997:98-104; Padberg, Knutson & Jafri, 1993; Zimmerman, 1985) – these items are known as key value items (van der Waal & Moss, 2011) or items with ‘high elasticity’ (Andreyeva, Long & Brownell, 2010). Items that promote the ‘low price leader’ image of a store are typically high demand items such as household ‘staples’ like milk, eggs, and some fruits and vegetables (Craswell & Fratrik, 1985:28; Hobart, 1987; Holton, 1957; Padberg, Knutson & Jafri, 1993). Instead of lowering prices through increased sales volume, under a ‘mix margin merchandising’ logic prices on items with high elasticity are subsidized by the profits made from other items with low elasticity. Similarly, under this logic highly elastic items (e.g. staples) are sold at low margins in order to gain the foot traffic needed to sell a greater number of items with low elasticity but high margins.

The ‘mix margin merchandising’ logic rests on three related understandings of supermarket operation: (1) Expanding and diversifying the product mix of stores, especially including both high margin and low margin items. (2) Company growth and increasing profits
are to be accomplished through increased sales of high-margin items. These high margin items include specialty items (sometimes from specialty departments) and ‘non-foods’. (3)

Supermarkets develop a ‘low price leader’ image by having low prices on products whose prices are well known in order to keep and gain customers. The lure of customers through a ‘low price leader’ image increases the foot traffic needed to sell high-margin items. Profits made from high-margin items (often of low demand) are typically used to subsidize the low prices of items whose price is well known (often of high demand). Briefly put, under the mix margin merchandising institutional logic supermarket companies gain profit and grow through the sale of high-margin items – and these high-margin sales rely on the foot traffic generated by low-margin items.

The mix margin logic is perhaps best exemplified by the superstores and combination stores that arose in the early 1970s (Brock, 1981; Walsh, 1993). These early 1970s superstores were defined as a “large self-service food market offering a broadened variety of food products, new departments of a customized nature and a major expansion in general merchandise” (‘non-foods’) (Progressive Grocer 1973a; 1973b). Combination stores are similar but have around half of their space devoted to ‘non-foods’ (Progressive Grocer 1972a; 1972b). These store types, and similar stores under the ‘mix margin merchandising’ logic, are typically larger in size but size is not what defines them. In fact, store size (and sales per store) has been increasing since the 1920s (Daft, 1969; Mayo, 1993, Walsh, 1993:43). As Safeway put it in their 1976 Security and Exchange Commission (SEC) public filing “(Superstores) are larger than conventional supermarkets but the stocking plan, not the size, is the distinguishing characteristic” (p.11).

As opposed to stores under an ‘economy of scale’ logic, the mix margin merchandising strategy of superstores and combinations stores is not necessarily about increasing sales volume. In fact, if the store had a high volume of sales for only their low margin items the store would fail. Further, post-1970s supermarket sizes “have gone well above the minimum scale required to
take advantage of possible scale economies” (Messinger and Narasimhan, 1997:12-13). As the profit derived from high demand items decreased (i.e. ‘when food prices were squeezed’) new products (including specialty and ‘non-food’ items) became more important sources of profit.

Instead of sale volume, the ‘mix margin merchandising’ logic focuses on pricing to gain customers (foot traffic) and optimizing the profit derived from entire shopping baskets of items with a mix of margins. As a consultant at the food market institute said in 1972: “we have to think more than about sales per ft. or inventory turns… We should be looking more at new profit per ft. and new return on dollar investment.” (Progressive Grocer 1972b: 63). Superstores and combination stores developed the original methods of strategically gaining profit through mixing margins on items to both gain foot traffic and sell high-margin items (Progressive Grocer 1972a; 1972b; 1974b). This operating strategy was largely reserved for combination stores and superstores in the early 1970s; But through the late 1970s and by the 1980s the mix margin merchandising logic became the dominant logic of the grocery industry.

The mix margin merchandising logic has two major, inter-related components: (1) high margin items with low elasticity and (2) low margin items with high elasticity. I will discuss these two components of the mix margin merchandising logic, and how their use increased during the 1970s and 1980s, in turn.

**High margin items with low elasticity**

As the era of growth through high volume sales became untenable, high margin items became an indispensible part of the grocery industry. Not only would these items provide a high percentage of the profit accrued by stores despite their low sales volume (Progressive Grocer 1968; 1974a) high margin items allowed for stores to remain profitable even with low margin
pricing of high demand items (e.g. Progressive Grocer 1967d; 1972b). The increased concern over high margin items is reflected in the pages of grocery trade journals during the 1970s and 1980s. For example, concerns over increasing store profits (profits per store – not sales per store) by selling high margin items (especially non-foods) became a huge concern in the monthly grocery trade journal Progressive Grocer during the mid 1970s to mid 1980s. Reflecting this increased number of articles on high margin items, an entire issue of progressive grocer (January, 1978) was dedicated to describing the ways supermarkets can stock and sell high margin ‘non-foods’. Similarly, while non-foods had been featured extensively in the journal in the years prior, an entire section (usually a few articles per issue) of Progressive Grocer dedicated solely to general merchandise began in 1984.

Industry statistics provide an even more convincing picture of the concern over high margin items. According to the U.S. Department of Commerce (1963-1997), the percentage of sales within grocery stores that were groceries hovered around 85% from 1963 to 1977 (about 15% ‘non-foods’). The percentage of sales within grocery stores that were groceries dropped to 74.4% by 1987 (25% ‘non-foods’). This 25% ‘non-foods’ figure remained until at least 1997 (the most recent of this data the author can find). An increased concern over high margin items in the mid 1970s corresponded with a large increase in ‘non-food’ items sold by grocery stores.

Further, product differentiation has increased exponentially in supermarkets since the mid 1970s (up until at least 2005) (Ellickson, 2011). From 1974 to 1988 the number of items carried by U.S. supermarkets increased from 8,948 to 26,430 (Messinger and Narasimhan, 1997: 2). Especially since new items almost always have higher margins compared to existing items (e.g.

29 This is based on my own reading of Progressive Grocer articles from the early 1960s to the 1990s.
Progressive Grocer 1967a:53; 1967b; 1976c), by increasing the diversity of products (and including more non-food items), grocery stores were able to create a higher margin product mix.

Perimeter departments also expanded after 1970. Items sold in perimeter departments have high margins (Progressive Grocer 1984a) with markups ranging from 35% to more than 100% (Progressive Grocer 1976a; Walsh, 1993:51). From 1970 to 1990 there was a considerable increase in the percentage of stores offering delis (from 24% to 73%) bakeries (26% to 56%), seafood departments (0% to 33%) and floral departments (0% to 52%) (Walsh, 1993:11). The spread of perimeter departments to most supermarkets (not just superstores) since 1970 portrays the more general industry tactic of increasing the amount of merchandise with high margins. While low margin staples are typically promoted as the star attraction, these high margin items provide the true engine of growth for the modern supermarket.

Low margin items with high elasticity

Items that promote the ‘low price leader’ image of a store are typically high demand staples (Craswell & Fratrik, 1985: 28; Hobart 1987; Holton, 1957; Padberg, Knutson & Jafri, 1993). For example, as one manager of retail development said in 1979, “Groceries will continue to be cost-oriented to generate business. With high margin service and non-foods departments, well-managed combination stores can meet warehouse and limited assortment stores on price”. (Progressive Grocer, 1979a: 48). Milk is and has been used as a loss leader since the 1950s (McIntyre & Volhard, 1972; Mayer, 1965). Other groceries such as baby food, baking goods, condiments and noodles are and were also sold at low levels of margin to gain customers (Progressive Grocer 1975a,b). As competition grew, more and more groceries (especially those
with high elasticity) were priced at low levels of margin in order to increase the stores’ image as

Under the mix margin merchandising logic, the sales of high margin items are key for
growth. One consequence is that many groceries whose sales volume was viewed as paramount
for growth under an economy of scale logic are now viewed as tools to attract customers that will
buy high-margin items. The sale of fruits and vegetables are one group of items that were
important for store profits under an economy of scale logic but comparatively less important for
store profits under a mix margin merchandising logic. For instance, the relative percentage of
profit gained from fruits and vegetables declined. As the sale of non-produce items increased in
supermarkets, even if the sales and margins of produce remained similar over time, the profit
made from produce relative to the profit made from all other items in the store as a whole would
decline. Sales of fruits as a percentage of the overall sales of grocery stores went from 1.53% in
1961 to 0.55% in 1986 while vegetables went from 2.65% in 1961 to 1.22% in 1986 (Messinger
and Narasimhan, 1997: 15).

Further, the sale of fruits and vegetables are more likely to be judged in terms of the sales
of higher-margin items. For example, in 1967 Progressive Grocer (1967c) reported the findings
of a survey of 114 produce merchandising executives representing 5935 stores. These findings

30 Statistics on margins for staple items are hard to compare over time. For example, even when
estimating this group of items as similar across time, margins on fruits and vegetables only
increased slightly – around 2%-3% from 1961 to 1986 (Messinger and Narasimhan, 1997: 15).
However, these categories do not take into account the increased (margin producing) marketing
of fruits and vegetables that has occurred since the 1970s. For example, ‘organic’ and other
margin-producing labels, packaged items, chopped items, combination items (e.g. salads,
platters) and incorporating them into deli and specialty departments all increased the margins of
specific fruits and vegetables in ways that did not exist under an economy of scale logic. I could
not find statistics for the margins of non-marketed fruits and vegetables over time, though I
would hypothesize they declined. Regardless, stores are less reliant on profits from produce
because of the greater amount of profit made from other items – and some of these other items
include produce that has been modified and marketed to increase its margin.
did not even discuss the possibility of using produce as a loss leader; in the late 1960s produce merchandising executives were much more interested in how to best accrue profits from the sales of produce. Conversely, a 2000 survey of the operating practices of supermarket buyers (by the Food Industry Management Program at Cornell University) found that matching prices by competitors and loss leadering produce were important techniques for supermarkets. (McLaughlin, 2004:S84; see also e.g. Richards, 2006). As non-foods and specialty items became paramount for profit margins, fruit and vegetables were more often used as loss leaders.

**Store Location Patterns Under Each Institutional Logic**

The mix margin merchandising logic is also characterized by a decentralized management structure (Walsh, 1993) and an emphasis on acquiring information about consumers (by individual characteristics and geographic location) (Kahn & McAlister, 1997). These strategies stem from the more general approach of using low margin items to gain the foot traffic needed to sell high margin items. In terms of this study, the most important difference between the mix margin merchandising logic and the economy of scale logic is the location pattern of stores.

Under a mix margin merchandising institutional logic companies will tend to avoid low income areas. Under this logic a large amount of profit is derived from high margin, low demand items – items low income consumers tend not to buy. For example, personal care products and services and housekeeping supplies were two categories of items that increased considerably in supermarkets from 1977 to 1987. In 1990 consumers in the highest quintile of income (the top 20%) spent 3.6 times more on personal care products and services and 3.3 more on housekeeping supplies than consumers in the lowest quintile of income (BLS, 1993). While these statistics are
not specific to income spent in grocery stores, they do indicate that high income consumers will spend more money on these categories of items.

Stores that rely on low income consumers will fare better under an economy of scale institutional logic. While people will be willing to spend more money on groceries depending on their income, diet or the overall economic climate – unlike non-foods and specialty items – groceries will be purchased by all demographics over time. To this point, while there are still discrepancies between incomes in their purchase of food at home, these discrepancies will be smaller than with other (‘non-staple’) items. For instance, in 1990 consumers in the highest quintile of income spent 2.2 times more on their ‘total food at home’, as well as 2.2 times more on fruits and vegetables specifically, than consumers in the lowest quintile of income (BLS, 1993).\(^{31}\) Compared to a mix margin institutional logic, when grocery companies grow through increasing sales volume on groceries – as they do under an economy of scale institutional logic – store profitability and location patterns will be less likely to depend on income level.

When comparing the two institutional logics’ relationship to low income consumers, both can be said to have their worth. Under the mix margin institutional logic, stores gain a large amount of profit from high margin items. In one respect, since low income consumers are less likely to purchase these items, there will be fewer stores in low income areas. In another respect, profits derived from high margin items help subsidize the low prices of high demand staples. In fact, low income consumers that live in middle or high income areas will benefit from the mix margin merchandising logic with lower prices on staples (Holton, 1957). Conversely, under an institutional logic.

