(Im)Mobility and Health Disparities:
Assessing Healthy Accessibility Options in an Urban Neighborhood

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Executive Summary

At the time of our proposal, scholars had already demonstrated that minorities, especially African Americans had less access to cars, especially those with less education, so they were less likely to be able to travel to healthy resources. Giuliano (2001) had argued that the answer is either to promote private car ownership or to encourage "economic development policies to increase the supply of jobs, goods and services in low income neighborhoods." However, we have relatively little information on individual activities at a neighborhood scale since most descriptions of shopping and services are taken from large national surveys.

Our study attempts to increase the understanding of the relationship of transportations modes to retail goods and services around nutrition and physical activity by using a sample from an African American church located in South Los Angeles. We followed travel patterns, checked health status, and examined food resources to triangulate the possible relationship of these factors. By getting individual data at a neighborhood scale about travel, shopping and health status, tying that to previous work done on the location and quality of food markets, and analyzing both in comparison to the existing literature, we attempted to better describe the role transportation plays in inhibiting or promoting healthy lifestyles.

Our results found that a large number of respondents had no car, yet most were able to travel to work and to the store by car. A significant percentage of respondents did use transit, but in much smaller numbers those using their own or shared cars.

Our major finding are that these, largely low-income minority households view supermarkets as the key to their grocery shopping, and that they are willing to travel relatively long distances (averaging roughly 30 minutes) to get to those stores. They are able, even when the household only has one car, to travel to the store mainly by car, suggesting a strong motivation, again, to use the supermarket as their primary shopping destination for food.

As policymakers and planners consider the different strategies of either improving local small markets or attracting supermarkets to underserved communities, our findings suggest the importance of the supermarket to residents. Moreover, for low-income residents that report chronic diseases and limited access to health care resources, having more access to supermarkets may be even more critical as they attempt the nutritional changes necessary to better manage their health.

Introduction

At the first NIH summit on the science of eliminating health disparities (2008), Robert Valdez, Executive Director of the RWJF Center for Health Policy, asserted, "Housing policy is health policy; transportation policy is health policy; and yes, agricultural policy is health policy." This proposed project responds to that sentiment by examining the relationship between nutritional resources, individual mobility and health status. We argue that resource location, which is tied to neighborhood characteristics, affects the availability of health food resources, placing a greater importance on the role of mobility in the ability of individuals to eat nutritiously.

At the time of our proposal, scholars had already demonstrated that minorities, especially African Americans, "are significantly less likely than whites to have access to cars, and these differences are greater for the less educated" (Stoll, 2004; Holzer, et al, 1994). They had also shown that while public transit is an important source of transportation for millions of Americans, it remains inefficient and inflexible. Giuliano (2001) had argued, along with other scholars, that the answer is either to promote private car ownership or to encourage "economic development policies to increase the supply of jobs, goods and services in low income neighborhoods." However, as Handy and Clifton had written (2001), researchers have relatively little information on individual activities at a neighborhood scale. Most descriptions of shopping and services are taken from large national surveys that offer limited information on the complicated ways that individuals use their neighborhood resources or from a few local studies that often count resources as a method of evaluating accessibility.

Scholars also had shown that vulnerable populations, such as African Americans, are at significantly higher risk for cardiovascular disease, diabetes, and other illness conditions that have been shown to be related to neighborhood characteristics and the availability of health, nutritional, and recreational resources. African Americans die at a much higher rate from such conditions and suffer from higher rates of related morbidity conditions. For instance, the Office of Minority Health (2013) reports: "African Americans are twice as likely to be diagnosed with diabetes as non-Hispanic whites. . . . Although African Americans have the same or lower rate of high cholesterol as their non-Hispanic white counterparts, they are more likely to have high blood pressure.

- African American adults are twice as likely than non-Hispanic white adults to have been diagnosed with diabetes by a physician.
- In 2008, African American men were 2.7 times as likely to start treatment for end-stage renal disease related to diabetes, as compared to non-Hispanic white men.
- In 2008, diabetic African Americans were 1.7 times as likely as diabetic Whites to be hospitalized.
- In 2009, African Americans were 2.2 times as likely as non-Hispanic Whites to die from diabetes."

We attempted to increase the understanding of the relationship of transportations modes to retail goods and services around nutrition and physical activity. Using a sample from

an African American church located in South Los Angeles, we followed travel patterns, checked health status, and examined food resources to triangulate the possible relationship of these factors. We asked do individuals with less access to a private automobile have access to the same set of food resources? Do individuals with poorer health status use different travel strategies to procure their food resources? Is there an inter-relationship between health status and the accessibility of food resources in a community? By getting individual data at a neighborhood scale about travel, shopping and health status, tying that to previous work done on the location and quality of food markets, and analyzing both in comparison to the existing literature, we attempted to better describe the role transportation plays in inhibiting or promoting healthy lifestyles.

Methods

At that same NIH summit, Marci Campbell, a researcher from the University of North Carolina, quoted Reverend Tuggle, a minister involved in her research, as stating, "You must work with the center of the community, and the church is the center of the African American community" (Author's notes). We drew our sample from an African American church located on 68th Street in South Los Angeles.

A total of 83 adults completed the Travel and Health Survey. The sample included, although to a lesser degree than we had hoped, the following categories of individuals:

1. Individuals who both drive and have their own car;
2. Individuals drive and who live in households with an automobile, but who may only have limited access to that car as it serves primarily as a means for others' commuting;
3. Those who rely on others for rides
4. Transit users;
5. Walkers and bikers.

Among those who use public transit, walk, and rely on others for rides, there were a significant amount of overlap. People who are not drivers use a variety of modes to get what they need.

