Characterizing the retail food environment in a Latin American city: Challenges and implications for research in the majority world

ESPACIO INTERDISCIPLINARIO UDELAR

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INTRODUCTION

The food environment has been identified as a key factor influencing eating behavior and health outcomes. Scarce information exists about the characteristics of the retail food environment in cities in the regions where most of the world's population live. In this context, the present study aimed at characterizing the retail food environment of Montevideo, a Latin American capital city.

1. Validation of secondary data sources

At the aggregate level the secondary databases (administrative records and Google maps) showed moderate sensitivity (0.614) and concordance (0.487), and substantial positive predictive value (0.701) in a sample of 106 census tracts. However, their validity was markedly lower in low socio-economic status (SES) census tracts (Figure 1).

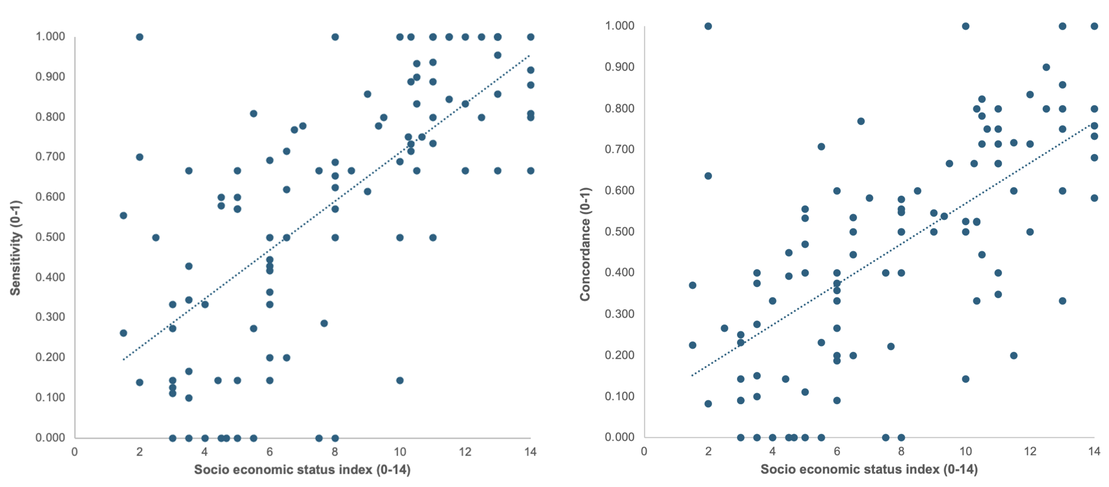

Figure 1. Sensitivity (left) and concordance (right) of the aggregate database as a function of the socio economic status index of the 106 census tracts in Montevideo (Uruguay).

2. Characterization of food outlets

Food outlets were characterized using field observation in 106 census tracts.

The density of most food outlets was larger in low SES tracts (Figure 2).

Small neighborhood stores were identified as a key source of foods, specially in low SES areas.

These outlets showed large heterogeneity in their food supply, highlighting the complexity of categorizing food outlets as proxy of (un)healthy foods.

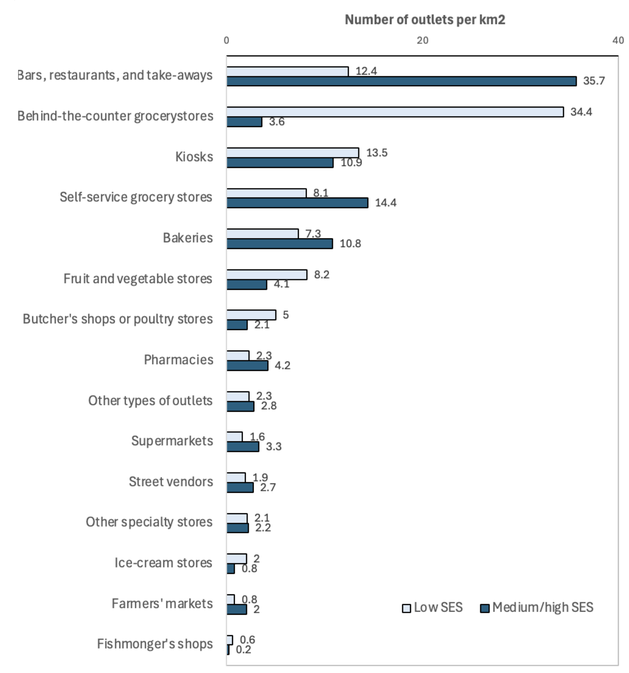

Figure 2. Density of different types of food outlets in census tracts of low and medium/high SES.

3. Development of a local definition of areas with adequate physical access to healthy foods

A definition of areas with lack of adequate physical access to healthy foods was developed following three key steps: i) analysis of observational data on food purchasing behavior, ii) development of an initial definition, iii) validation and refinement with key local stakeholders.

Following this process, areas with adequate physical access to healthy food in Montevideo were defined as: Areas where residents have access within 600 m to outlets selling all the following food groups recommended by the Uruguayan dietary guideline: fruits and vegetables, meat, eggs, milk, and culinary ingredients.

4. Application of the definition in two low-income neighborhoods

A survey of food retail outlets in two low-income neighborhoods in Montevideo (Bella Italia and Punta Rieles) was conducted.

All the outlets were geocoded, and service areas were created considering a 600 m threshold.

A total of 415 outlets selling a variety of foods were identified.

Using the developed definition, adequate physical access to healthy foods was found in most of the residential areas (Figure 3).

The density of food outlets was higher in informal settlements (data not shown). This trend was observed for food outlets selling all food groups except for fish.

Figure 3. Identification of areas with adequate (highlighted in green) and without adequate (highlighted in red) physical access to healthy foods.

5. Semi-structured interviews with residents of the two neighborhoods

Eight semi-structured interviews were conducted with residents of the two neighborhoods. Interviewees regarded food availability in the area as high and did not perceive a lack of physical access to food. However, they discussed challenges related to the price, variety and quality of the foods offered in the food outlets close to their homes.

> *They sell you fruits and vegetables that are a week old, and you can easily see that the quality isn't the same* (ID R1)
>
> *The neighborhood store generally has much higher prices. It has the convenience of being close, but that's it.*(ID 7)
>
> *There are many* [stores]*, but they sell few products. When you want specific products, you have to go to the supermarket in Punta Rieles or to some other place* (ID2)

Due to these problems, interviewees reported traveling to farther stores to purchase affordable, varied or quality foods.

> *You don't shop in the neighborhood for what I'm saying. Because of the price. It's three times more expensive* (ID 1)

CONCLUSIONS

Results highlight a series of methodological challenges and the importance of capturing the local food sources that shape the availability of healthy and unhealthy foods in the majority world. Secondary data sources must be used with caution, particularly for characterizing areas with low socio-economic status. Adaptations of definitons and methodologies seem necessary to acknowledge the complexity of the retail food environment of Latin American cities.