\(^{31}\) The ratio of the highest vs. the lowest quintile of income buying fruits and vegetables (2.11 in 1972) and food at home (2.74 in 1972) was slightly higher in the early 1970s (BLS, 1978). In 2012 this highest-to-lowest quintile ratio of was even higher for food at home (2.47), fruit and vegetables (2.63) and personal care product (4.68) (BLS, 2014). When we compare people with incomes over $35,000 to incomes under $5,000 (in 1974 dollars) the ratio for ‘food at home’ was still about 3 in 1974, compared to a ratio of about 5 for personal care products that were purchased in grocery stores (Burgoyne, 1980).
economy of scale logic, the profits of high margin items will not subsidize the prices of staples; however, since profits are derived from high grocery sales volume, low income areas will have more stores under an economy of scale logic.

Considering the locational tendencies of each logic, this shift in institutional logic of the grocery industry explains the findings of chapter 3: that, controlling for changes in demographics, supermarkets moved away from low income urban areas and towards high income urban areas from 1970 to 1990. That is, as the logic of profitability through high margin items replaced the logic of profitability through high volume selling during the 1970s and 1980s, stores gradually moved away from low income areas towards high income areas.

I further explore the effect of the shifting institutional logic of the grocery industry on the location of stores in economically disadvantaged areas from 1970 to 1990. Chapter 3 looked at changes in the location patterns of all supermarkets (in nine urban areas) from 1970 to 1990. This chapter investigates the store location patterns of specific companies and whether store location depends on their historically specific corporate philosophy. I focus the analysis on the transitionary years of the grocery industry: 1970 to 1983. Specifically, I hypothesize that, during these transitionary years of the industry, companies with a mix margin merchandising corporate philosophy were less likely to locate in economically disadvantaged areas as compared to companies with an economy of scale corporate philosophy.

**Data and Methods**

Company specific grocery store location data come from City Directories for the years 1970, 1973, 1977, 1980 and 1983. City Directories are to be preferred over yellow pages. City directories are funded through subscription, meaning information about businesses are collected
by a canvass of businesses and “is compiled in a way to insure maximum accuracy”. Yellow page listings are paid for by the businesses who wish to be included in the classified sections. (Arrowhead Public Library System, 2003) This means those working at the yellow pages do not actively seek out businesses to make their information as complete as possible. One draw-back of city directories is that they do not include surrounding suburbs; thus the analysis only applies to urban areas.

The unit of analysis in this study is the five digit zip code, which is to be preferred over census tracts for economic activity (Bingham and Zhongcai 2001; Small and McDermott 2006). While zip code boundaries are relatively stable (Adams 2007a) they may change over time (Krieger et al. 2002). Potential shifts in zip code boundaries are dealt with by looking for and excluding zip codes with dramatic changes in demographics from 1970 to 1980. Zip codes with a very small total population (under 500) are also excluded since large changes in socio-economic characteristics may stem from very minor actual changes in demographics.32

Nine urban areas were sampled with a total of 196 zip codes per year (for a total of 980 zip codes in the five sampled years). The sample includes the following nine urban areas (with the number of zip codes in parenthesis): Buffalo, NY (19), Dallas, TX (33), Indianapolis, IN (18), Kansas City, MO (32), Memphis, TN (16), Milwaukee, WI (24), Nashville, TN (13), San Francisco, CA (22) and Seattle, WA (19). Following previous research on the importance of

32 Originally there were 209 zip codes for these 9 cities. For a variety of reasons, 13 zip codes were eliminated from the data: Two zip codes (14218 and 64145) were eliminated given that they were not in city directories for every year analyzed. Seven zip codes (37213, 38118, 53208, 75207, 75247, 94105 and 98134) were eliminated due to having a total population of less than 500 (lows of populations of excluded zip codes were between 10 and 375). Two zip codes (98112 and 98117) were eliminated due to missing information in the 1970 census. Two zip codes were eliminated from the analysis due to dramatic differences between 1970 and 1980, suggesting changes in zip code boundaries: Zip code 75232 had a dramatic change (much more than any other zip code) in %Black and HH income from 1970 to 1980. Zip code 98107 had a dramatic decrease in population (34k, the next closest in 23k) from 1970 to 1980.
region (e.g. Wilson, 1996) about half of the cities come from the Northeast and Midwest (5) compared to the South and West. Also, following Massey and Denton’s (1993) influential book American Apartheid, about half of the cities (5) had black-white ‘hyper-segregation’.

The grocery section of the city directories also includes convenience stores. The Super Market News 1970 and 1983 Distribution Study of Supermarket Sales are used to identify the supermarkets in these city directories (Supermarket News 1970; 1983). In these Super Market News Distribution Studies information about supermarkets are defined and reported by newspapers in these markets. Methods of compiling estimates vary, from detailed surveys to knowledge about the market based on checks among food representatives, brokers or stores, or informed opinion (Supermarket News 1970). Section 1 of the Distribution Study of Supermarket Sales shows the leading supermarkets for the top 50 Standard Metropolitan Areas broken down by the following categories: Leading chains, leading convenience stores chains, leading independents and voluntary or cooperative groups; convenience stores are also noted with a ‘C’ when appropriate. Only the non-convenience stores listed in either the 1970 or 1983 Distribution Study of Supermarket Sales were counted.

According to the Supermarket News Distribution Studies (1970; 1983), 57 (‘leading’) grocery companies operated stores in the nine cities analyzed. To determine the corporate philosophy of these companies from 1970 to 1983 (and whether their philosophy changed during this time), information on these companies was searched for in the following sources: (1) Security and Exchange Commission (SEC) Public Filings (found on Proquest Historical Annual Reports), (2) the grocery trade journals 'Supermarket News' and ‘Progressive Grocer’, found online since 1983 (on Gale Cengage Academic), (3) hard copies of 'Progressive Grocer' from 1967 to 1983. These sources provided information about the corporate philosophy for 24 of the 57 companies. This method of coding is biased in favor of large chain stores as compared to
independents since the SEC public filings would not cover independents and Progressive Grocer and Supermarket News are biased towards reporting on large companies. However, the action of large companies are more substantial when analyzing industry trends since large chains are more likely to create, make legitimate and influence others to copy new industry trends (e.g. Fligstein 1990; Haveman, 1993).

Companies were coded as having a ‘mix margin merchandise’ format if they either (1) had made a declaration to focus on incorporating a greater amount of non-foods and a greater variety of products or (2) began to focus on operating ‘superstores’ or ‘combination stores’. For example, in their 1968 S.E.C. public filing A&P said “stores of the future will be larger, with many new departments and wider variety to enable the shopper to truly enjoy one stop shopping”. Also, a Progressive Grocer (1984c) article detailing Stop & Shop explained that their “movement to build only superstores and to expand some existing units into superstores began in 1982, picked up steam during 1983, and continued at a hectic pace through the first three quarters of (1984)”. A&P and Stop and shop were coded as having a mix margin merchandising philosophy after (and an economy of scale philosophy before) 1968 and 1982 respectively.

Companies were coded as having an ‘economy of scale’ format if they (1) did not say they were changing to a one-stop shopping model and either (2a) said they had not changed their store operations since the 1960s or before or (2b) if they said their company’s growth stemmed from increasing profits through increased sales volume (this includes converting to a warehouse store format focused on increased sales volume of low priced groceries). For example, a Progressive Grocer (1984b) article showed that “just a decade ago, Kohl's virtually owned Milwaukee. But…a misguided attempt to reposition the chain as discount-oriented led to a severe erosion of sales”. Also, a Progressive Grocer (1984d) article reported that Minyard had not started creating superstores until 1984. Kohl’s and Minyard are both coded as having an
economy of scale philosophy for the entire time period under analysis (before 1984). The list of 24 companies, when their corporate philosophy changed to a mix margin merchandise philosophy (or if they maintained an economy of scale philosophy) and citations of evidence of their company philosophy can be found in the appendix.

Based on the distinction between the two corporate philosophies, two different data sets were created. Both data sets contain all zip codes from 1970, 1973, 1977, 1980 and 1983; however, each data set only counts the stores of companies operating at the time under either an ‘economy of scale’ or ‘mix margin merchandising’ philosophy, respectively. For company philosophy changes to ‘mix margin merchandising’ that occur on a year specifically in the data set (e.g. 1977), the stores in that year are counted as operating as under an ‘economy of scale’ philosophy. For example, since Marsh changed to a ‘mix margin merchandising’ philosophy in 1977, Marsh stores are counted in the ‘economy of scale’ data set for the years 1970, 1973 and 1977; Marsh stores in 1980 and 1983 are then counted in the ‘mix margin merchandising’ data set. Conversely, since Safeway changed to ‘one-stop shopping’ in 1976, Safeway stores in 1977 (along with 1980 and 1983) are counted in the ‘mix margin merchandising’ data set; Safeway stores in 1970 and 1973 are then counted in the ‘economy of scale’ data set. This method led to two data sets: the number of stores in a zip code in 1970, 1973, 1977, 1980 and 1983 operating under either an (1) ‘Economy of scale’ or a (2) ‘mix margin merchandising’ philosophy.

Data on the demographics of zip codes come from the Census of Population and Housing, 1970 and 1980 extract files (Adams 2007a; 2007b). Following previous research (e.g. Quillian, 1999) a ‘nearest census year method’ is used, connecting intercensal years to the nearest decennial census. For example, the 1980 census provides demographics for the 1977, 1980 and 1983 supermarket data. Summary statistics for each variable are provided in Table 8. The logarithm of population is used “because some neighborhoods are primarily residential,
while others are primarily business zoned" (Small and McDermott 2006). To adjust for inflation, 1970 mean household income is adjusted for 1980 dollars. In accordance with the census, the Bureau of Labor Statistics' Consumer Price Index is used to adjust for changes in consumer buying power over time (U.S. Census 2012). The percent of people in poverty is used as a separate economic measure. Along with a standard percentage, a dummy variable ‘%poverty over 30%’ is used to investigate the effect of living in a zip code with concentrated poverty (Ludwig 1999; Wilson 1996). The percent of the population in the zip code that is African American is also examined.

Regression models are estimated with negative binomial regression. Negative binomial regression is used because the dependent variable, the amount of supermarkets in a zip code, is a count where the distribution of supermarkets is positively skewed (due to the larger amount of zip codes with a low amount of stores and a finite limit of zero) and the conditional variance exceeds the conditional mean. Two separate negative binomial general linear models are conducted for stores operating under each corporate philosophy. Conducting separate models for each corporate philosophy implicitly tests for interaction effects of the corporate philosophy on the relationships between the dependent variable and independent variables (e.g. Brown et al., 2001). Finally, percent poverty, zip codes with poverty over 30% and household income are used in separate models since looking at one while controlling for the other makes little sense analytically. Taken together, these models elaborate the effect of corporate philosophy (economy of scale vs. mix margin) on the relationship between the number of grocery stores and the economic characteristics of a zip code from 1970 to 1983, controlling for population and %black.
Results

Table 9 summarizes the models used to compare the store location patterns of companies with an ‘economy of scale’ philosophy (left columns) to companies with a ‘mix margin’ philosophies (right columns) during the years 1970 to 1983. As shown in table 9, logged population is a significant positive predictor of the number of supermarkets in a zip code for both company philosophies. Logged population is a more influential predictor of supermarkets under the ‘economy of scale’ philosophy, leading to slightly over two-thirds more stores per logged population than under a mix margin philosophy (179% vs. 96.6% increase in stores per logged population). Similarly, whether controlling for household income or poverty, the percentage of the zip codes’ population that is African American is a negative predictor of supermarket placement for both company philosophies. The percentage of African Americans is similarly influential for both philosophies; for example, controlling for poverty, for every 10% increase in the percentage of African Americans there is a decrease in stores by a factor of 0.927 ($e^{-0.076}$) and 0.951 ($e^{-0.050}$) for an ‘economy of scale’ and ‘mix margin’ logic, respectively.

The percentage of people in poverty and the categorical variable of zip codes with over 30% poverty are not statistically significant predictors of the number of store in a zip code for either corporate philosophy. However, while not statistically significant, the poverty coefficients for the two philosophies tend towards opposite directions. For stores with an ‘economy of scale’ philosophy, while not statistically significant, for every 10% increase in poverty there is a 9% increase in stores in the zip code. Zip codes with poverty over 30% also have 1.2% more stores than other zip codes. Conversely, for stores with a ‘mix margin’ philosophy, while not statistically significant, for every 10% increase in poverty the number of stores in the zip codes decreases by a factor of 0.902. Zip codes with poverty over 30% also have 5.4% fewer stores than other zip codes. Again, while not statistically significant, these results show that stores with
an economy of scale philosophy tend towards poverty while stores with a mix margin philosophy tend to be repelled by poverty.

