

The influence of home and away-from-home food environments on diets in urban and peri-urban Kenya

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Introduction

- Food system transformation
 - Changing diets
 - Changing mix of nutritional problems
- **Research questions:**
 - How do consumers in urban and peri-urban Nairobi and Kisumu make their food choices?
 - What is the role of the “food environment”?
 - How does our understanding of the relationship between food environment and diet quality change when we take account of the away-from-home food environment?

What's new here?

- Measured consumption at the **individual level**.
- Interviewed multiple individuals within households, capturing some **intra-household variation** in consumption.
- Systematically captured both **meals and snacks** consumed in the home and outside the home, and mode of procurement for food outside the home.
- We collected information on individual **commuting behaviors** and the precise geography of commuting routes and destinations, such as workplaces and schools.
- In evaluating the drivers of diet quality, we considered the quality of FEs in the vicinity of an individual's home ("**home FE**") as well as in the vicinity of their commuting destination ("**work FE**").
- Rigorous measures of **FE characteristics** were collected (or developed). Information was inclusive of retail shelf space and food service product offers.

Eating behaviors

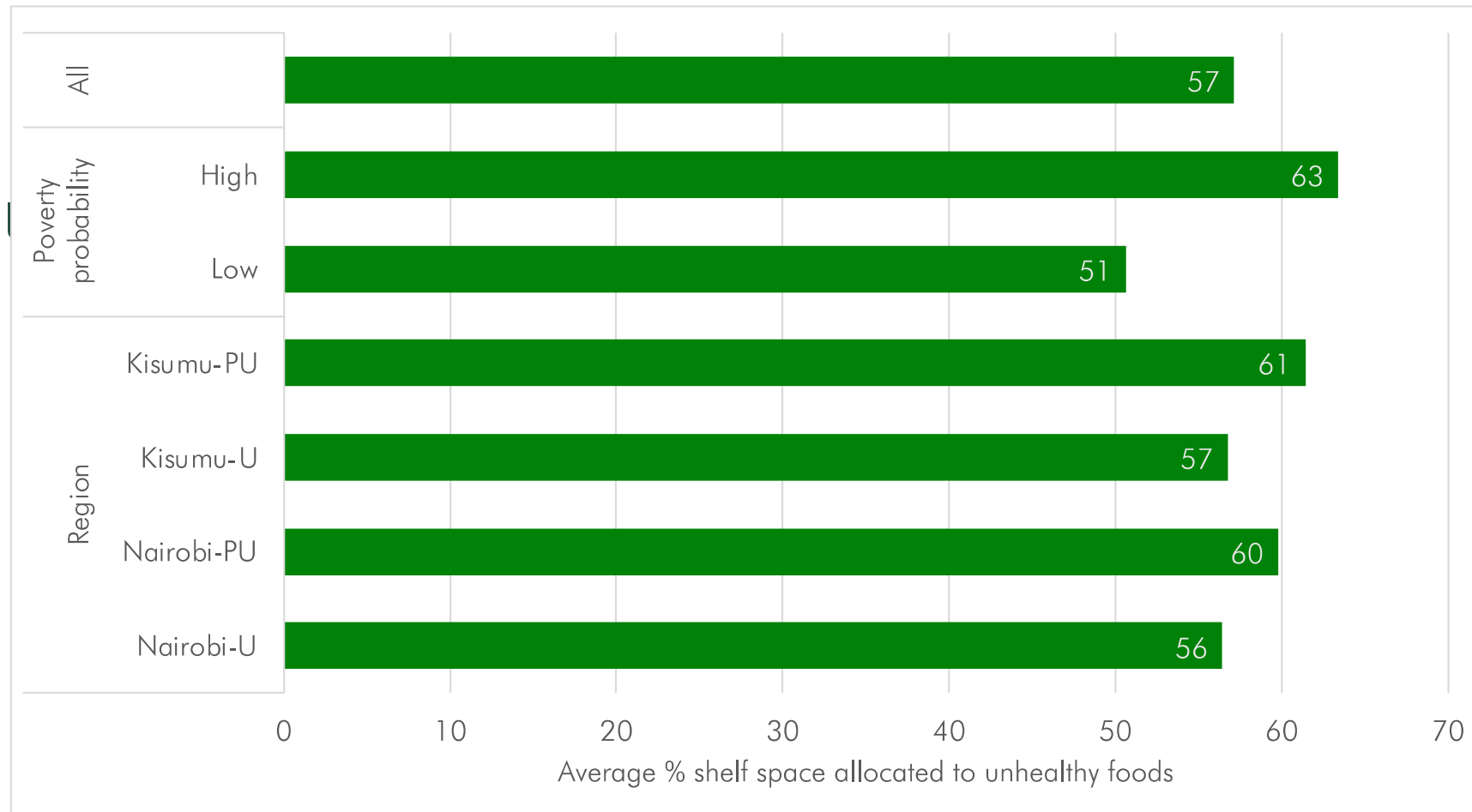
		Average % of days on which...			
		Food is prepared at home and consumed at home	Food is purchased and consumed away from home	Prepared food is purchased as "takeout" and consumed in the home	Snacks are consumed
All	All individuals	97	25	44	36
Gender	Female	98	15	46	38
	Male	95	36	42	33
Poverty class	Low probability of poverty	96	27	48	43
	High probability of poverty	97	22	41	29
Commuter status	Commutes somewhere	96	33	41	37
	Does not commute	98	10	51	34
Region	Nairobi urban	95	25	45	33
	Nairobi peri-urban	98	24	45	42
	Kisumu urban	97	23	42	29
	Kisumu peri-urban	99	18	38	29