The Travel and Health Survey provides detailed information about their travel routines, their shopping routines, and their health status (See Appendix A). The survey provides us with basic information about the individual's health, which we will use to categorize them into groups of healthier, more mobile individuals versus less healthy, less mobile individuals. We use this dichotomy as a way to examine whether health status interacts with mobility and the healthiness of stores.

Results

We were able to collect interviews with 83 adult members of the Southern Baptist Church of South Los Angeles.

Demographics

Two-thirds of the respondents estimated their household incomes as below $30,000, suggesting the survey reached the populations we were most hoping to interview. The age range of the respondents was split largely into two groups: 51% were over the age of 55, while 36% were under the age of 35. Ninety-six percent of the respondents were African American. Roughly one out of five respondents had completed college, while only 13% owned their own home. Essentially, they represent a varied group of South Los Angeles residents, reflective of the economic, educational challenges confronting the communities in that area.

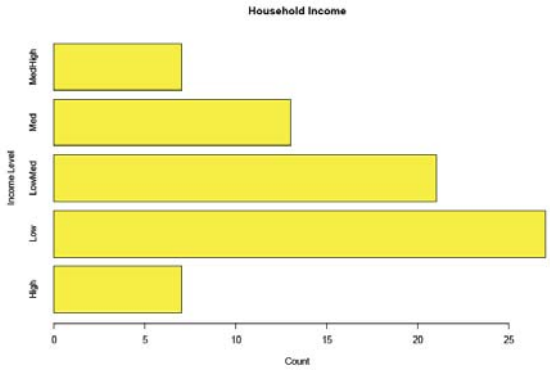


Figure 1: Respondent Household Income

Health Status

Overall, the respondents reported they were in good health (64%), with only 3% stating their health status was poor and 26% very good or excellent health. However, as the next figure attests, lower income respondents were more likely to report poor health than higher income respondents.

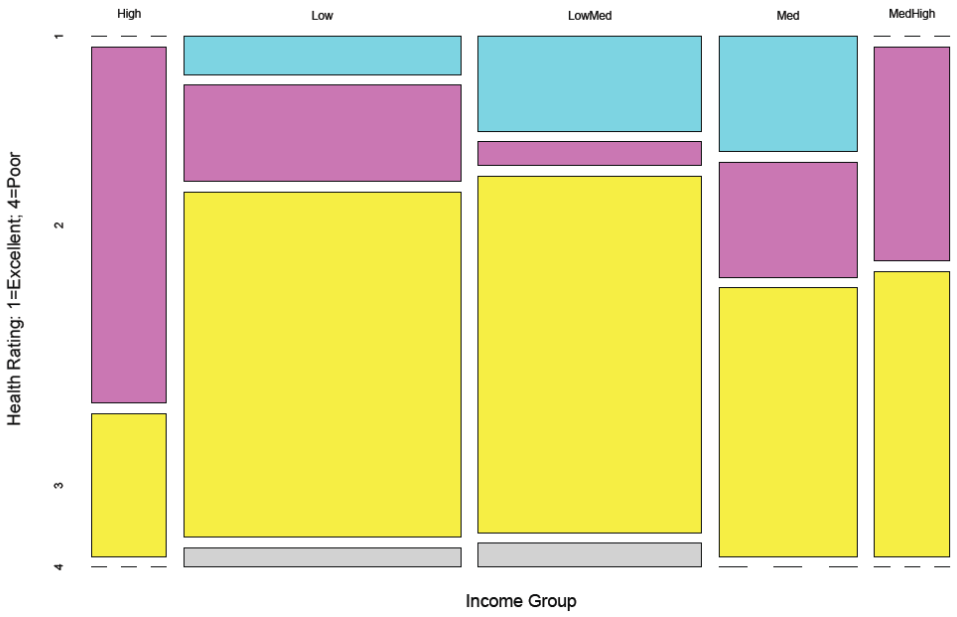


Figure 2: Income Cohort by Health Status

A relatively high percentage (12%) reported feeling poorly 14 or more days in the last month, which suggests the group does have some chronic health issues. As does, the respondents' reporting that 38% of them had been told by a health professional they had high blood pressure, 19% high cholesterol, and 14% depression or some other depressive disorder. However, fewer than one in ten had had a heart attack or had been diagnosed with diabetes. The foundation for increased health risk is present, though, with 79% of the respondents reporting BMIs (Body Mass Index) signifying they are overweight or obese. In addition, access to health care services is problematic, as 34% of all respondents reported not having a routine medical check-up in the last year, and just over a quarter of the respondents (26%) reported they did not get medical care they needed because they could not afford it.

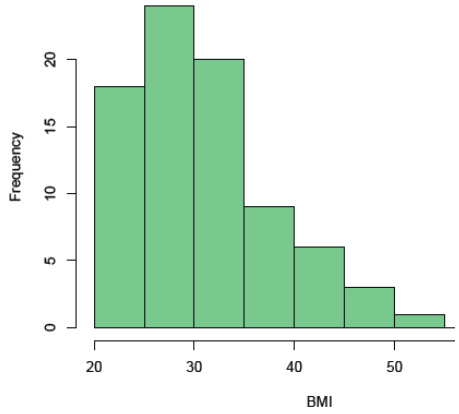


Figure 3: Respondent Body Mass Index

General Transportation

Fifty-eight percent of respondents owned a car. Only 6% of households had no car, but a majority of respondents either had no car or one car, which is not the trend in households with more than one person. 44% of respondents had 2 or more cars. Their commuting trends mirror those of residents of low-income neighborhoods around the nation: roughly half drive alone, 8% carpool, 25% ride transit, and 6% either walk or bike to work.