Mean household income (in 1980 dollars) is a positive and statistically significant predictor of the number of stores in a zip code for both corporate philosophies (though this significance is at the 0.1 level for the economy of scale logic). For every $10,000 increase in mean household income (in 1980 dollars) there is a 3.4% and a 4.4% increase in stores for an ‘economy of scale’ and ‘mix margin’ logic, respectively. Table 9 suggests that, unlike with poverty, household income is similarly predicted for stores operating under either corporate philosophy.

Table 10 helps explain why stores under the two philosophies tend towards different directions in terms of poverty but tend toward the same direction for mean household income. Table 10 separates %poverty and household income into the bottom, middle two and top quartiles to show how the number of supermarkets in low, middle and high income/poverty categories differ for the two company philosophies. The top section of table 10 shows the total number of supermarkets for each demographic category analyzed. The bottom section of table 10 shows the number of supermarkets divided by the logarithm of population (to control for population) for each demographic category analyzed.

Looking at the number of stores per categories of mean household income, table 10 shows that middle income zip codes have about as many stores as high income zip codes under an ‘economy of scale’ logic and more stores than high income zip codes for a ‘mix margin’ logic. Table 10 also shows that, under an ‘economy of scale’ logic, there is a positive relationship between the number of stores per zip code and household income; but this relationship is slight (as suggested by the small effect size shown in table 9). There is only a 23% increase going from low income to middle income zip codes and there is virtually no difference
between middle and high income zip codes. Conversely, under a ‘mix margin’ logic, table 10 shows that there is a positive but non-linear relationship between household income and stores per zip code (with the most stores operating in middle income areas).

Importantly, the relevance of mean household income is much greater for stores operating under a mix margin logic. Unlike with stores operating under an ‘economy of scale’ logic, there are large differences between categories of household income for stores operating under a ‘mix margin’ logic. Table 10 shows that middle income zip codes are favored under the mix margin logic. Even more though, low income zip codes are heavily disfavored under the mix margin logic. For an economy of scale logic, compared to low income zip codes there are 23% and 25% more stores in middle income and high income zip codes, respectively. For a mix margin logic, compared to low income zip codes there are 188% and 122% more stores in middle income and high income zip codes, respectively. Put another way, the disparity between stores in low income zip codes and high income zip codes is almost 5 times greater under the mix margin philosophy than the economy of scale philosophy. Further, the disparity between stores in low income zip codes and middle income zip codes is over 8 times greater under the mix margin philosophy than the economy of scale philosophy. These results indicate that supermarkets are more likely to avoid low income zip codes when operating under a mix margin logic compared to an economy of scale logic.

Table 10 also helps to elaborate the relationship between poverty and store placement under the two philosophies. First, under both philosophies, most stores are located in middle poverty areas. This helps explain the lack of statistical significance. Second, table 9 shows that, while not significant, economy of scale stores tend towards poverty. Table 10 shows that differences in stores between categories of poverty are small under an economy of scale logic. While high poverty areas have the lowest amount of stores, there are only 23% and 39% more
stores in low and middle poverty zip codes, respectively. This suggests that stores operating under an economy of scale logic will tend toward middle poverty zip codes and will not avoid low poverty zip codes enough to make the overall poverty-store relationship negative.

Finally, table 9 shows that, while not significant, mix margin stores tend to avoid poverty. Table 10 shows that, due to a much smaller amount of stores in high poverty zip codes, differences in stores between categories of poverty are large under a mix margin logic. Compared to high poverty zip codes there are 71% and 121% more stores in low and middle poverty zip codes, respectively. Put another way, the disparity between stores in high poverty zip codes and both low poverty and middle poverty zip codes is over 3 times greater under the mix margin philosophy than the economy of scale philosophy. These results indicate that supermarkets are more likely to avoid high poverty zip codes when operating under a mix margin logic compared to an economy of scale logic.

Discussion

This chapter argues that the institutional environment of organizations provides the context in which these organizations perceive, evaluate and act upon neighborhoods. Using the concept of institutional logics, the chapter set out to demonstrate how historically contingent institutional logics of the grocery industry moderate the presence of supermarkets in economically disadvantaged areas. A historical analysis of the grocery industry shows a change in the institutional logic of the grocery industry in the mid 1970s. From the 1930s to 1960s the institutional logic of the grocery industry was an ‘economy of scale’ logic: grocery companies would attempt to grow by increasing their sales volume on all items in their store(s). Changes in U.S. society in the 1970s help bring in a new institutional logic after the mid 1970s: a ‘mix
margin merchandising’ logic. Under this mix margin logic, stores would attempt to grow by having low prices on high demand items (especially food ‘staples’) to gain the foot traffic needed to increase sales of high margin specialty and non-foods items.

These two institutional logics value low income neighborhoods differently. An economy of scale logic focuses on growth through increased sales of groceries, and since all income levels purchase groceries, this logic is more likely to value consumers of all incomes. Conversely, a mix margin merchandising logic focuses on low margins on groceries and growth through the sale high margin specialty and non-food items; since low income consumers are far less likely to purchase these high margin items compared to consumers of higher income levels, this logic does not value low income consumers. This change explains the results of chapter 3: that in 1970 economically disadvantaged zip codes were not underserved by supermarkets; but from 1970 to 1990 supermarkets moved away from economically disadvantaged zip codes to an extent that cannot be accounted for by increased economic disadvantage.

Using company specific grocery store location data for the transitionary years of the industry (1970 to 1983), this chapter further analyzed whether changes in the institutional logic of the grocery industry changed the presence of supermarkets in economically disadvantaged zip codes. It was hypothesized that companies with a mix margin merchandising corporate philosophy were less likely to locate in economically disadvantaged areas as compared to companies with an economy of scale corporate philosophy. The results support this hypothesis. Results show that the disparity between stores in low income zip codes and high income zip codes is almost 5 times greater and the disparity between low income and middle income zip codes is over 8 times great under the mix margin philosophy than the economy of scale philosophy. Using poverty as a measure of economic disadvantage instead of income leads to similar results. The disparity between stores in high poverty zip codes and both low poverty and
middle poverty zip codes is over 3 times greater under the mix margin philosophy than the economy of scale philosophy. These results indicate that supermarket were more likely to avoid economically disadvantaged zip codes when operating under a mix margin philosophy compared to an economy of scale philosophy from 1970 to 1983. This indicates that a shift to a ‘mix margin merchandising’ logic for the industry as a whole after the mid 1970s corresponded with a devaluation of economically disadvantaged areas by the grocery industry.

**Limitations**

One limitation of this study is that it only looked at nine cities. The sample of cities both did and did not have hyper-segregation (according to Massey and Denton, 1993) and was in both the south and west and the Midwest and north (theoretically important according to Wilson, 1996). However, nine cities are not enough to truly control for any city level variables. Considering the importance of city variables on retail location patterns (Small and McDermott, 2006) future research should investigate city effects and especially their interaction with the historical change in institutional logic found in this study.

Also, this study presented likely reasons why there was a change in institutional logic of the grocery industry; however, in large part, these are merely logical hypotheses since a systematic analysis of causation was not conducted. Future research could conduct such a systematic analysis. Changes in the interpretation of price discrimination by the Federal Trade Commission (Calvani, 1979; Schildkraut et al. 1991) and courts (Brodley & Hay, 1980; Gifford, 1994) is a particularly interesting possibility. While price discrimination does not apply to direct to consumer prices, these changes likely affected the relationship between manufacturers and retailers – especially the ability to determine prices and profits (also see Wrigley, 1992).
Finally, this study only examines the era between 1970 and 1990. Other factors have likely affected the industry since 1990. For example, from 1972 to 1992 concentration levels of the grocery industry (measured as the percent of sales by the 4, 8, 20 or 50 largest firms) remained stable. However, from 1992 to 1996 concentration levels increased considerably in the grocery industry (U.S. Department of Commerce, 1963-1997). Advances in data gathering and analyses about consumers, changes in the U.S. welfare system in the 1990s or the recession after 2008 may have also had effects on the grocery industry. Regardless, U.S. trends after 1990 do not suggest that the mix margin merchandising logic is outdated (e.g. store location patterns vis-à-vis economic disadvantaged areas, price elasticity and a low price image and specialty departments and non-food sales are all similar today).

**Conclusion**

Policies that promote or create mixed-income housing neighborhoods may attract supermarkets but, unfortunately, these policies can also promote gentrification (Hyra, 2013). Conversely, policies addressing the moderating effects of organizational dynamics on neighborhoods seem less likely to displace the residents of these neighborhoods. The results of this chapter indicate that policies addressing the institutional logic of the grocery industry may help produce more supermarkets in economically disadvantaged areas. In order to address the problem of food deserts\textsuperscript{33} policy makers must take into account that the profit made from 'staples' as stated, the mix margin logic may have beneficial outcomes for low income residents: If access is less of a factor for health compared to the price of staples (especially fruits and vegetables), the mix margin logic should be favored since it lowers the prices of staples. If access is more of a factor for health compared to price then future research, theory and policy should deal with the fact that high margin items subsidize the prices of staples (especially fruits and vegetables). While a comparative study has not been conducted, a great deal of research has shown that the presence or absence of supermarkets effects resident health outcomes.

\textsuperscript{33} As stated, the mix margin logic may have beneficial outcomes for low income residents: If access is less of a factor for health compared to the price of staples (especially fruits and vegetables), the mix margin logic should be favored since it lowers the prices of staples. If access is more of a factor for health compared to price then future research, theory and policy should deal with the fact that high margin items subsidize the prices of staples (especially fruits and vegetables). While a comparative study has not been conducted, a great deal of research has shown that the presence or absence of supermarkets effects resident health outcomes.
has been artificially lowered (subsidized) by their use to pull foot traffic needed to sell more high-profit specialty items and ‘non-foods’.  

At the federal level, there are very few practical policy solutions to the issue of high margin items subsidizing the prices of staples. Before any action at the federal level is to take place, debates about the problems of below cost pricing and price discrimination (and market regulation more generally) would need to be revisited. In the 1930s through 1960s the interpretation of price discrimination law by congress, the FTC and courts focused on protecting competitors to preserve long run competitive processes; after the mid 1970s this interpretation changed to protecting competition (letting the free market go on unimpeded) not protecting competitors (Calvani & Breidenbach, 1990; De Toro, 1983). This interpretation of price discrimination would need to change.

The most likely legal avenues to reduce food deserts in economically disadvantaged areas are state below cost pricing laws (especially with minimum mark-up clauses). While future research is needed to demonstrate this point, these laws may provide a market for smaller grocery stores to compete with the sale of staples by supermarkets (who would be limited by law in subsidizing these prices with high margin items). Oller (2011) showed that state below cost laws (especially laws with minimum mark-up clauses) lead to more small grocery stores. Future research would do well to expand upon the relationship between below cost pricing laws and grocery store location patterns. Even more, an investigation of the moderating impact of below

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34 Grocery store decision makers may better fit into low income areas by taking this advice as well. Low margin staples are priced too low to be competitively sold without some type of subsidization. Further, raising prices on staples in low income areas is unlikely to garner the sales volume needed to sustain their placement in low income stores. One possibility is to find high-profit non-foods and specialty foods that low income individuals tend to buy may offset the costs associated with selling the low-profit staples. Further, if certain neighborhoods of low income consumers are willing to buy high-margin staples – such as specialty meats or organic fruits and vegetables – these low income areas would support grocery store types that focus on high-margin food sales over the sale of high-margin non-foods.
cost laws on the health outcomes of residents of areas without large supermarkets may be especially poignant.

