
Access to grocery stores in Dallas

Nathan Berg* and James Murdoch

School of Economic, Political and Policy Sciences
University of Texas-Dallas
800 W Campbell Road
Richardson, TX 75080-3021, USA
E-mail: prof.berg@gmail.com
E-mail: murdoch@utdallas.edu
*Corresponding author

Abstract: This paper presents geo-spatial information concerning access to grocery stores in Dallas County, Texas. A map shows the spatial distribution of neighbourhoods classified according to the number of grocery stores within a one-mile radius. Neighbourhood-level data from the Texas Health and Human Services Commission and US Census reveal distinct demographic characteristics in areas with many versus few grocery stores. No-grocery-store neighbourhoods are predominantly low-income and concentrated in southern Dallas, and African-American neighbourhoods have significantly fewer grocery stores. Disparities in access to nutritious food suggest the possibility of a breakdown in food security, afflicting as many as 400 000 low-income residents. The demographic correlates of grocery store access are analysed in light of economic and behavioural theories of consumer decisions about what to eat and firms' choices of where to locate stores.

Keywords: food security; grocery stores; neighbourhoods; imitation.

Reference to this paper should be made as follows: Berg, N. and Murdoch, J. (2008) 'Access to grocery stores in Dallas', *Int. J. Behavioural and Healthcare Research*, Vol. 1, No. 1, pp.22-37.

Biographical notes: Nathan Berg is Associate Professor of economics at University of Texas-Dallas and Director of Science at the Williams Institute's Center for Urban Economics. He has published numerous articles on behavioural economics in outlets such as *Journal of Economic Behavior and Organization*, *Social Choice and Welfare* and *Contemporary Economic Policy*. Berg was a Fulbright Scholar in 2003 and his research has been cited in *Business Week*, *Canada's National Post*, *The Village Voice*, *The Advocate* and *Atlantic Monthly*. Berg spent 2005 at the Max Planck Institute-Berlin as Senior Researcher for the Center for Adaptive Behavior and Cognition. His recent work applies behavioural economic theory to the analysis of neighbourhood dynamics in urban environments.

James Murdoch is Professor of Economics and Public Policy at the University of Texas-Dallas. He is a Senior Fellow at the J. McDonald Williams Institute and Director of the Center for Urban Economics. Murdoch has authored numerous articles in environmental economics, public economics and defense economics in such journals as *Quarterly Journal of Economics*, *Review of Economics and Statistics* and *Journal of Public Economics*. His current research is focused on identifying drivers of neighbourhood change and the application of spatial analysis, spatial econometrics and public economic theory to local economic growth and development.

1 Access to stores and food security

Many of us take for granted that there are grocery stores in our neighbourhoods selling a wide variety of nutritious food at relatively low cost. This paper reports new evidence suggesting that access to reasonably priced, nutritious food is a much more difficult problem than is commonly recognised, affecting 400 000 or more residents in Dallas County, Texas.

The issue of lack of access to reasonably priced and nutritious food in low-income neighbourhoods has been documented in a number of US cities by social scientists and medical researchers (Anderson *et al.*, 2003; Haas *et al.*, 2003; Block *et al.*, 2004; Gary *et al.*, 2004; Ball and Crawford, 2005). One important finding is that healthy foods necessary for following dietary guidelines issued by mainstream medical and government health organisations are mostly unavailable in low-income neighbourhoods (Jetter and Cassady, 2005). Compounding the issue of access is the issue of cost. Drewnowski *et al.* (2004) report that healthy food costs considerably more in low-income neighbourhoods, with calculations of the additional cost per calorie in the USA and abroad for diets rich in healthy food. A related finding is that food sold in low-income neighbourhoods typically contains high concentrations of unhealthy fats, carbohydrates, and additives, which contribute to health problems such as obesity, diabetes and heart disease (Gordon-Larsen *et al.*, 2003; Bowman *et al.*, 2004).

Another fact relevant for understanding recent trends in obesity and its complications (Zhang and Wang, 2004) concerns the economics of food. While the price of fresh fruit and vegetables increased substantially over the last 100 years, the average price of one calorie remained almost the same, thanks to cheaper foods with high densities of energy – that is, high fat, high sugar, and high concentrations of carbohydrates (Drewnowski, 2003; Drewnowski and Darmon, 2005).

Most policy approaches aimed at improving unhealthy diets in low-income areas focus on education. The behavioural model underlying such interventions is the economic cost-benefit framework, whereby consumers are assumed to weigh a large set of dietary alternatives, using information provided by informational campaigns to recompute the costs and benefits of each element in that set, and ultimately choose the one with highest net benefits. Education interventions depend crucially on the assumption that decisions about what to eat are a function of the information consumers possess rather than less deliberative behavioural patterns, which served humans well in environments with scarce supplies of food but are poorly matched to the contemporary food environment.

Unfortunately, information and education-based policy interventions have achieved little in terms of modifying behaviour (Horgen and Brownell, 2002; Brownell, 2005). In assessing such failures, critics point to neglect of the role of the food environment, defined by the availability or lack of healthy food. In contrast to information and education-based interventions, initiatives with the identical aim of modifying dietary decisions – but using tools based on the theory that the structure of the food environment is the most important determinant of what people eat – have achieved impressive successes in the USA and abroad (Swinburn *et al.*, 1999; Catford, 2003; Borron, 2003; Wansink *et al.*, 2006).

Eating healthy is notoriously difficult when one is surrounded by only unhealthy food alternatives. Lack of access to a grocery store typically means lack of access to fresh vegetables, fruits and meats. For those who buy food primarily from convenience stores