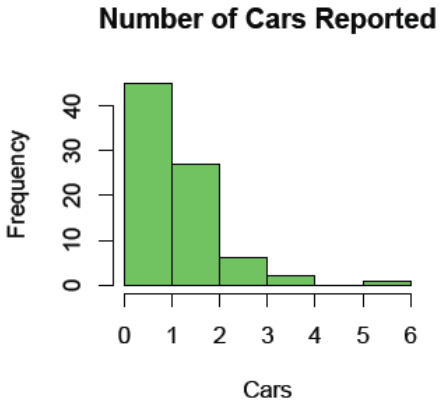


Figure 4: Number of Cars Per Household

Nutrition and Physical Activity

Eighty-eight percent of respondents reported that they had eaten in a fast food restaurant. Of those respondents, 8% ate there more than four times a week, while just over half (55%) ate there 1-3 times a week. As the figure below shows, families with children were more likely to eat in fast food restaurants, but not as heavily as the small number of respondents without children.

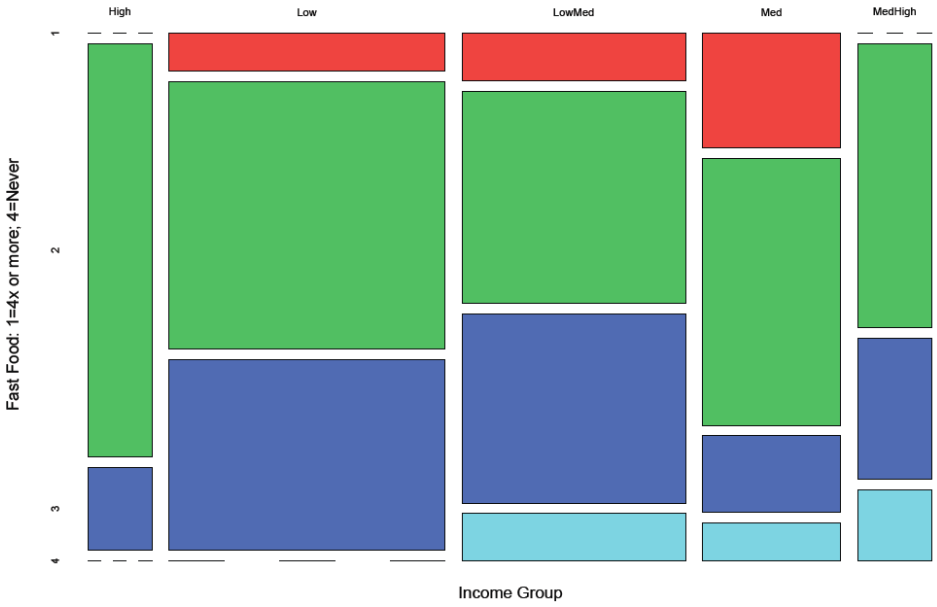


Figure 5: Number of Fast Food Meals by Number of Children in the Family

In contrast to the high number of fast food customers, only 73% of respondents had eaten any fresh vegetables and fruits the day before. Of those respondents, only 11% had eaten 5 or more servings, the recommended daily level (and, only 8.3% of the whole sample ate the recommended level). Sadly, our sample is not that very different from Americans as a whole.

In the area of physical activity, the sample was much better than many national samples. While 65% of respondents thought that the neighborhood they lived in had safe places to be physically active, almost all of them were physically active. However, as the next figure shows, higher income households were much more likely to believe the neighborhood had safe places to be active than lower income households.

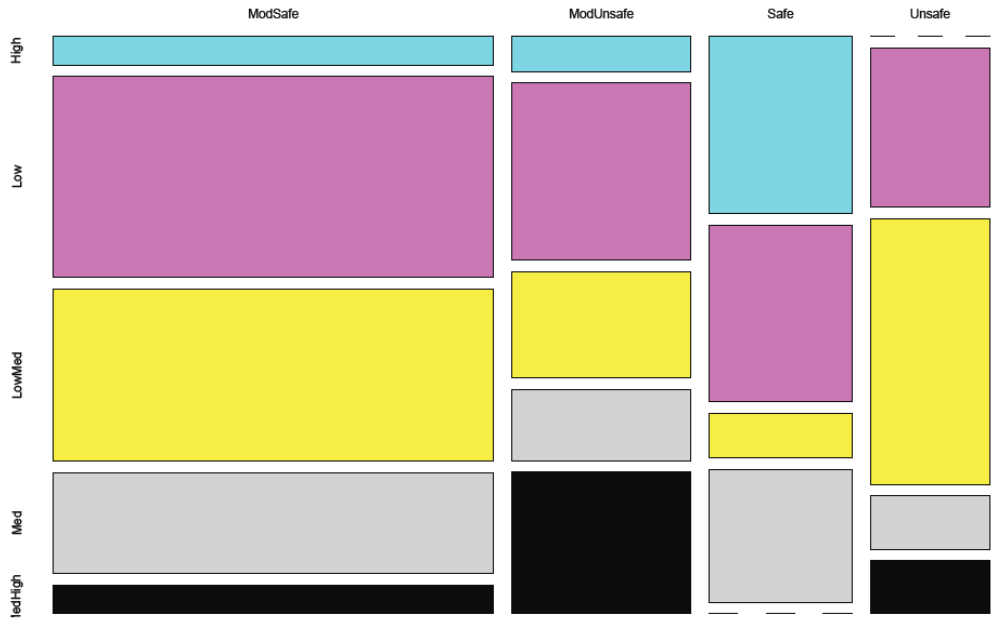


Figure 6: Neighborhood Safe Places to be Active by Household Income

Grocery Shopping

Respondents did not shop as frequently as we predicted, with 60% going to store less than twice a week. We believe that this result may have come from a misunderstanding that we were asking about supermarkets only, but it could also reflect the lack of available transportation (thus, making one large shopping trip a week) and a reliance on a shopping destination that is farther way than a short routine trip would allow. How respondent got to the store may suggest the latter is correct. While 54% rode alone, almost one-quarter rode with a spouse or a child. The very small number that walked to the store (one out of ten) or rode the bus (5%) is suggestive. As is the length of trip time estimated by the respondents.