At its heart, this chapter argues that, following ‘new institutional’ theory (c.f. Greenwood, 2008), institutional environments are the context in which the demographic attributes of neighborhoods are perceived, evaluated and acted upon by organizations. Institutional logics (c.f. Thornton, Ocasio, Lounsbury, 2012) provide an appealing avenue for investigating the ways institutional environments historically moderate the relationship between neighborhood demographics and the presence of neighborhood organizations. Using this theory, this chapter shows that the ‘neighborhood effects’ food deserts have on residents do not necessarily stem from living in an area with concentrated poverty – they stem from living in an area with concentrated poverty during the post-mid 1970s institutional logic of the grocery industry. The effect of historically contingent institutional logics of the grocery industry on the supposedly ‘market-driven’ location behaviors of grocery companies is focused on in this chapter; however, future research can examine the institutional environments of a wide variety of organizations that moderate a wide variety of neighborhood relationships. This line of research can extend theories of the ways in which institutional environments – by influencing the way organizations perceive, evaluate and act upon neighborhoods – affect the lives of neighborhood residents.
CHAPTER V
MINORITY COMPETITION AS A PREDICTOR OF AFRICAN AMERICAN FOOD DESERTS

Chapter Summary
Extending Small and McDermott’s (2006) ‘conditional perspective’, Blalock’s (1967) minority competition theory is used to explain how the relationship between African Americans and the number of supermarkets in a zip code depends on the city in which it resides. 2010 American Community Survey and ZIP Business pattern data are examined with hierarchical general linear models to explore whether the previously observed negative relationship between the percentage of African Americans and the number of supermarkets in a zip code depends on the percentage of African Americans in the city. The results show that the relationship between the percentage of African American and the number of supermarkets depends on the percentage of African Americans in the city in the U-Shaped pattern predicted by minority competition theory. Applications of minority competition to other theories of the unequal distribution of resources in cities are discussed.

According to chapter 3, at least for nine urban areas, the relationship between the percentage of African Americans and the presence of supermarkets in zip codes was consistently negative from 1970 to 1990. While I do not uncover historical variation, there may be between city variation in the relationship between the percentage of African Americans and the presence of supermarkets in zip codes. My historical data set of nine cities is too small to reliably decipher between city variation in this relationship. In lieu of historical data\textsuperscript{35}, I use a 2010 data set of 366 U.S. cities to examine whether the relationship between the percentage of African Americans and number of supermarkets in a zip code varies by city.

As discussed in Chapter 2, agreeing with (a non-historical version of) Massey and Denton (1993), and contrary to Wilson (1987; 1996), this dissertation argues the percentage of African Americans in a neighborhood has an effect on the presence of organizations, independent of income. However, modifying Massey and Denton's thesis, I use minority competition theory to

\textsuperscript{35} Future research (with a larger sample of cities) can use a similar method to examine by-city relationships (and possible interaction effects between industry and city variables) historically.
show that the relationship between the percentage of African Americans and the presence of organizations in a neighborhood depends on the city in which it resides. It is my hypothesis that the relationship between the percentage of African Americans and number of supermarkets in a neighborhood is contingent upon city minority competition (Blalock, 1967) dynamics.

**Minority Competition Theory**

Perhaps known more widely as racial threat theory, Blalock (1967) proposed minority competition theory as a way to describe how macro level processes effect motivations to discriminate which, in turn, effects inequalities between races. The current study lacks measures of motivations to discriminate (though possibilities for future conceptualizations and measurements are presented in the conclusion); however, while measures of motivations to discriminate should be desired where available (e.g. Quillian, 1996; Stults and Baumer, 2007), Blalock (1967) argues that by studying how the percentage of minorities relates to unequal outcomes between groups we can infer how discrimination occurs (Also see for example Behrens, Uggen and Manza 2003; Jacobs and Carmichael 2002; Welch and Payne 2010).

In essence, minority competition theory states that as a minority group becomes a greater threat to the resources of the majority group, this majority group will increasingly use discriminatory means to maintain resources. While there are other factors involved in the threat minorities pose to the majority, a higher percentage of minorities is largely understood as the primary way minorities will provoke a perceived threat in the majority. That is, as the percentage of minorities increase, this increase will provoke a greater motivation by the majority to hoard resources away from this minority group. However, since discrimination is cumulative, as the percentage of minorities grows the minority group will become less of a threat (due to their
greater handicap). For example, a 5% minority increase will create a greater degree of inequality going from 10-15% compared to 30-35% (Blalock 1967:147-150). Continuing with this idea, as others have noted (e.g. Horowitz 1985; Turk 1969), as the percentage of minorities becomes large, they will be able to gain some ability to attenuate the already high effects of discrimination. As such, minority competition theory predicts a non-linear relationship (a decreasing then slightly reversing slope) between the percentage of minorities and racial inequality.

Research on minority competition has typically focused on the effect of the percentage of minorities on punishment practices (also called punishment power by Blalock). While not universally supported, minority competition theory has found that increases in the percentage of minorities relates to such phenomena as police use of deadly force (Chamlin 1989), the death penalty (Jacobs and Carmichael 2002), interracial killings (Jacobs and Wood 1999), high school punitiveness (Welch and Payne 2010) and disenfranchisement (Behrens, Uggen and Manza 2003). Despite this large body of research there are few studies on the impact of minority competition on the unequal distribution of resources across groups (also called reward power by Blalock). Although it was also theorized to predict unequal economic outcomes, minority competition research incorporating economic indicators tends to use them as causal variables of motivations to discriminate: also known as ‘economic threat’ (e.g. Bonacich 1972; Eitle, D'Alessio and Stolzenberg 2002; Olzak 1990; Parker, Stults, Rice 2005; Stults and Baumer 2007). The minority competition theory elaborated by Blalock conflates economic indicators as

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36 There have been a few variations on Blalock’s (1967) early work on minority competition theory (Eitle, D'Alessio and Stolzenberg, 2002) as well as Blumer’s (1958) earlier theory that discrimination and prejudice are contingent upon group position (and feelings of privilege and threat that arise from group positioning). I focus on Blalock’s (1967) theory to avoid too much confusion between theories with slight variations.
both causes of motivations to discriminate and as outcomes of the competitive threat minorities pose that motivate discrimination. Though future theorizing should attempt to do so, this study does not elaborate how to separate economic indicators as causes and effects of motivations to discriminate. This chapter simply points out that the minority competition process can prove useful in understanding causes of the unequal distribution of resources across groups.

This chapter suggests that minority competition processes effect racial inequalities in the resources organizations provide across neighborhoods. The focus here is on supermarkets due to the influence supermarket placement (or a lack thereof) has on communities and its residents. Research on supermarket placement has focused on neighborhood demographics as causal variables finding that, among other things, a higher percentage of African Americans will decrease the number of supermarkets in an area. However, it is hypothesized here that this relationship between the percentage of African Americans and number of supermarkets in a neighborhood is contingent upon city minority competition dynamics. Specifically, it is hypothesized that the effect of the percentage of African Americans on the number of supermarkets in a zip code depends on the (non-linear) competitive threat of African Americans in the city in which the neighborhood resides: an increase in the percentage of African Americans in a city will increase the negative relationship between African Americans and supermarkets in the zip codes of a city, though this increasing effect will slow and even somewhat decline at higher levels.

Data and Methods

Summary statistics for the variables used in this study are presented in Table 11. The level 1 unit of analysis is the five digit zip code, which is to be preferred over smaller geographic
units such as census tracts for economic activity (Bingham & Zhongcai, 2001; Small & McDermott, 2006). Data for the dependent variable - the number of supermarkets in a zip code - come from the Census 2010 ZIP business patterns. The North American Industry Classification System (NAICS) code 445110 for ‘Supermarkets and Other Grocery (except Convenience) Stores’ is used in this study. Previous research has shown that supermarkets and other larger grocery stores (with 20 or more employees) tend to be placed in White areas while small grocery stores (with 19 or fewer employees) are more common in African American neighborhoods (Alwitt and Donley 1997; Moore and Diez Roux 2006; Morland et al. 2002; Sloane et al. 2003; Small and McDermott 2006). While the NAICS separates convenient stores from grocery stores and supermarkets, many of the stores in NAICS 445110 may be conceptually similar to convenience stores (i.e. they do not sell fresh fruits and vegetables). For example, Horowitz et al. (2004) found that only 18% of small grocery stores in a predominantly racial minority neighborhoods sold healthy foods. Further, a lack of larger grocery stores and supermarkets (compared to small groceries) has been associated with higher grocery prices (Chung and Myers 1999). Given the suspect availability of fresh fruits and vegetables at average market prices in smaller grocery stores, this study only looks at grocery stores and supermarkets with over 20 employees.37

Data for the level 1 and level 2 independent variables come from the 2007-2011 American Community Survey 5 year estimates. The level 1 variables are at the ZIP Code Tabulation Area (ZCTA) level (n=16690). While ZCTAs differ from zip codes they do not tend to differ dramatically, especially for economic indicators. According to Bajaj et al (2011), around 97% of the number of establishments in 2000 zip codes matched the number of establishments in

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37 A measure of stores with over 50 employees was also used (c.f. Alwitt and Donley, 1997; Moore, Diez Roux. 2006) which led to similar results.
2000 ZCTAs. While not ideal, it is justifiable to use ZCTAs and Zip Codes interchangeably as is done in this analysis. The level 2 variables are at the metropolitan statistical area (MSA) level (n=366). The ZCTA level data (level 1) are ‘nested within’ the MSA level data. A ‘centroid’ approach is used with GIS technology to create a ‘ZCTAs within MSAs’ multi-level structure. The centroid approach creates a geographic center point for each ZCTA; ZCTAs with a center point within a MSA boundary are taken as nested within the MSA. As a result, zip codes partly within MSAs but with center points outside the MSAs are excluded from the analysis. Further, 481 ZCTAs (<3%) had incomplete information and are removed from the analysis; all cases removed have less than 10 (and in most cases 0) population.

The percentage of African Americans is the main level 1 variable of interest in this study. Central city location (a binary variable) and the percentage of people in poverty have also been associated with supermarket placement (Algert, Agrawal and Lewis 2006; Lee and Lim 2009; Morland et al. 2002; Powell et al. 2007; Zenk et al. 2005) and are included in this analysis. Population density is also included in the models analyzed. To construct the population density variable the log of the population is calculated (to account for the uneven distribution of population in primarily residential vs. primarily business zip codes) and then multiplied by the area of the ZCTA.

This study largely follows the level 2 control variables used in the only other paper to investigate city effects on the neighborhood resources organizations provide (Small & McDermott 2006). The level 2 control variables include population density, percentage

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38 In other models (not shown) the mean household income of the zip code (and of the city as a whole) was used as a variable instead of percent poverty; these models led to similar results as those presented here. Mean household income and percent poverty are conceptually similar so controlling for one while analyzing the other makes little sense analytically (not to mention creating problems of multicollinearity).
unemployed and percentage of people in poverty. A categorical variable for region is also used with the following common categories: Northeast, Midwest, West and South (South is the reference category). The main level 2 variable of interest is the percentage of African Americans in the city. As is common in investigations of minority competition theory, quadratic terms are used with percentage African American to identify the non-linear (U-Shaped) relationship predicted by minority competition theory.

The distribution of supermarkets is over-dispersed (where the conditional variance exceeds the conditional mean) and positively skewed due to the larger amount of zip codes with a low amount of stores and a finite limit of zero. As a result, all models are estimated as a Poisson distribution with over-dispersion (Raudenbush and Bryk 2002). Grand mean centering (and uncentered variables) will always complicate analyses when group means vary substantially (Raudenbush and Bryk 2002). Grand mean centering is especially problematic for cross-level interactions because grand mean centered level 1 variables contain both within and between group variation. Group mean centering removes all between-city variation from the independent variables, leaving level 1 slope coefficients that only measure within-city variation. Accordingly, level 1 variables are group mean centered to allow for truly separate analyses of level 1 relationships and the moderation of these relationships by level 2 variables (Enders & Tofghi 2007; Hofmann and Gavin 1998; Raudenbush 1989). Also, all level 2 predictors are entered at both the random percent African American slope and the intercept to parse out their unique effects, which may be correlated otherwise (Raudenbush and Bryk 2002:151).
Results

Table 12 presents logged odds from the Poisson model with only zip code (level 1) predictors of the number of supermarkets in a zip code. The significance of population density, percent of people in poverty and central city location on supermarket placement is consistent with previous research. The results show that a central city location is associated with a 273% increase ($e^{1.316}$) in supermarkets as compared to other areas. Further, for every 10% increase in the percent of people in poverty in a zip code, there is a 5% decrease ($e^{-0.0048\times10\%}$) in the number of supermarkets in the zip code. The main variable in this analysis – the percent of African Americans in a zip code – is also significantly related to the number of supermarkets. As shown in table 12, for every 10% increase in the percent of African Americans in a zip code, there is a 2.5% decrease ($e^{-0.025\times10\%}$) in the number of supermarkets in the zip code.