Key findings: Diet quality

- On average, 22% of calories come from **out-of-home food economy** (mostly as FAFH or takeout). For some subpopulations (e.g., men, commuters), this is higher.
- **Limited dietary diversity**
 - Heavy emphasis on grains.
 - Many categories of fruits and vegetables see little consumption.
- Considerable consumption of refined grains/baked goods, purchased deep fried foods, and sweets.
 - Much sugar consumed in the form of sugared tea (chai).
- About 11% of adults are at high risk, and **82% are at moderate risk**, of diet-related non-communicable diseases.
- Strong correlation between **age and healthiness of diets**.

Food environments

% shelf space allocated to unhealthy foods



Key findings: Food environments

- There is considerable **variability** over space in terms of:
 - How much food is available in the vicinity of home
 - Share of shelf space taken up by healthy versus unhealthy foods
 - Density of healthy versus unhealthy foods [(outlets x food categories)/km²]
 - Prices of healthy versus unhealthy foods
- There are also **commonalities**. Across all types of food environments (neighborhoods):
 - More shelf space is devoted to unhealthy foods than healthy foods
 - Healthy foods are more expensive on a per-gram basis

Key findings: Influence of food environment on diet quality

- Does the quality of the home FE explain diet quality?
 - Yes, we find a **significant relationship** between home FE quality and diet quality.
 - Greater density of healthy foods → Higher diet quality
 - Greater density of unhealthy foods → Lower diet quality
 - Various **careful measures of home FE quality**—going beyond the more typical count of outlets—do a good job predicting diet quality.
- Do other factors mediate the relationship between home FE and diet quality?
 - Yes, gender (among other factors) mediates this relationship.

Key findings: Influence of food environment on diet quality

- Does the quality of the FE to which a person is exposed each day (depending on where they spend their time) explain the day-to-day variation in their day-level diet quality?
 - Yes, **work FEs are important** in explaining whether someone eats a relatively healthy diet on a given day (relative to other days).

What's next?

- Refine our analysis
 - Work food environments
 - Individual- and household-level mediators of the impact of food environments
 - **Machine learning tools**
- Potential for additional papers using this data resource

Thank you!