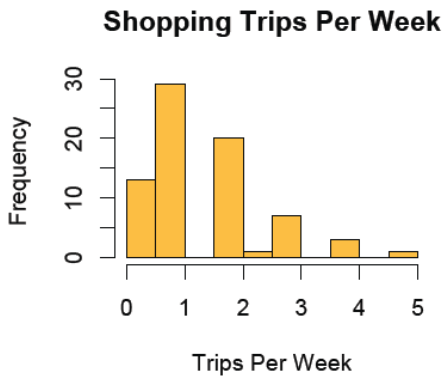


Figure 7: Number of Shopping Trips Per Week

Over half of respondents stated that the stopped on the way home from work at the store. However, the mode of their commute dramatically affected their ability to add a trip to the grocery shopping to their daily commute. As the figure below shows, carpool participants were much less likely to stop, as were the very few bicycle commuters.

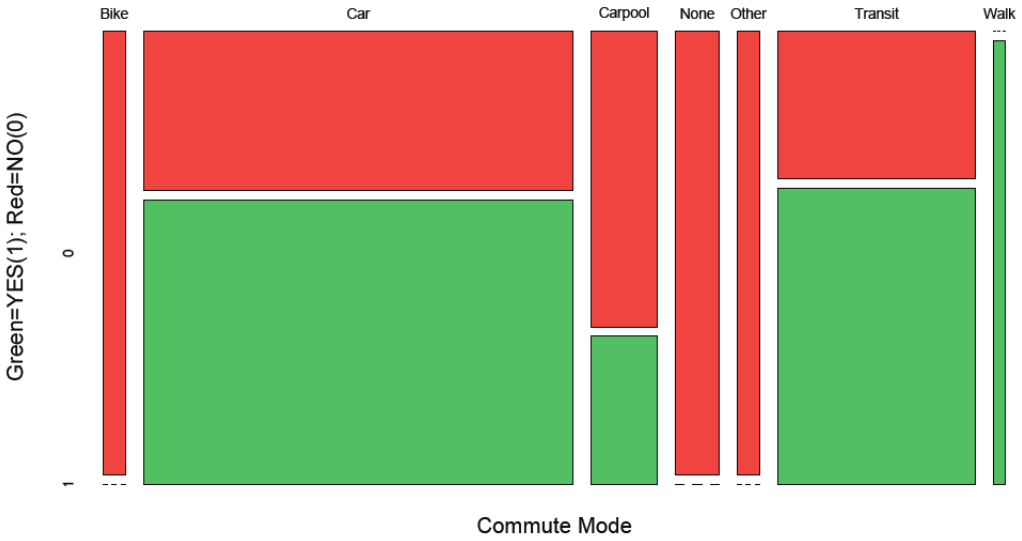


Figure 8: Grocery Trip Chaining by Commute Mode

As the next figure suggests, however, the commute mode did not affect the number of stops per week in any significant pattern. Drive alone commuters, carpool participants, and transit users all had varied patterns.

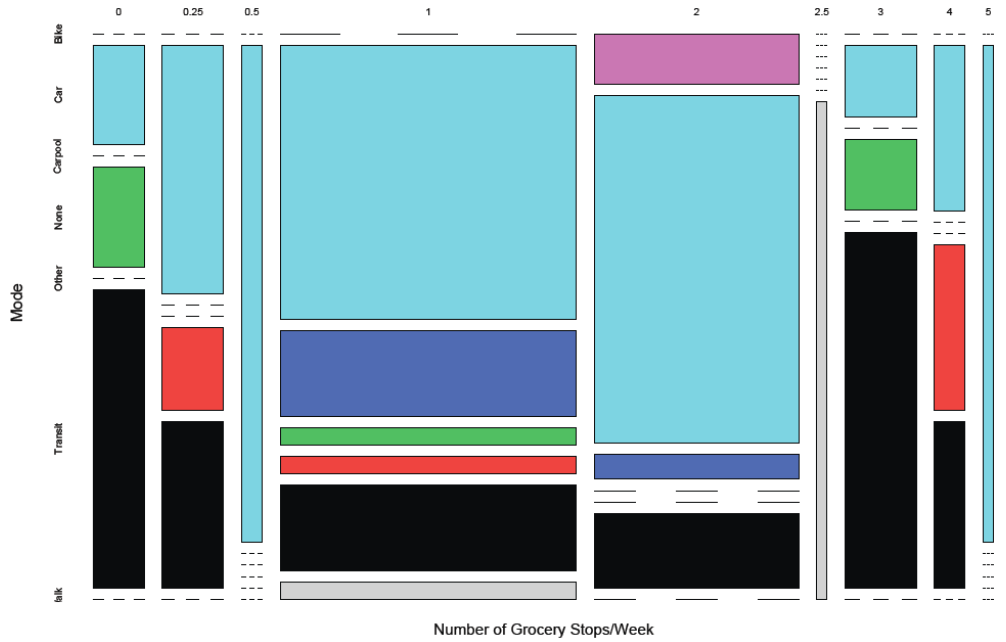


Figure 9: Number of Grocery Stops Per Week by Commute Mode

As the next figure suggests, higher income households were more likely to send their children to the store than lower income households, perhaps out of a fear of the safety of the neighborhood or the availability of a car for them to drive.