When the level 1 intercept and percent African American slope are made random (allowed to vary across cities) they are shown to have statistically significant variation ($p < 0.001$) across cities.\(^{39}\) For hierarchical linear models using a Poisson distribution the level 1 variance depends on the expected mean (Goldstein, Browne and Rasbash 2002; Small and McDermott 2006). Therefore, this analysis can only provide the within and between variances for a zip code with the average log number of supermarkets. Given these limitations, the proportion of variance explained by each level (the intra-class correlation) for a zip code with the

\(^{39}\) The percent African American slope becomes positive when it is made random (without any predictors). This is because once the slope is made random the groups are no longer centered within cities as these slopes are subtracted from the between city (grand) mean. As such, this variation at the slope’s intercept takes into account both within and between city variations. This is a positive sign for eliminating racial disparities: the fact that the within city percent African American slope is negative while the random percent African American slope is positive means the negative %African American relationship can be predicted to become positive with city level variables. This chapter does not completely resolve the issue but provides important insights towards resolving racial disparities in the resources organizations provide.
average log number of supermarkets shows that about 11.2% of the variation in supermarkets occurs between cities compared to 88.8% variation within cities. The between city (level 2) variation in the percent African American slope is significant (p < 0.001) and explains 0.002% of the total variation in the number of supermarkets per zip code. While the effect of cities on the percent African American slope explains a small amount of the total variation in the number of supermarkets in a zip code, it is both statistically and theoretically significant – explaining how cities moderate the relationship between the percentage of African American and the number of supermarkets in a zip code.

**Table 13** presents the logged odds from the multilevel Poisson model predicting the number of supermarkets in a zip code. Both the level 1 intercept and the level 1 slope of percentage African American in a zip code are random with level 2 predictors. Looking at the predictors of the intercept, the unemployment rate, the percent in poverty and the region of a city significantly predict the number of supermarkets per zip code in a city. However, the percent in poverty and unemployment rate predict the number of supermarkets in opposite ways: a smaller percentage in poverty but a *higher* unemployment leads to more supermarkets per zip code in a city.40 The categorical region variable shows that there are more supermarkets per zip code in the West compared to any other region, followed by the South, Northeast and Midwest. Population density is not a significant predictor and the percentage of African Americans in the city only (positively and linearly) predicts the number of supermarkets per zip code in the city at the p < 0.1 level.

Table 13 also presents the level 2 predictors of the relationship between the number of supermarkets and percentage African Americans in a zip code. Looking at the predictors of the

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40 While this result is tangential to the purpose of this chapter, these results suggest further theoretical elaboration of the meaning and supposed effects of different economic indicators.
percent African American slope, the proportion of people in poverty significantly predicts the relationship between the percentage of African Americans and the number of supermarkets in a zip code: as the poverty rate of a city increases the African American slope becomes less negative. Population density, unemployment and region do not significant predict the percent African American slope.

The primary focus of this study is whether and how the percentage of African Americans in the city moderates the relationship between the number of supermarkets and percentage African American in a zip code. Table 13 confirms the minority competition hypothesis. The level 1 percent African American slope is significantly and non-linearly moderated by the percentage of African Americans in the city. Figure 8 further elaborates the non-linear moderation of the percentage of African American in the city on the relationship between the percentage of African Americans and number of supermarkets in a zip code. Figure 8 graphs the slope of the percentage of African Americans on the number of supermarkets in a zip code across different levels of the percentage of African Americans in a city. At very low levels of the percent African American in the city, the negative slope is small. The negative slope is largest at medium levels of percent African American in the city. After 19% African American in the city (the inflection point), the negative slope begins to decrease slowly. Numerically, at 1% African American in the city, for every 10% increase in the percentage of African Americans in a zip code there are 4% fewer supermarkets. This relationship changes to 15.6%, 28.1% and 23.7% fewer supermarkets for cities with 5%, 20% and 35% African American respectively.
Discussion

This chapter extends Small and McDermott's (2006) 'conditional perspective' of neighborhood effects by investigating whether city minority competition (Blalock, 1967) moderates the negative effect of the percentage of African Americans on the number of supermarkets in a zip code. Consistent with previous research on supermarket placement patterns, the results show a negative relationship between the percentage of African Americans and number of supermarkets in a zip code. However, the variation between cities in this percent African American slope is statistically significant: the relationship between the percentage of African Americans and number of supermarkets in a zip code depends on the city in which the zip code resides.

The minority competition theory predictor – the percentage of African Americans in a city and its quadratics – significantly predicts the between city variation in the African American slope. Reinterpreting the results in terms of minority competition theory, the results show that at low levels of African Americans in a city there is low perceived threat and low inequality in the placement of supermarkets. As the percentage of African Americans in the city increases, supermarkets are increasingly located away from African Americans; However, at high levels of African Americans in a city, the increasing unequal distribution of supermarkets away from African Americans declines - theoretically due to the cumulative effect of discrimination and the increased ability to attenuate discrimination when numbers are high. These results confirm that, at least for supermarkets, minority competition theory can prove useful in explaining how city dynamics moderate the location of organizations away from African Americans.
Conclusion

This chapter primarily extends the conditional perspective of neighborhood effects elaborated by Small and McDermott (2006) to the effect of the percentage of African Americans on the number of supermarkets. The article is also a call to incorporate minority competition theory into studies of the location of beneficial organizations (and the resources they provide) away from African Americans. As noted, previous studies of minority competition tend to take the economic resources of minorities as a potential cause of perceived threat (known as economic threat). Extending minority competition theory is somewhat problematic due to its conflation of economic resources as both a cause and effect of the perceived threat of competition by the majority. Future theorizing and research should attempt to separate economic resources as cause or effect. Different measures of perceived economic threat and the actual distribution of resources may be helpful. Longitudinal studies will likely provide the best opportunity for examining whether increases/decreases in economic resources of a minority group precede or proceed perceived threats by the majority.

Along the lines of investigating causes of perceived threat and inequality, Quillian (1996) argues that a true test of minority competition theory should incorporate the mediating effect of individual beliefs about threat (which then lead these individuals to take discriminatory action). This study lacks the discrimination/prejudice component of the minority competition model that future research will hopefully provide. Even more though, the actors involved in minority competition dynamics should be empirically elaborated. While studies of levels of individual prejudice and discrimination are certainly apt, the perceived threat of minorities by the majority may or may not reflect the attitudes of individual residents (Blumer 1958). The effect of minority competition may work more broadly – inducing a culture of minority threat in the city. For
example, a culture of minority threat may provoke a heightened sense of privilege for a largely
majority area to accrue more resources than an area with more minorities (e.g. Blumer 1958), a
heightened collectively understood stigma of minority dominant areas (e.g. Anderson 1992), a
built environment that both distinguishes groups and portrays their threat (e.g. Caldeira 2001), or
a more salient attitude that, since others are prejudice, home or store sales will suffer where
minorities are more common (and should be avoided).

Further, when investigating those who discriminatorily react to perceived threats of a
minority group, urban regime theory (Stone 1989) and urban political economy (Logan and
Molotch 1987) may provide an avenue for future research. Both urban regime and urban political
economy theory look past the demand-based or pluralist view of the distribution of resources in a
city. Instead, these theories focus on elite coalitions and ‘growth machines’ who attempt to
construct and organize the city in ways that serve their particular interests. In large part, these
theories ignore the independent effects of racial dynamics, viewing race as one component to
consider in the pursuit of the economic interests of those who govern (Kraus 2004). As a group
conflict theory in its own right, minority competition theory can be studied along with urban
regime and urban political economy theories to investigate the unequal distribution of resources
in cities. One possibility is that minority competition occurs on elites through the perceived
distinctness of a minority group when their numbers are large (e.g. Blumer, 1958). For example,
when the percentage of African Americans grows large, efforts attempting to foster growth may
treat African Americans as a group distinct from – and threatening to – the mainstream ‘growth
machine’ projects. Further, there may be an interaction between elites and a general culture of
threat in a city – where elites work to exploit the perceived threat of the majority, sometimes for
the gain of elites, sometimes for the gain of the majority (e.g. see Tomaskovic-Devey and Roscigno 1996).

Finally, as noted, supermarkets were chosen due to their noted influence on communities and its residents. While the correlates of supermarkets are discussed in this chapter (percentage African American), the ways a city can moderate the effect of living in an area with limited access to supermarkets are not investigated. Using a similar methodology, future research might look at possible city specific dynamics that moderate the impact of living in an area with limited access to supermarkets (or any other detrimental neighborhood characteristic). For example, community organizations and government efforts to help those with limited access to supermarkets may alleviate the stigma or negative health impacts living in an area without supermarkets might have. While efforts by cities to bring supermarkets to underserved areas are rare (Pothukuchi, 2005), alternative city specific initiatives (e.g. see Anderson, 2007; Karpyn, Young and Weiss, 2012) such as subsidies for fruits and vegetable sales in underserved areas or well-funded public transportation and food stamp programs may also prove a ‘conditional perspective’ of the effect of supermarkets on communities and its residents.
CHAPTER VI

CONCLUSION

The existing literature on ‘food deserts’ suggests that areas that lack supermarkets tend to have fewer available jobs (Strait 2001) less social cohesions (Blanchard et al. 2003; Eisenhauer 2001; Oldenburg 1989) more expensive food (Chung and Myers 1997; Kaufman et al. 1997) and promote negative health outcomes for local residents (Franco et al. 2009; Laraia et al. 2004; Lopez 2007; Michimi and Wimberly 2010; Moore et al. 2008; Morland, Wing and Diez Roux 2002; Morland and Kelly 2009; Powell et al. 2007). The food desert literature has also shown that supermarkets are much less common in urban areas with a higher percentage of those in poverty, a higher proportion of African Americans, and a populous with lower income. Despite the expansive literature on ‘food deserts’ and massive history of urban sociological research and theory, these two literatures have evaded each other. Instead of elaborating ‘food deserts’ as a more general (urban) problem of neighborhood resource disparities, the (largely public health) ‘food desert’ literature has tended to take the correlates of supermarket location as their cause. This dissertation incorporates urban sociological theory into the study of food deserts in order to better understand the causes of the presence of supermarkets in neighborhoods (or lack thereof).

This dissertation shows that the ‘neighborhood effect’ explanations of the lack of material and symbolic resources in low income and high percentage African American neighborhoods – specifically disparities in the presence of supermarkets – are insufficient. Despite their differences, current policies attempting to attract resource to underserved areas (c.f. Hyra, 2013), research on food deserts (c.f. Beaulac, Kristjansson, & Cummins, 2009; Larson, Story, & Nelson, 2009; Lovasi et al., 2009) the ‘deinstitutionalized ghetto’ hypothesis (Wacquant 2008;
Wilson, 1996) and the hypothesis of the continuing significance of race (Massey and Denton, 1993) all follow (in one way or another) the ‘neighborhood effect’ model of the location of organizations: particular demographics cause the location of organizations and these relationships between organization location and demographics remain stable over time.

Following previous research on the effect of cities and organizations on neighborhood resources (e.g. Marwell, 2007; Small and McDermott, 2006; Small, 2009) this dissertation developed and empirically demonstrated two theories of how cities and industries moderate the presence of supermarkets in economically disadvantaged and African American zip codes.

First, this dissertation showed how ‘new institutionalism’ (c.f. Greenwood, 2008; Thornton, Ocasio, Lounsbury, 2012) can be used to investigate the causes of, and possible solutions to, the scarcity of organizations (and the resources they provide) in low income areas. It was argued that historically contingent institutional logics are the context in which neighborhoods are perceived, evaluated and acted upon by organizations. Statistical results from nine cities showed that in 1970 economically disadvantaged zip code were not under served by supermarkets. From 1970 to 1990 supermarkets exited economically disadvantaged zip codes (in favor of high income/low poverty zip codes) to an extent that cannot be accounted for by changes in demographics.

I then explained this changed relationship between supermarket location and economic disadvantage by showing how the institutional logic of the grocery industry – which shifted around the mid 1970s – moderates the relationship between economic disadvantage and supermarket locations. From the 1930s to the early 1970s the grocery industry had an institutional logic of ‘economies of scale’: growth through increasing sales volume. A new ‘mix margin merchandising’ logic came about after the mid 1970s: using low margins on high demand items (especially ‘staples’) to gain the foot traffic needed to increase sales of high margin items.
Further analysis showed that during the transitionary years of the industry (1970 to 1983) supermarkets were less likely to locate in economically disadvantaged zip codes when operating under a mix margin philosophy. These results indicate that a shift to a ‘mix margin merchandising’ institutional logic corresponded with a devaluation of (and exodus from) economically disadvantaged areas by the grocery industry after the mid 1970s.

