



RETAIL DIVERSITY
FOR DIETARY DIVERSITY



Do food safety concerns shape diets?

Insights from the urban poor in Hanoi



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Diet Quality and Nutrition in Vietnam



- Nutrition Transition
- 1 in 4 women anaemic
- 23% of children < 5 stunted
- 6% of children <5 wasted
- Child hood obesity rapidly increasing
 - 42% in urban areas
 - 35% in rural areas
- Adult woman higher rates of obesity than men
- Diets are changing
 - Less rice and fruit
 - More meat, fat, dairy
 - “westernization”



Food safety is of huge concern in Vietnam



<https://bklaw.com.vn/en/2020/05/11/food-safety-license-in-vietnam-2/>



Food safety in Việt Nam From 2011 to 2016

678,755 facilities/eateries
found violating food safety regulations

Food poisoning

167.8 mass incidents per year on average



5,065.8 people affected per year on average



27.3 fatalities per year on average



Source: National Assembly Standing Committee

VNS Photo Minh Tâm/ Infographic Đoàn Tùng

Food environment is changing



- Consumer demand for safe foods driven by fear of food borne illness
- Surge of 'safe food' mechanisms
- Supermarkets and modern convenience stores – marketed as the gold standard for safe food
- Reduction in traditional wet markets and an increase in modern retail outlets (policy driven)



Research



- Hypothesis
 - Do food environment changes that reduce traditional retail outlets affect shopping and diet quality?
 - Women without access to wet markets would be 'funnelled' into supermarkets
 - Supermarket shopping would be associated with worse diet quality
 - Do consumer food safety concerns drive shopping dietary practices?
- Methodology
 - Urban poor Women of Hanoi (n=400)
 - Vulnerable to food and nutrition insecurity
 - shop daily close to home
 - Mixed-method approach
 - Repeat quantitative 24 hour diet recall
 - Nutrition knowledge, attitudes & practices survey
 - Food safety and food acquisition survey
 - In- depth multigenerational household interviews
 - 4 strata based on distance to different retail outlets

Stratum 1



Stratum 2



Stratum 3



Stratum 4



Diet Quality – Diversity & Biodiversity



	Walking Distance to				Over all (n=347)	P value
	Wet market and Supermarket	Supermarket	Wet market	Neither		
Mean Diet Diversity Score	5 (1.2)	5.1 (1.3)	5.4 (1.3)	5.5 (1.2)	5.3 (1.2)	0.06
Percent Reaching Minimum Diet diversity (MDDW)	68	73	78	80	75	0.29
Mean Dietary Species Richness	11.4 (3.8)	12 (3.5)	11.3 (3.7)	12.2 (3.7)	11.8 (3.7)	0.26

- Higher nutrition knowledge was associated with:
 - Higher DDS, DSR, and nutrient adequacy
 - More likely to reach MDDW
 - lower starchy food and sodium consumption
 - higher legume, dairy and vit A rich fruit and veg consumption,

Diet Quality – Micronutrient Intakes



	Mean Usual Intake	Nutrient Adequacy Ratio
Vitamin A (RAE)	1601.3 (1325.3)	0.85 (0.26)
Vit C (mg)	140.9 (55.8)	0.87 (0.24)
Thiamin (mg)	1.2 (0.1)	0.91 (0.17)
Riboflavin (mg)	1.3 (0.3)	0.92 (0.17)
Vit B3 (mg)	19.5 (0.6)	0.95 (0.13)
Vit B6 (mg)	6.2 (0.2)	0.97 (0.11)
Folate (µg)	238.4 (30.2)	0.67 (0.29)
Vit B12 (µg)	15.2 (1.6)	0.98 (0.14)
Calcium (mg)	540.1 (17.5)	0.05 (0.06)
Iron (mg)	14.2 (0.7)	0.31 (0.19)
Magnesium (mg)	308.7 (67.1)	0.90 (0.16)
Sodium (mg)	1054.7 (223.1)	-
Zinc (mg)	9.8 (2.9)	0.51 (0.26)

Diet Quality – Ultra processed foods



Indicators	Walking Distance to				Over all	P value
	Wet and Super Market	Supermarket	Wet market	Neither		
Mean intakes (g) of UPFs	44	49	75	70	60	0.19
Mean proportion of daily energy intakes from UPFs	5	5	6	7	6	0.21
Mean proportion of fat intakes from UPFs	5	4	5	7	5	0.32

- No significant difference in ultra-processed food consumption across strata
- More supermarket foods in diet = more ultra-processed foods (coefficient 0.92)
- More own production or farm-direct foods in diets = less ultra-processed foods (coefficient -0.062)



Where did women shop?



% of foods consumed sourced from	Walking Distance to				Over all	P value
	Wet and Super Market	Supermarket	Wet market	Neither		
Formal wet market	27	29	33	30	30	0.46
Traditional Convenience Store	22	22	22	22	22	1.00
Meals consumed outside of home	21	22	19	17	19	0.23
Informal street market (street stall / vendor)	25	17	15	17	18	0.04
Specialty store	14	15	18	14	15	0.60
Supermarket	7	9	8	7	8	0.92
Home town/ rural area	3	5	3	5	4	0.03
Own production	1	2	2	3	2	0.01
Modern Convenience store	1	1	0	1	1	0.20

Where did women shop?