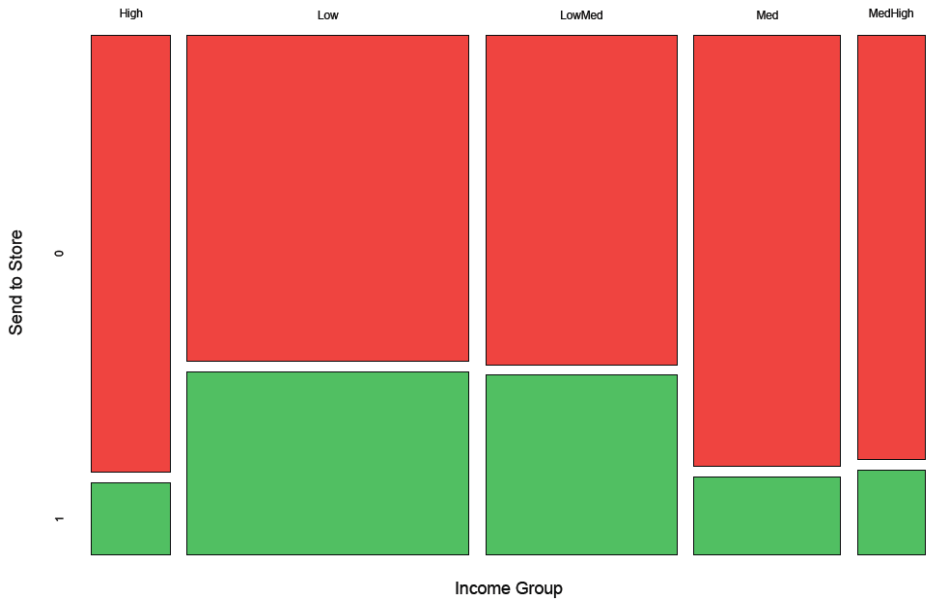
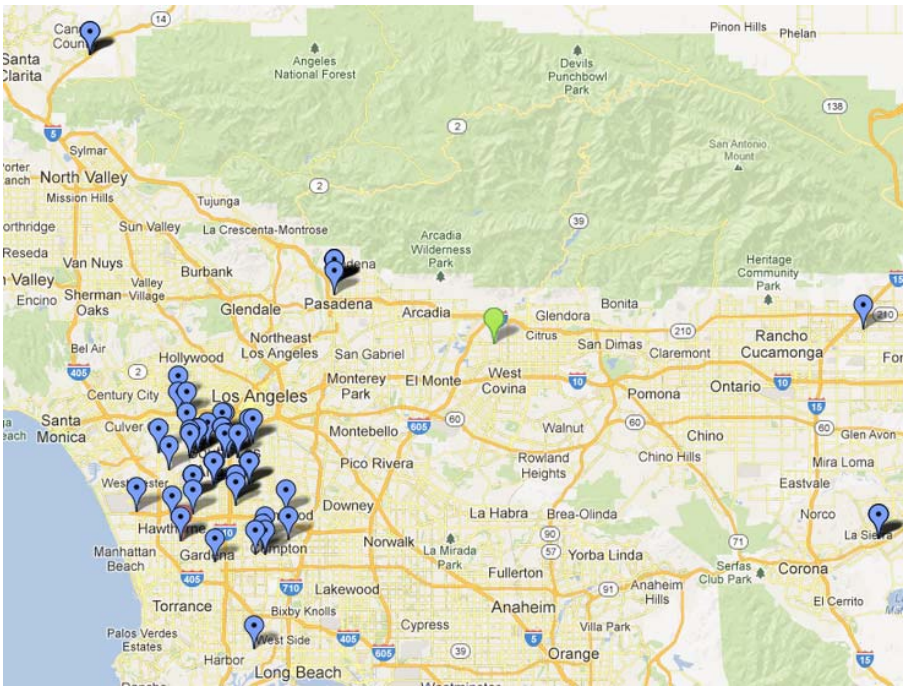


Figure 10: Sending Children Shopping by Household Income

Even though we asked respondents to provide us with multiple places that they shopped, almost all (90%) of the shopping destinations that they provided were supermarkets. The only alternatives that they provided suggest the dearth of other options available to them, save for the Wal-Mart that two respondents mentioned. The other "food stores" mentioned were the 99 Cent Store, RiteAid, Top Valu Market, and McDonald's. While we conducted inventories of the stores, given the lack of variation, we had a harder time instituting our preferred analyses showing the difference in resources offered by the different types of shopping outlets. Instead we focused on the distances that shoppers had to go to find the foods they wished to purchase. The accompanying map shows the stores shoppers frequented with the larger dots signifying locations mentioned multiple times.