Second, this dissertation showed how minority competition theory helps explain the negative relationship between the percentage of African Americans and the presence of supermarkets in a zip code. Using 2010 U.S. national data, the results showed that at low levels of African Americans in a city there is low ‘perceived threat’ and low inequality in the placement of supermarkets. As the percentage of African Americans in the city increases, supermarkets are increasingly located away from African Americans; However, at high levels of African Americans in a city, the increasing unequal distribution of supermarkets away from African Americans declines - theoretically due to the cumulative effect of discrimination and the increased ability to attenuate discrimination when numbers are high.

In essence, this dissertation suggests that the ‘neighborhood effects’ explanation of the presence of organizations in neighborhoods can be better understood as ‘city and/or industry’ (or more generally ‘extra-local’) effects. In the same respect, instead of attempting to change the demographics of neighborhoods to solve neighborhood resource disparities – the most widely used policy tactic (c.f. Hyra, 2013) – policy makers would likely do better to change the city and industry causes of these disparities.
Policy Implications

Institutional policies

Policies that promote or create mixed-income housing neighborhoods may attract supermarkets but, unfortunately, these policies can also promote gentrification (Hyra, 2013). Conversely, policies addressing the moderating effects of organizational dynamics on neighborhoods seem less likely to displace the residents of these neighborhoods. The results of this dissertation indicate that policies addressing the institutional logic of the grocery industry may help produce more supermarkets in economically disadvantaged areas. In order to address the problem of food deserts 41 policy makers must take into account that the profit made from ‘staples’ has been artificially lowered (subsidized) by their use to pull foot traffic needed to sell more high-profit specialty items and ‘non-foods’.

At the federal level, there are very few practical policy solutions to the issue of high margin items subsidizing the prices of staples. Before any action at the federal level is to take place, debates about the problems of below cost pricing and price discrimination (and market regulation more generally) would need to be revisited. In the 1930s through 1960s the interpretation of price discrimination law by congress, the FTC and courts focused on protecting competitors to preserve long run competitive processes; after the mid 1970s this interpretation changed to protecting competition (letting the free market go on unimpeded) not protecting

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41 As stated, the mix margin logic may have beneficial outcomes for low income residents: If access is less of a factor for health compared to the price of staples (especially fruits and vegetables), the mix margin logic should be favored since it lowers the prices of staples. If access is more of a factor for health compared to price then future research, theory and policy should deal with the fact that high margin items subsidize the prices of staples (especially fruits and vegetables). While a comparative study has not been conducted, a great deal of research has shown that the presence or absence of supermarkets effects resident health outcomes.
competitors (Calvani & Breidenbach, 1990; De Toro, 1983). This interpretation of price discrimination would need to change.

The most likely legal avenues to reduce food deserts in economically disadvantaged areas are state below cost pricing laws (especially with minimum mark-up clauses). While future research is needed to demonstrate this point, these laws may provide a market for smaller grocery stores to compete with the sale of staples by supermarkets (who would be limited by law in subsidizing these prices with high margin items). Oller (2011) showed that state below cost laws (especially laws with minimum mark-up clauses) lead to more small grocery stores. Future research would do well to expand upon the relationship between below cost pricing laws and grocery store location patterns. Even more, an investigation of the moderating impact of below cost laws on the health outcomes of residents of areas without large supermarkets may be especially poignant.

On a similar note, supermarket (location) decision makers may better fit into low income areas by understanding how to make a store profitable without relying on the high-margin items low income consumers do not purchase. Low margin staples are priced too low to be competitively sold without some type of subsidization. Further, raising prices on staples in low income areas is unlikely to garner the sales volume needed to sustain their placement in low income stores. One possibility is to find high-profit non-foods and specialty foods that low income individuals tend to buy, which may offset the costs associated with selling the low-profit staples. Further, if certain neighborhoods of low income consumers are willing to buy high-margin staples – such as specialty meats or organic fruits and vegetables – these low income areas would support grocery store types that focus on high-margin food sales over the sale of high-margin non-foods.
City level minority competition policies

The policy implications of minority competition are less straightforward. Prior research on minority competition theory tends to present the results as implicative in themselves: that is, the fact that minority competition effects punishment against the minority group provides evidence that punishment should be reduced. This is true here as well – the fact that minority competition leads to fewer supermarkets in neighborhoods with more African American provides evidence that disparities in supermarkets should be reduced. The specific, real world policy implications are much less clear.

In order to create real world policies, research must first empirically elaborate the actors involved in minority competition dynamics. While studies of levels of individual prejudice and discrimination are certainly apt, the perceived threat of minorities by the majority may or may not reflect the attitudes of individual residents (Blumer 1958). The effect of minority competition may work more broadly – inducing a culture of minority threat in the city. For example, a culture of minority threat may provoke a heightened sense of privilege for a largely majority area to accrue more resources than an area with more minorities (e.g. Blumer 1958), a heightened collectively understood stigma of minority dominant areas (e.g. Anderson 1992), a built environment that both distinguishes groups and portrays their threat (e.g. Caldeira 2001), or a more salient attitude that, since others are prejudice, home or store sales will suffer where minorities are more common (and should be avoided).

Further, when investigating those who discriminatorily react to perceived threats of a minority group, urban regime theory (Stone 1989) and urban political economy (Logan and Molotch 1987) may provide an avenue for future research and policy ideas. Both urban regime and urban political economy theory look past the demand-based or pluralist view of the
distribution of resources in a city. Instead, these theories focus on elite coalitions and ‘growth machines’ who attempt to construct and organize the city in ways that serve their particular interests. In large part, these theories ignore the independent effects of racial dynamics, viewing race as one component to consider in the pursuit of the economic interests of those who govern (Kraus 2004). As a group conflict theory in its own right, minority competition theory can be studied along with urban regime and urban political economy theories to investigate the unequal distribution of resources in cities. One possibility is that minority competition occurs on elites through the perceived distinctness of a minority group when their numbers are large (e.g. Blumer, 1958). For example, when the percentage of African Americans grows large, efforts attempting to foster growth may treat African Americans as a group distinct from – and threatening to – the mainstream ‘growth machine’ projects. Further, there may be an interaction between elites and a general culture of threat in a city – where elites work to exploit the perceived threat of the majority, sometimes for the gain of elites, sometimes for the gain of the majority (e.g. see Tomaskovic-Devey and Roscigno 1996). By empirically elaborating minority competition dynamics we will be better able to create policies that eliminate their negative effects.

**Theoretical Implications and Future Research**

Regardless of how exactly minority competition dynamics occur in cities, this dissertation argues and empirically demonstrates that minority competition theory can be used to explain why zip codes with a higher percentage of African Americans have fewer supermarkets. Future research can investigate whether minority competition dynamics can explain why
neighborhoods with a higher percentage of African Americans have fewer resources and/or more problems (e.g. social/physical disorder, environmental degradation, fear of crime).

Further, this dissertation argues that, following ‘new institutional’ theory (c.f. Greenwood, 2008), institutional environments are the context in which the demographic attributes of neighborhoods are perceived, evaluated and acted upon by organizations. Institutional logics (c.f. Thornton, Ocasio, Lounsbury, 2012) provide an appealing avenue for investigating the ways institutional environments historically moderate the relationship between neighborhood demographics and the presence of neighborhood organizations. Using this theory, this dissertation showed that the ‘neighborhood effects’ food deserts have on residents do not necessarily stem from living in an area with concentrated poverty – they stem from living in an area with concentrated poverty during the post-mid 1970s institutional logic of the grocery industry.

The dissertation focuses on the effect of historically contingent institutional logics of the grocery industry on the supposedly ‘market-driven’ location behaviors of grocery companies; however, future research can examine the institutional environments of a wide variety of organizations that moderate a wide variety of neighborhood relationships. For example, future research could examine how the rental industry changed over time and between cities to affect the resources neighborhoods provide. The rental industry differs from the supermarket industry in that it is a more crowded field dominated by local players; nevertheless, major players dominate local contexts, and they are likely to be shaped by isomorphic tendencies spanning city environments. It is possible the institutional logic of the rental industry changed (e.g. became increasingly focused on ‘flexible risk’ over ‘housing development’ to accrue profit), which then had effects on neighborhood stability, social capital and/or resident health outcomes.
Outside of institutional logics, researchers can investigate the effects of institutional environments on neighborhoods in a variety of ways. For example, since organizations attempt to gain legitimacy in an institutional environment (DiMaggio & Powell, 1983) this attempt to gain legitimacy may affect the ways in which organizations act upon neighborhoods (e.g. Marwell, 2007). For example, Steensland (2006) showed that a changed cultural category of those in poverty (reclassified as unworthy) in 1960s and 1970s America diffused through institutions, affecting welfare policies. It is possible that in order to make an organization legitimate, an organization must distinguish between the deserving and undeserving neighborhoods in a wide variety of institutional environments. This line of research can extend theories of the ways in which institutional environments – by influencing the way organizations perceive, evaluate and act upon neighborhoods – affect the lives of neighborhood residents. A generalized model of this ‘institutional theory of neighborhood effects’ is presented graphically in Figure 9.

Finally, as noted, supermarkets were chosen due to their noted influence on communities and its residents. While the correlates of supermarkets are discussed in this dissertation, the ways cities and industries can moderate the effect of living in an area with limited access to supermarkets are not investigated. Using a similar methodology, future research might look at possible city or industry dynamics that moderate the impact of living in an area with limited access to supermarkets (or any other detrimental neighborhood characteristic). While efforts to bring supermarkets to underserved areas are rare (Pothukuchi, 2005), community organizations and government efforts to help those with limited access to supermarkets may alleviate the stigma or negative health impacts living in an area without supermarkets might have (e.g. see Anderson, 2007; Karpyn, Young and Weiss, 2012). Other possible city specific solutions include
subsidies for fruits and vegetable sales in underserved areas or well-funded public transportation and food stamp programs.

Further, as discussed, below cost pricing laws with minimum mark-ups may open up opportunities for small grocery stores or fruit and vegetable markets to compete with supermarkets; along with bringing more supermarkets into low income areas, these opportunities for alternative stores may moderate the effects of a lack of supermarkets on neighborhoods. This dissertation elaborated and demonstrated how industry and city dynamics moderate the effect of neighborhood demographics on the presence of supermarkets; these theories can easily be applied to the ways in which city and industry dynamics moderate the effect of the presence of supermarkets (and other neighborhood resources) on communities and its residents.
<table>
<thead>
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<th>Variable</th>
<th>1970 (n=204)</th>
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<td>Min/Max</td>
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<td>1021/705</td>
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**Table 1**

‘By Year’ Summary Statistics
Table 2

‘Differenced Data’ Summary Statistics

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<th>1990-1980 (n=201)</th>
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<td>Mean (sd)</td>
<td>Min/Max</td>
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<tr>
<td>Super Markets</td>
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<td>-7/6</td>
</tr>
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<td>Population</td>
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<td>%Black</td>
<td></td>
<td>5.48 (9.41)</td>
<td>-16/40</td>
</tr>
<tr>
<td>%Poverty</td>
<td></td>
<td>2.13 (3.7)</td>
<td>-9/22</td>
</tr>
<tr>
<td>HH Income (2000 CPI Adjusted)</td>
<td></td>
<td>-2950 (5556)</td>
<td>15143/31266</td>
</tr>
</tbody>
</table>
Table 3