Where do you buy most of your household food	Walking distance to retail outlet			
	Wet and Super Market	Supermarket	Wet market	Neither
Supermarket	0	0	0	1
Formal wet market	57	22	63	15
Informal street market	39	77	36	83
Convenience store	2	1	0	2
Speciality store	1	0	1	0

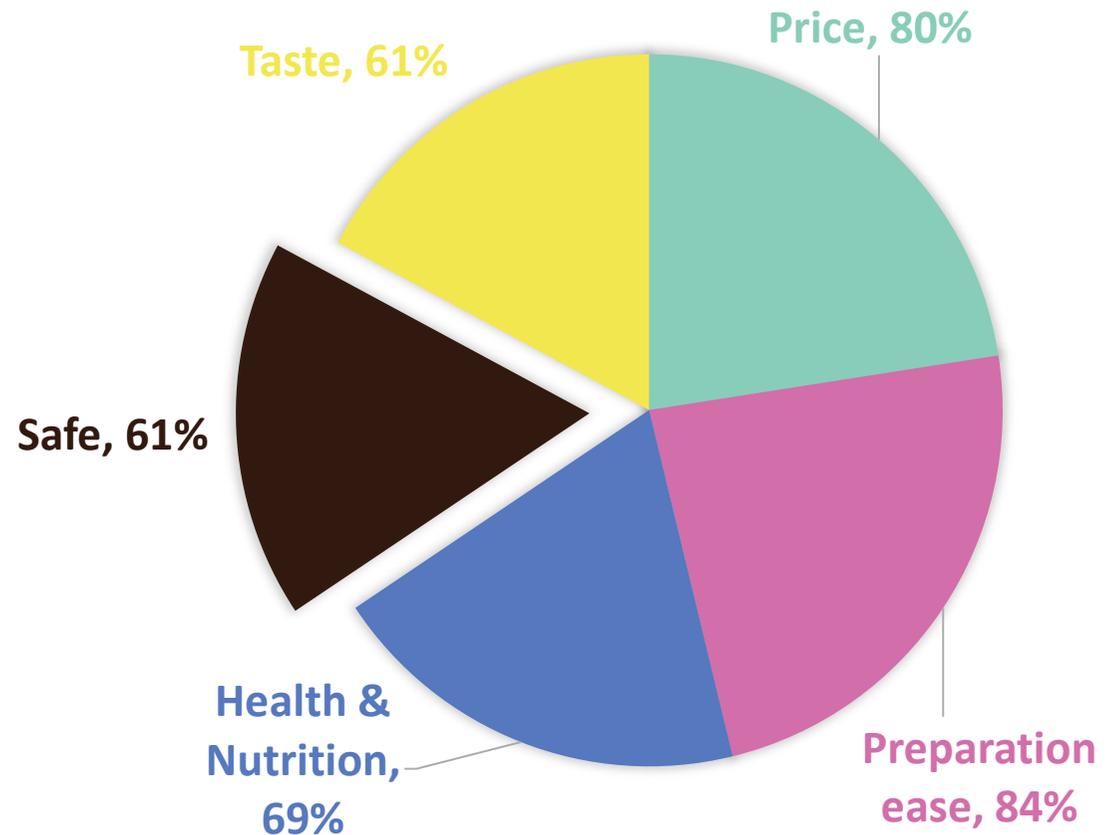


How did women perceive food safety?



- 73% always concerned about food safety
- 77% severely concerned about food safety
- 97% agree wet markets offer safe food
- 68% agree supermarkets offer safe food
- 85% reported price of formal food-safety-regulated food items was too high

HOUSEHOLD VALUE PLACED ON FOOD PROPERTIES



Coping Strategies to mitigate food safety



Coping Strategies to mitigate food safety	% Women
	99%
The way I clean vegetables make them safe for consumption	
I only buy vegetables when I know where they are produced	85%
I buy what my vendor advises me to buy	77%
I only select vegetables that are in season	70%
I only select vegetables which are a bit eaten by worms (i.e. impression of no agrochemicals)	60%
I only select vegetables which look fresh/green	59%
I only select vegetables that carry food safety certification	55%
I only select vegetables that have a peel	42%

- **83% are confident in protecting themselves**
- **44% Relied on their own judgement based on external appearance of veg**

Do food safety concerns shape diets?



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 - Women without access to wet markets would be ‘funnelled’ into supermarkets
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The policy for the urban poor over all...



1. Hasn't significantly changed the diet quality
2. Has shifted consumers into more 'unsafe' shopping practices (i.e. street markets)
3. Even though nearly all consumers are worried about Food safety, food safety was not highest on the list of concerns when making decision about which foods to purchase,
4. Their higher priorities were:
 1. Ease of preparation,
 2. Price and
 3. Nutrition and health.
5. Those that did shop at modern retail outlets consumed higher amounts of ultra-processed foods
6. Those with better nutrition KAP had some better diet outcomes



Recommendations



- Improve consumer nutrition knowledge, attitudes and awareness
- Educate consumers about effectiveness of 'at-home' food safety practices
- Encourage innovative supermarket design
- Incentives for supermarkets to promote healthier food options
- Improve food safety mechanisms within supermarkets to build consumer trust
- Inclusive policy design and consultation





Thank You

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