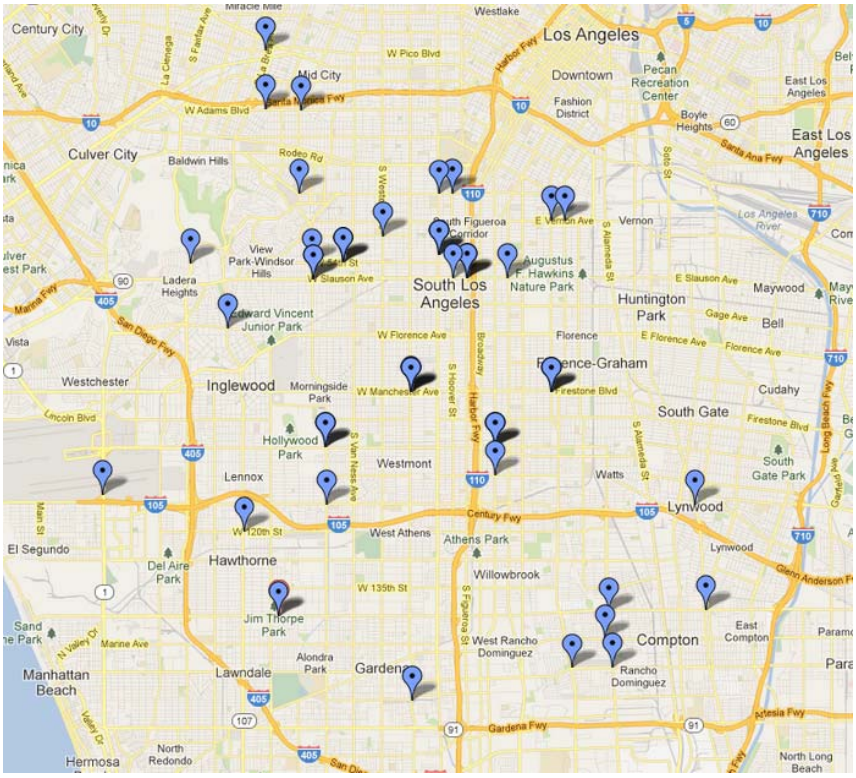
Over half of the respondents said that typical trip took longer than 30 minutes (The range of the times was: 1-15=17; 16-30=19; 31-60=29; 61+6). When we did a shopping preference survey in 2001, contrasting South Los Angeles residents to West Los Angeles residents, the West LA residents reported that they typically could be at a grocery store in 10 minutes.

As the following maps suggest, the majority of our respondents lived in South Los Angeles, with a scattering of respondents around the Southern California region. We could not locate 19 incomplete addresses from our sample. The rest are mapped in Map 1.



Map 1: Respondents Mapped by Nearest Intersection

In Map 2, we show the clustering of the majority of respondents in the South Los Angeles area. The map does not show that several locations to the south of downtown, just west of the 110 Freeway had multiple respondents.



Map 2: Respondents Mapped by Nearest Intersection

In our final map, we then mapped the grocery store locations that respondents named in their surveys. Map 3 shows the majority of locations, omitting only those on the far outskirts of the region.

Map 3: Grocery Stores Frequented by Respondents

As the map suggests, most respondents shop relatively near to home. An inventory of the locations shopped reaffirmed that supermarkets generally have a wide selection of high quality fruits and vegetables located in well-maintained, well-managed stores. We did find minimal indications that some store brands, such as Food 4 Less, a warehouse-styled store with minimal services, had less desirable fruits. But even here, the evidence was sporadic (bruised peaches and pears), and not consistent across the stores. Most stores received high marks from our surveyors.

Conclusions

In our attempt to be better understand the relationship of travel and food access, we were successful in surveying the categories of respondents that we wanted. They varied in their income, access to automobiles, commute mode, and travel to grocery stores. However, our survey instrument proved less sensitive than we had imagined, drawing from the respondents almost entirely supermarkets, and not the variations of local markets and convenience stores that we know are located in large numbers in these neighborhoods. We believe that respondents "read" the survey to mean when they shopped at supermarkets or when they went on a major shopping trip, rather than all food shopping. We confirmed this anecdotally with a few respondents. Given the similarity of the stores, our efforts to analyze the differences between respondents and their shopping proved more limited than we had hoped.

Our major findings are that these, largely low-income minority households view supermarkets as the key to their grocery shopping, and that they are willing to travel relatively long distances (averaging roughly 30 minutes) to get to those stores. They are able, even when the household only has one car, to travel to the store largely by car, suggesting a strong motivation, again, to use the supermarket as the primary shopping destination for food. These findings reflect previous literature on travel times (Clifton, 2004) and on longer times and distances for non-commute travel (Blumenberg et al, 2007).

As policymakers and planners consider the different strategies of either improving local small markets or attracting supermarkets to underserved communities, our findings suggest the importance of the supermarket to residents. Moreover, for low-income residents that report chronic diseases and limited access to health care resources, having more access to supermarkets may be even more critical as they attempt the nutritional changes necessary to better manage their health.

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Appendix A:

Travel and Health Survey Instrument
With Reponses to Selected Questions

USC Travel and Health Survey

Thank you for participating in this project, and for completing this survey. You may skip questions that you do not wish to answer. We will keep the information in this survey confidential.

The first set of questions is intended to tell us about your travel and your activities. We ask you this information to get a sense of your everyday, basic travel patterns and what routes are familiar to you.

1. What is the number of cars available in the household? 0=5; 1=40; 2=27; 3+=9

2. Do any of your children drive? 29 Yes 52 No

3. How do you **usually** use to get to work if you travel to work? (Please circle)
46 Drive alone 6 Carpool with spouse; Carpool with friends/co-workers/others
2 Walk 20 Public Transit 2 Bike 7 Other

4. Do you sometimes take a different way, such as walk or take transit or carpool?
☐ Yes ☐ No

5. If so, about how many times a week do you do so? _____

6. In what general area of the city do you work? For example, “Downtown” or Mild-Wilshire” or “Downtown Inglewood” is fine—no need to be exact. _____

7. Are you responsible for picking up children after school? 23 Yes 57 No
(If no, please go to question 10 – Do you stop for food on the way home from work?