*Models Predicting the Number of Super Markets per Zip Code (per year)*

<table>
<thead>
<tr>
<th>Variables</th>
<th>1970</th>
<th>1980</th>
<th>1990</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Models predicting the relationship between poverty &amp; Super Markets</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log(Population)</td>
<td>0.87 (0.096)***</td>
<td>0.79 (0.11)***</td>
<td>0.86 (0.11)***</td>
</tr>
<tr>
<td>%Black</td>
<td>-0.007 (0.003)*</td>
<td>-0.003 (0.003)</td>
<td>-0.0028 (0.0029)</td>
</tr>
<tr>
<td>%Poverty</td>
<td>0.018 (0.008)*</td>
<td>0.003 (0.008)</td>
<td>-0.023 (0.007) **</td>
</tr>
<tr>
<td><strong>Models predicting the relationship between Poverty &gt; 30% &amp; Super Markets</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log(Population)</td>
<td>0.838 (0.096)***</td>
<td>0.77 (0.11)***</td>
<td>0.853 (0.109)***</td>
</tr>
<tr>
<td>%Black</td>
<td>-0.004 (0.003)</td>
<td>-0.002 (0.003)</td>
<td>-0.0047 (0.0027)~</td>
</tr>
<tr>
<td>Poverty &gt;30%</td>
<td>0.247 (0.19)</td>
<td>-0.068 (0.19)</td>
<td>-0.46 (0.16) **</td>
</tr>
<tr>
<td><strong>Models predicting the relationship between HH Income &amp; Super Markets</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log(Population)</td>
<td>0.80 (0.091)***</td>
<td>0.78 (0.11)***</td>
<td>0.94 (0.11)***</td>
</tr>
<tr>
<td>%Black</td>
<td>-0.002 (0.002)</td>
<td>-0.0009 (0.0024)</td>
<td>-0.008 (0.003) **</td>
</tr>
<tr>
<td>HH Income (10k)</td>
<td>-0.11 (0.38)</td>
<td>0.047 (0.040)</td>
<td>0.055 (0.044)</td>
</tr>
</tbody>
</table>
Table 4

*Changes in, and initial conditions of, the demographics of a zip code predicting changes in the number of super markets (over 1 decade) – No categories.*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Years</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model using poverty</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differenced Population</td>
<td>1.32 (0.29)**</td>
<td>-0.70 (0.37)~</td>
<td></td>
</tr>
<tr>
<td>Differenced %Black</td>
<td>-0.034 (0.015)*</td>
<td>0.028 (0.022)</td>
<td></td>
</tr>
<tr>
<td>Differenced %Poverty</td>
<td>-0.013 (0.038)</td>
<td>-0.0011 (0.027)</td>
<td></td>
</tr>
<tr>
<td>Initial Log(Pop)</td>
<td>-0.026 (0.019)</td>
<td>-0.013 (0.022)</td>
<td></td>
</tr>
<tr>
<td>Initial %Black</td>
<td>0.009 (0.007)</td>
<td>-0.012 (0.008)</td>
<td></td>
</tr>
<tr>
<td>Initial %Poverty</td>
<td>-0.019 (0.019)</td>
<td>-0.020 (0.019)</td>
<td></td>
</tr>
<tr>
<td>R^2</td>
<td>0.1773</td>
<td>0.0761</td>
<td></td>
</tr>
</tbody>
</table>

| **Model using HH Income** |           |          |
| Differenced Population   | 1.38 (0.28)** | -0.74 (0.37)* |
| Differenced %Black       | -0.035 (0.014)* | 0.041 (0.022)~ |
| Differenced HH Income    | -0.11 (0.24) | 0.34 (0.25) |
| Initial Log(Pop)         | -0.021 (0.018) | -0.019 (0.02) |
| Initial %Black           | 0.006 (0.006) | 0.041 (0.022)* |
| Initial HH Income        | 0.10 (0.009) | 0.34 (0.25) |
| R^2                     | 0.179       | 0.0801   |
Table 5

Changes in, and initial conditions of, the demographics of a zip code predicting changes in the number of super markets (over 1 decade) – With categories of percent Black

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model using poverty</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differenced Population</td>
<td></td>
<td>1.35 (0.29)**</td>
<td>-0.66 (0.37)~</td>
</tr>
<tr>
<td>Differenced %Black</td>
<td></td>
<td>-0.035 (0.014)*</td>
<td>0.026 (0.022)</td>
</tr>
<tr>
<td>Differenced %Poverty</td>
<td></td>
<td>-0.005 (0.038)</td>
<td>-0.0046 (0.027)</td>
</tr>
<tr>
<td>Initial Log(Pop)</td>
<td></td>
<td>-0.027 (0.019)</td>
<td>-0.16 (0.22)</td>
</tr>
<tr>
<td>Initial Low %Black (Compared to Mid %Black)</td>
<td></td>
<td>-0.13 (0.44)</td>
<td>0.24 (0.44)</td>
</tr>
<tr>
<td>Initial High %Black (Compared to Mid %Black)</td>
<td></td>
<td>0.93 (0.56)~</td>
<td>-0.50 (0.61)</td>
</tr>
<tr>
<td>Initial %Poverty</td>
<td></td>
<td>-0.018 (0.018)</td>
<td>-0.028 (0.017)~</td>
</tr>
<tr>
<td>R^2</td>
<td></td>
<td>0.1864</td>
<td>0.0715</td>
</tr>
<tr>
<td><strong>Model using HH Income</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differenced Population</td>
<td></td>
<td>1.41 (0.28)**</td>
<td>-0.70 (0.037)~</td>
</tr>
<tr>
<td>Differenced %Black</td>
<td></td>
<td>-0.035 (0.014)*</td>
<td>0.041 (0.023)~</td>
</tr>
<tr>
<td>Differenced HH Income</td>
<td></td>
<td>-0.11 (0.24)</td>
<td>0.34 (0.26)</td>
</tr>
<tr>
<td>Initial Log(Pop)</td>
<td></td>
<td>-0.023 (0.018)</td>
<td>-0.015 (0.20)</td>
</tr>
<tr>
<td>Initial Low %Black (Compared to Mid %Black)</td>
<td></td>
<td>-0.043 (0.39)</td>
<td>0.53 (0.41)</td>
</tr>
<tr>
<td>Initial High %Black (Compared to Mid %Black)</td>
<td></td>
<td>0.88 (0.55)</td>
<td>-0.60 (0.60)</td>
</tr>
<tr>
<td>Initial HH Income</td>
<td></td>
<td>-0.10 (0.087)</td>
<td>0.165 (0.111)</td>
</tr>
<tr>
<td>R^2</td>
<td></td>
<td>0.1883</td>
<td>0.0705</td>
</tr>
</tbody>
</table>
Table 6

Changes in, and initial conditions of, the demographics of a zip code predicting changes in the number of super markets (over 1 decade) – With economic categories

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model using poverty</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differenced Population</td>
<td>1.24 (0.28)***</td>
<td>-0.50 (0.37)</td>
</tr>
<tr>
<td>Differenced %Black</td>
<td>-0.031 (0.014)*</td>
<td>0.028 (0.022)</td>
</tr>
<tr>
<td>Differenced %Poverty</td>
<td>-0.0013 (0.038)</td>
<td>0.009 (0.026)</td>
</tr>
<tr>
<td>Initial Log(Pop)</td>
<td>-0.28 (0.19)</td>
<td>-0.071 (0.021)</td>
</tr>
<tr>
<td>Initial Low %Poverty (Compared to Mid %Poverty)</td>
<td>0.83 (0.30)**</td>
<td>1.01 (0.37)**</td>
</tr>
<tr>
<td>Initial High %Poverty (Compared to Mid %Poverty)</td>
<td>-0.35 (0.42)</td>
<td>0.058 (0.46)</td>
</tr>
<tr>
<td>Initial %Black</td>
<td>0.012 (0.007)~</td>
<td>-0.012 (0.007)~</td>
</tr>
<tr>
<td>R^2</td>
<td>0.211</td>
<td>0.1063</td>
</tr>
</tbody>
</table>

| **Model using HH Income**                      |             |             |
| Differenced Population                        | 1.3 (0.28)*** | -0.81 (0.36)* |
| Differenced %Black                            | -0.030 (0.014)* | 0.022 (0.022) |
| Differenced HH Income                         | -0.12 (0.24) | 0.19 (0.24) |
| Initial Log(Pop)                              | -0.25 (0.18) | -0.17 (0.21) |
| Initial Low HH Income (Compared to Mid HH Income) | -0.26 (0.42) | -1.07 (0.044)* |
| Initial High HH Income (Compared to Mid HH Income) | 0.76 (0.29)** | -0.54 (0.39) |
| Initial %Black                                | 0.010 (0.006) | -0.015 (0.007)* |
| R^2                                           | 0.207        | 0.1066      |
Table 7

*Total Supermarkets per zip code over time*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supermarkets per zip code per Log(Population)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low %Poverty</td>
<td>0.24</td>
<td>-0.05</td>
<td>0.19</td>
<td>0.05</td>
<td>0.24</td>
</tr>
<tr>
<td>Mid %Poverty</td>
<td>0.36</td>
<td>-0.11</td>
<td>0.25</td>
<td>-0.05</td>
<td>0.20</td>
</tr>
<tr>
<td>High %Poverty</td>
<td>0.29</td>
<td>-0.12</td>
<td>0.17</td>
<td>-0.10</td>
<td>0.07</td>
</tr>
<tr>
<td>Low HH Income</td>
<td>0.32</td>
<td>-0.14</td>
<td>0.18</td>
<td>-0.11</td>
<td>0.07</td>
</tr>
<tr>
<td>Mid HH Income</td>
<td>0.32</td>
<td>-0.10</td>
<td>0.22</td>
<td>0.0</td>
<td>0.22</td>
</tr>
<tr>
<td>High HH Income</td>
<td>0.29</td>
<td>-0.06</td>
<td>0.23</td>
<td>-0.03</td>
<td>0.20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>0.31</td>
<td>-0.10</td>
<td>0.21</td>
<td>-0.04</td>
<td>0.17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supermarkets per zip code</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Low %Poverty</td>
<td>2.51</td>
<td>-0.53</td>
<td>1.98</td>
<td>0.49</td>
<td>2.47</td>
</tr>
<tr>
<td>Mid %Poverty</td>
<td>3.80</td>
<td>-1.18</td>
<td>2.62</td>
<td>-0.58</td>
<td>2.04</td>
</tr>
<tr>
<td>High %Poverty</td>
<td>2.90</td>
<td>-1.21</td>
<td>1.69</td>
<td>-1.02</td>
<td>0.67</td>
</tr>
<tr>
<td>Low HH Income</td>
<td>3.24</td>
<td>-1.41</td>
<td>1.83</td>
<td>-1.12</td>
<td>0.71</td>
</tr>
<tr>
<td>Mid HH Income</td>
<td>3.38</td>
<td>-1.07</td>
<td>2.31</td>
<td>-0.09</td>
<td>2.22</td>
</tr>
<tr>
<td>High HH Income</td>
<td>3.00</td>
<td>-0.64</td>
<td>2.36</td>
<td>-0.34</td>
<td>2.02</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3.24</td>
<td>-1.04</td>
<td>2.20</td>
<td>-0.41</td>
<td>1.79</td>
</tr>
</tbody>
</table>
Table 8

**Summary Statistics**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (sd)</th>
<th>Min / Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>27350 (14939)</td>
<td>521 / 71691</td>
</tr>
<tr>
<td>%Black</td>
<td>21.15 (27.6)</td>
<td>0 / 100</td>
</tr>
<tr>
<td>%Poverty</td>
<td>15.29 (11.7)</td>
<td>1 / 65</td>
</tr>
<tr>
<td>Poverty over 30%</td>
<td>0.141 (0.348)</td>
<td></td>
</tr>
<tr>
<td>HH Income (in 1980 dollars)</td>
<td>24401 (19041)</td>
<td>1984 / 336711</td>
</tr>
<tr>
<td>Stores, Everyday Shopping</td>
<td>1.027 (1.448)</td>
<td>0 / 8</td>
</tr>
<tr>
<td>Stores, One-Stop Shopping</td>
<td>0.9082 (1.208)</td>
<td>0 / 7</td>
</tr>
</tbody>
</table>
Table 9

Predicting the Number of Super Markets per Zip Code: Stores under Everyday Shopping vs. One-Stop Shopping Philosophy

<table>
<thead>
<tr>
<th>Variables</th>
<th>Corporate Philosophy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Everyday Shopping</td>
</tr>
<tr>
<td>Poverty and supermarkets</td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-10.849 (0.900) ***</td>
</tr>
<tr>
<td>Log(Pop)</td>
<td>1.067 (0.086) ***</td>
</tr>
<tr>
<td>%Black (10%)</td>
<td>-0.076 (0.025) **</td>
</tr>
<tr>
<td>%Poverty (10%)</td>
<td>0.086 (0.064)</td>
</tr>
<tr>
<td>Poverty &gt; 30% and supermarkets</td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-10.405 (0.859) ***</td>
</tr>
<tr>
<td>Log(Pop)</td>
<td>1.030 (0.084) ***</td>
</tr>
<tr>
<td>%Black (10%)</td>
<td>-0.051 (0.019) **</td>
</tr>
<tr>
<td>Poverty &gt;30%</td>
<td>0.012 (0.177)</td>
</tr>
<tr>
<td>HH Income and supermarkets</td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-10.046 (0.836) ***</td>
</tr>
<tr>
<td>Log(Pop)</td>
<td>1.026 (0.081) ***</td>
</tr>
<tr>
<td>%Black (10%)</td>
<td>-0.044 (0.016) **</td>
</tr>
<tr>
<td>HH Income (10k)</td>
<td>0.033 (0.017) ~</td>
</tr>
</tbody>
</table>
### Table 10

