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Supermarket Shopping and Nutritional Outcomes: A Panel Data Analysis for Urban Kenya

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Abstract

Background and objectives: Overweight and obesity are growing health problems in many developing countries. Rising obesity rates are the result of changes in people’s diets and lifestyles. Income growth and urbanisation are factors that contribute to these changes. Modernizing food retail environments may also play a certain role. For instance, the rapid spread of supermarkets in many developing countries could affect consumer food choices and thus nutritional outcomes. However, concrete evidence about the effects of supermarkets on consumer diets and nutrition is thin. A few existing studies have analysed related linkages with cross-sectional survey data. To our knowledge, we are the first to use panel data in this setting.

Methods: Panel data from households and a total of 1,199 adult individuals was collected in urban Kenya in the years 2012 and 2015. Panel regression models with individual fixed effects plus other controlling factors were employed.

Results: Our results show that shopping in supermarkets significantly increases adults’ body mass index (BMI). Regarding impact pathways we did not find that supermarkets contribute to net increases in total calorie consumption. However, our panel data models revealed significant shifts in dietary composition. Supermarket shopping contributes to a sizeable decrease in energy consumption from unprocessed staples and from fresh fruits and vegetables. We found significant increases of supermarket shopping on energy consumption from dairy, vegetable oil, processed meat products (sausages etc.), and highly processed foods (bread, pasta, snacks, soft drinks etc.). These shifts towards processed and highly processed foods lead to less healthy diets, with higher sugar, fat, and salt contents, and probably lower amounts of micronutrients and dietary fibers.

Conclusion: The observed changes in dietary composition could explain the increasing effect on BMI, even without a rise in total calorie consumption. These results confirm that the retail environment affects people’s food choices and nutrition. However, the effects depend on the types of foods offered. Rather than thwarting modernisation in the retail sector, policies that incentivize the sale of more healthy foods — such as fruits and vegetables — in supermarkets may be more promising to promote desirable nutritional outcomes.

Keywords: Dietary choices, Kenya, obesity, overweight, panel data, supermarkets

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