8. How do you normally pick up your children?
☐ Drive alone ☐ Spouse gives rides ☐ Son/Daughter or other relative picks me up
☐ Walk ☐ Public Transit ☐ Bike ☐ Other

9. About where do you pick up these children? Please list the locations as specifically as you can (for instance, near the intersection of Crenshaw and Stocker).

_____ _____

_____ _____

10. Do you stop for groceries or food on your way home from work? ☐ Yes ☐ No
☐ Don’t know

11. Please list the places you shop and give as specific location as you can (for instance, at the corner of Crenshaw and Stocker).

_____ _____

_____ _____

12. How many times do you shop for groceries per week on a typical week? _____

13. How long does it take you to get from work to the store? 1-15=17; 16-30=19; 31-60=29; 61+6

14. How long does it normally take you to do your shopping? _____

15. How does it take you, shopping and all, to get from work to □home?□_____

16. How long does it take you to get from your home to the food store? _____

17. If you are leaving from home and need to get groceries, how do you normally get to the store or farmer's market?

☐ Drive alone ☐ Spouse gives rides ☐ Son/Daughter or other relative picks me up
☐ Walk ☐ Public ☐ Transit Bike ☐ Other

15. Do you go to any other food markets, farmers' markets, or other food purveyors on a regular basis by walking or bike? Please list them and give as specific location as you can (for instance, at the corner of Crenshaw and Stocker).

_____ _____

_____ _____

16. Do you ever send one of your children to the store for you? ☐ Yes ☐ No

17. Please list places they are most likely to shop for food for your family at your request.

_____ _____

_____ _____

18. Do you have any food item delivered to your home? Please specify?

_____ _____

_____ _____

In the second set of questions we will ask you a little about you and your family. These questions help us understand how different people and families have different needs for travel. We realize that some of this information is quite personal. We guarantee your specific personal information will not be shared with anyone.

1. What is the closest intersection to where you live? (An intersection such as Crenshaw and Stocker) _____

2. Number of adults (over 18) in the household 1=13; 2=35; 3=19; 4+=10

3. Number of men (over 18) in the household _____

4. Number of drivers in the household 0=1; 1=19; 2=45; 3=13; 4+=4

5. Number of children under 18 in household 0=30; 1=22; 2=12; 3=6; 4+=4

6. What is your age:
☐ 18 to 35 years ☐ 55 to 75 years
☐ 35 to 55 years ☐ Over 75 years

7. Ages of other adults in the households (check all that apply):
☐ 18 to 35 years ☐ 55 to 75 years
☐ 35 to 55 years ☐ Over 75 years

8. How would you characterize your ethnicity? (i.e., Mexican American, African American, Italian-American?) _____

9. How would you characterize the ethnicity of the other adults in the household?

_____ _____

10. How would you characterize the ethnicity of the children in the household?

_____ _____

11. How would you characterize your English language proficiency?

☐ Native speaker ☐ Good non-native speaker
☐ Learning to speak English ☐ No English

12. Have you completed a college degree?	17 YES	66 NO
13. Has your spouse/partner completed a college degree?	15 YES	57 NO
14. Do you own your residence?	13 YES	71 NO
15. Do you own a car?	55 YES	32 NO
16. Do you have a driver's license?	63 YES	21 NO

17. We don't need to know exactly, but is your annual household income from all sources before taxes is …?

27 Less than $10,000; 21 Between $10,000 and $30,000; 13 Between $30,000 and $50,000; 7 Between $50,000 and $75,000; 7 More than $75,000

The last set of question is about your neighborhood, household and your health status. We realize that some of this information is quite personal. We guarantee your specific personal information will not be shared with anyone.

1. How safe from crime do you consider your neighborhood to be?
15 Very safe 40 Somewhat safe
16 Somewhat unsafe 10 Not safe at all

2. Are there safe places in your neighborhood to be physically active, including sidewalks and streets for walking or jogging? 51 Yes 17 No 14 Don't know

3. In what type of housing do you currently live?
☐ Single-family home ☐ Condominium/Townhouse
☐ Apartment Building ☐ Something Else

4. Do you own or rent your home? ☐ Own ☐ Rent

5. Would you say that your health was …?
12 Excellent 17 Very Good 49 Good 2 Poor

6. How many days in the last 30 days would you say your health was poor? 0=30; 1-3= 18; 4-7=15; 14/15=3; 20+=6

7. How healthy do you think your diet is? Would you say it is …?
6 Very healthy? 51 Somewhat healthy
14 Somewhat unhealthy 6 Very unhealthy

8. We know that your height and weight is a personal matter. Don't worry, we aren't going to share your specific measurements with anyone, but we need them to be as accurate as possible so we can understand your health status.