*Supermarkets per zip code by category of zip code: Stores under Everyday Shopping vs. One-Stop Shopping Philosophy*

<table>
<thead>
<tr>
<th>Zip Code Category</th>
<th>Corporate Philosophy</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Everyday Shopping</td>
<td>One-Stop Shopping</td>
</tr>
<tr>
<td>Supermarkets per zip code</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low %Poverty</td>
<td>1.018</td>
<td>0.895</td>
</tr>
<tr>
<td>Mid %Poverty</td>
<td>1.154</td>
<td>1.154</td>
</tr>
<tr>
<td>High %Poverty</td>
<td>0.828</td>
<td>0.522</td>
</tr>
<tr>
<td>Low HH Income</td>
<td>0.873</td>
<td>0.596</td>
</tr>
<tr>
<td>Mid HH Income</td>
<td>1.071</td>
<td>1.714</td>
</tr>
<tr>
<td>High HH Income</td>
<td>1.090</td>
<td>1.322</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1.027</strong></td>
<td><strong>0.908</strong></td>
</tr>
</tbody>
</table>

Supermarkets per zip code per Log(Population)

<table>
<thead>
<tr>
<th>Zip Code Category</th>
<th>Corporate Philosophy</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Everyday Shopping</td>
<td>One-Stop Shopping</td>
</tr>
<tr>
<td>Supermarkets per zip code per Log(Population)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low %Poverty</td>
<td>0.098</td>
<td>0.087</td>
</tr>
<tr>
<td>Mid %Poverty</td>
<td>0.111</td>
<td>0.112</td>
</tr>
<tr>
<td>High %Poverty</td>
<td>0.080</td>
<td>0.052</td>
</tr>
<tr>
<td>Low HH Income</td>
<td>0.084</td>
<td>0.059</td>
</tr>
<tr>
<td>Mid HH Income</td>
<td>0.103</td>
<td>0.165</td>
</tr>
<tr>
<td>High HH Income</td>
<td>0.107</td>
<td>0.131</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>0.099</strong></td>
<td><strong>0.089</strong></td>
</tr>
</tbody>
</table>
Table 11

Summary Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean / %</th>
<th>Min / Max</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1: Zip Code (n = 16990)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supermarkets</td>
<td>1.23</td>
<td>0/13</td>
<td>1.69</td>
</tr>
<tr>
<td>Population Density, Logged</td>
<td>45.50</td>
<td>0 / 3785</td>
<td>97.92</td>
</tr>
<tr>
<td>Urban Area</td>
<td>0.46</td>
<td></td>
<td>0.50</td>
</tr>
<tr>
<td>%African American</td>
<td>9.68</td>
<td>0/100</td>
<td>17.02</td>
</tr>
<tr>
<td>% in Poverty</td>
<td>13.15</td>
<td>0/100</td>
<td>11.48</td>
</tr>
<tr>
<td>Level 2: City (n = 366)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population Density, Logged</td>
<td>371.41</td>
<td>17.77 / 4678.61</td>
<td>464.91</td>
</tr>
<tr>
<td>%African American</td>
<td>0.11</td>
<td>0.0 / 0.52</td>
<td>0.11</td>
</tr>
<tr>
<td>%African American²</td>
<td>0.02</td>
<td>0.0 / 0.27</td>
<td>0.04</td>
</tr>
<tr>
<td>%African American³</td>
<td>0.01</td>
<td>0.0 / 0.14</td>
<td>0.02</td>
</tr>
<tr>
<td>% Unemployed</td>
<td>4.97</td>
<td>2.20 / 9.40</td>
<td>1.12</td>
</tr>
<tr>
<td>% in Poverty</td>
<td>14.64</td>
<td>7.20 / 34.7</td>
<td>3.99</td>
</tr>
<tr>
<td>Northeast</td>
<td>0.13</td>
<td></td>
<td>0.33</td>
</tr>
<tr>
<td>Midwest</td>
<td>0.25</td>
<td></td>
<td>0.44</td>
</tr>
<tr>
<td>South</td>
<td>0.40</td>
<td></td>
<td>0.49</td>
</tr>
<tr>
<td>West</td>
<td>0.22</td>
<td></td>
<td>0.41</td>
</tr>
</tbody>
</table>
Table 12

*Fixed Effects of Zip Code Characteristics on the Number of Supermarkets*

<table>
<thead>
<tr>
<th>Level 1 Variable</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1.227 (0.012) ***</td>
</tr>
<tr>
<td>Urban Area</td>
<td>1.316 (0.030) ***</td>
</tr>
<tr>
<td>Population Density, Logged</td>
<td>0.0017 (0.0001) ***</td>
</tr>
<tr>
<td>% African American</td>
<td>-0.0025 (0.0009) **</td>
</tr>
<tr>
<td>% in Poverty</td>
<td>-0.0048 (0.0013) ***</td>
</tr>
</tbody>
</table>

*Significance code: \( \sim p < .10 \), \*\( p < .05 \), \**\( p < .01 \), \***\( p < .001 \).*
Table 13

Effects of Zip Code and City Level Variables on the Number of Supermarkets, Random Intercept and \%African American Slope

<table>
<thead>
<tr>
<th>Level 1 Variable</th>
<th>Level 2 Variable</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>Intercept (Random)</td>
<td>-0.1645 (0.0237) ***</td>
</tr>
<tr>
<td></td>
<td>Population Density, Logged</td>
<td>0.00001 (0.00005)</td>
</tr>
<tr>
<td></td>
<td>%African American</td>
<td>3.056 (1.604) ~</td>
</tr>
<tr>
<td></td>
<td>%African American (^2)</td>
<td>-6.402 (8.505)</td>
</tr>
<tr>
<td></td>
<td>%African American (^3)</td>
<td>0.411 (12.613)</td>
</tr>
<tr>
<td></td>
<td>% Unemployed</td>
<td>0.137 (0.026) ***</td>
</tr>
<tr>
<td></td>
<td>% in Poverty</td>
<td>-0.03 (0.007) ***</td>
</tr>
<tr>
<td></td>
<td>Northeast (vs. South)</td>
<td>-0.325 (0.083) ***</td>
</tr>
<tr>
<td></td>
<td>Midwest (vs. South)</td>
<td>-0.45 (0.071) ***</td>
</tr>
<tr>
<td></td>
<td>West (vs. South)</td>
<td>0.223 (0.094) *</td>
</tr>
</tbody>
</table>

\% African American

<table>
<thead>
<tr>
<th>Level 1 Variable</th>
<th>Level 2 Variable</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>Intercept (Random)</td>
<td>0.014 (0.002) ***</td>
</tr>
<tr>
<td></td>
<td>Population Density, Logged</td>
<td>-0.000001 (0.000002)</td>
</tr>
<tr>
<td></td>
<td>%African American</td>
<td>-0.4155 (0.106) ***</td>
</tr>
<tr>
<td></td>
<td>%African American (^2)</td>
<td>1.655 (0.462) ***</td>
</tr>
<tr>
<td></td>
<td>%African American (^3)</td>
<td>-1.973 (0.600) ***</td>
</tr>
<tr>
<td></td>
<td>% Unemployed</td>
<td>-0.00096 (0.00127)</td>
</tr>
<tr>
<td></td>
<td>% in Poverty</td>
<td>0.0011 (0.0004) **</td>
</tr>
<tr>
<td></td>
<td>Northeast (vs. South)</td>
<td>0.0013 (0.0034)</td>
</tr>
<tr>
<td></td>
<td>Midwest (vs. South)</td>
<td>0.0017 (0.0030)</td>
</tr>
<tr>
<td></td>
<td>West (vs. South)</td>
<td>0.0011 (0.0054)</td>
</tr>
</tbody>
</table>

Population Density, Logged

<table>
<thead>
<tr>
<th>Level 1 Variable</th>
<th>Level 2 Variable</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>Intercept (Fixed)</td>
<td>0.0011 (0.00007) ***</td>
</tr>
</tbody>
</table>

\% in Poverty

<table>
<thead>
<tr>
<th>Level 1 Variable</th>
<th>Level 2 Variable</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>Intercept (Fixed)</td>
<td>-0.0041 (0.001) ***</td>
</tr>
</tbody>
</table>

Urban Area

<table>
<thead>
<tr>
<th>Level 1 Variable</th>
<th>Level 2 Variable</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>Intercept (Fixed)</td>
<td>1.116 (0.024) ***</td>
</tr>
</tbody>
</table>
Figure 1

*Neighborhood effects model*

- **Neighborhood demographics** (e.g. Racial composition, % in poverty)
- **Neighborhood characteristics** (e.g. # of supermarkets)
- **Outcomes of neighborhood residents** (e.g. resident health)
Figure 2

*City moderation of neighborhood effects*

City dynamics

Neighborhood demographics (e.g. Racial composition, % in poverty) →

Neighborhood characteristics (e.g. # of supermarkets) →

Outcomes of neighborhood residents (e.g. resident health)
Figure 3

*Organizational moderation of neighborhood effects*

- Dynamics of organizations
- Neighborhood demographics (e.g. Racial composition, % in poverty)
- Neighborhood characteristics (e.g. # of supermarkets)
- Outcomes of neighborhood residents (e.g. resident health)
Figure 4

‘Neighborhood effect’ model based policies

- Neighborhood demographic changes (e.g. Mixed-Income Housing)
  - Neighborhood demographics (e.g. Racial composition, % in poverty)
  - Neighborhood characteristics (e.g. # of supermarkets)
  - Outcomes of neighborhood residents (e.g. resident health)
Figure 5

*Organizational moderation based policies*

Organizational policies (e.g. below cost pricing laws) → Dynamics of organization → Neighborhood demographics (e.g. Racial composition, % in poverty) → Neighborhood characteristics (e.g. # of supermarkets) → Outcomes of neighborhood residents (e.g. resident health)
Figure 6

_Institutional environment moderation of neighborhood effects_

Institutional Environments

Neighborhood demographics (e.g. Racial composition, % in poverty)

Neighborhood characteristics (e.g. # of supermarkets)

Outcomes of neighborhood residents (e.g. resident health)
Figure 7

Institutional logic / Historical moderation model of neighborhood effects

Time 1

Institutional Logic

Neighborhood demographics (e.g. Racial composition, % in poverty)

Neighborhood characteristics (e.g. # of supermarkets)

Time 2

Institutional Logic

Neighborhood demographics (e.g. Racial composition, % in poverty)

Neighborhood characteristics (e.g. # of supermarkets)
The Level 1 %Black Slope Depends on City %Black

%African American Level 1 Slope

%African American of the City

1% 5% 10% 15% 20% 25% 30% 35%
Figure 9

General institutional theory of neighborhood effects
### Appendix

<table>
<thead>
<tr>
<th>Company</th>
<th>Historical Change</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jewel</td>
<td>Early 1960s</td>
<td>Jewel 1970 S.E.C. Public Filing</td>
</tr>
<tr>
<td>Kroger</td>
<td>1972</td>
<td>Kroger 1971 S.E.C. Public Filing</td>
</tr>
<tr>
<td>Lucky</td>
<td>1982</td>
<td>Lucky 1983 S.E.C. Public Filing</td>
</tr>
<tr>
<td>Marsh</td>
<td>1977</td>
<td>See esp. Progressive Grocer, 1992. “Marsh knows supermarketing: for six decades, Marsh Supermarkets Inc. has been on the leading edge of the food business. And that's where it plans to stay.”</td>
</tr>
<tr>
<td>Safeway</td>
<td>1977</td>
<td>Safeway 1976 S.E.C. Public Filing</td>
</tr>
<tr>
<td>Winn-Dixie</td>
<td>1984</td>
<td>Winn-Dixie 1984 S.E.C. Public Filing</td>
</tr>
</tbody>
</table>
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