9. How tall are you? _____ BMI: >25=18; 25-29=23; <29=40
10. How much do you weigh? _____

11. How many servings of fruits and vegetables did you eat yesterday? >5=53; <5=8

12. How many times do you eat in **any** restaurant?
4 4 times a week 50 1-3 times a week 25 Less than once a month 2 Not at all

12. How many times do you eat in a **fast food** restaurant?
6 4 times a week 26 1-3 times a week 42 Less than once a month 7 Not at all

13. Have you ever been told by a doctor or other health professional that you have …?

a.	A heart problem, such as coronary heart disease, angina, or had a hearth attack?	7 Yes	65 No	1 Don't know
b.	Diabetes or sugar diabetes	7 Yes	66 No	0 Don't know
c.	High blood pressure	48 Yes	29 No	0 Don't know
d.	High cholesterol	58 Yes	17 No	1 Don't know
e.	Depression or some other depressive disorder	13 Yes	62 No	1 Don't know

14. In a usual week, do you exercise vigorously or moderately for at least 10 minutes at a time without stopping, including while you are at work. 52 Yes 30 No

15. How days a week? 0-2=19; 3-4=23; 5+=25

16. Are you covered by health insurance or any other kind of health care plan?
67 Yes 14 No 1 Don't know

17. Overall, how easy or difficult is it for you to get medical care when you need it?
5 Very difficult 15 Somewhat difficult 31 Somewhat easy 31 Very easy

18. In the past year, was there ever a time when you needed but didn't get medical care because you could not afford it? 22 Yes 58 No 2 Don't know

19. About how long has it been since you last visited a doctor for a routine check-up? A routine check-up is a general physical exam, not an exam for a specific injury, illness or condition?
50 Less than 12 months; 16 1 year but less than 2 years; 7 2 years but less than 5 years; 6 5 or more years; ☐ Never ☐ Don't know

20. From which of the following sources do you get health-related information? Check as many as apply.
☐ Radio ☐ Television ☐ Internet
☐ Newspapers/Magazines ☐ Doctors/Health Care Provider ☐ Family

Thank you for your participation in this survey!

Appendix B:

Shopping List Instrument
With Selected Results

ID: ___ ___ -- ___ ___ ___

Observer(s) names:

Date: __ __/__ __/__ __

Time: __ __:__ __ to __ __:__ __

1. Store name:

_____

2. Store address:

Zip Code: _____

3. Type of store:
54 Supermarket
1 Local Market
5 Convenience Store

4. What is the overall size of the store?
2 Small
15 Medium
45 Large

5. Is it a chain (More than one of store)?

59 Yes 1 No ___Don't Know

6. Number of ads in display windows:
0=15; 1-3=14; 4-6=18; 7-9=5; 10+=8

7. Number of ads for healthy foods (i.e. fruit, vegetables, etc):
0=52; 1-3=3; 4-6=1; 7-9=2; 10+=1

8. Information promoting dietary guidelines, such as Food Guide Pyramid?

___ Yes ___ No

9.How was the cleanliness of the store (please check one response)?

51 Very Clean 11 Somewhat Clean

0 Somewhat Dirty 0 Very Dirty

10. How was the service at the store? (Were the employees friendly, attentive, clean appearance; please check one response)?

38 Excellent 14 Good 7 Fair 0 Poor

11. Does the store carry… (Check all items the store carries)

54 Whole chicken	54 Skinless
____ Ground turkey	____ Fresh fish
____ Cheese	____ Low/non-fat
____ Yogurt	____ Low/non-fat
____ Tofu	____ Canola or Olive oil
____ Whole milk	____ 1% or 2% milk
57 Soy milk	58 Non-fat milk
____ Salad dressing	____ Lo-fat
____ White rice	____ Brown rice
____ White bread	____ Wheat bread
____ Cookies	____ Low-fat
____ Potato chips	____ Low-fat chips

12. Record the prices of:
(Note least expensive type not on special)

Loaf of bread

$_____White $_____Whole wheat

Quart of milk

$_____Whole $_____ 1% or non-fat

8 oz yogurt

$_____Regular $_____ Low/non-fat

16 oz Oil

$_____Vegetable $_____Olive

16 oz Bag of potato chips

$_____Regular $_____Low/non-fat

1 lb Chicken breast

$_____With skin $_____ Without skin

13. Does the store carry fresh vegetables?
56 Yes 5 No

How Many Types/Varieties? _____
(Include bagged and loose vegetables)

14. What price are the vegetables (least expensive not on special); are they clean?

	Lowest Price	Clean	Dirty
Carrots	$_____	____	____
Lettuce	$_____	____	____
Potatoes	$_____	____	____
Tomatoes	$_____	____	____
Greens	$_____	____	____
Broccoli	$_____	____	____
Green Beans	$_____	____	____
Other_____	$_____	____	____

15. Are the vegetables..

	Firm/crisp	Mushy
Carrots	____	____
Lettuce	____	____
Potatoes	____	____
Tomatoes	____	____
Greens	____	____
Broccoli	____	____
Green Beans	____	____
Other_____	____	____

16. Are the vegetables…….?

	Not Damaged	Damaged
Carrots	55	0
Lettuce	____	____
Potatoes	____	____
Tomatoes	____	____
Greens	____	____
Broccoli	____	____
Green Beans	____	____
Other_____	____	____

17. Does the store carry fresh fruit?
56 Yes 4 No

How Many Types/Varieties? _____
(Include bagged and loose fruit)

18. What price are the fruit (least expensive type not on special); are they clean or dirty?

	Lowest Price	Clean	Dirty
Apples	$_____	____	____
Oranges	$_____	____	____
Bananas	$_____	____	____
Grapes	$_____	____	____
Pears	$_____	____	____
Grapefruit	$_____	____	____
Other_____	$_____	____	____

19. Are the fruit…

	Firm/crisp	Mushy
Apples	____	____
Oranges	____	____
Bananas	____	____
Grapes	____	____
Pears	____	____
Grapefruit	____	____
Other_____	____	____

20. Are the fruit…….....?

	Not Damage	Damaged
Apples	45	11
Oranges	____	____
Bananas	____	____
Grapes	____	____
Pears	____	____
Grapefruit	____	____
Other_____	____	____

21. Where is the fruit/vegetable section?
___Near Entrance ___Back

22. Any other comments?
_____
_____

_____