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**Understanding the determinants of diet diversity and healthy eating among urban households in the Pacific**

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# Understanding the determinants of diet diversity and healthy eating among urban households in the Pacific

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## 1 Introduction & Background

- We explore how food market environments and socio-economic factors influence the diet quality of urban Fijians.
- Pacific Island Countries (PICs), including Fiji, are experiencing obesity epidemics resulting in high rates of diet-related non-communicable diseases (NCDs).
- Little research has focused on understanding drivers of diet-related health issues in PICs.
- Fiji provides a unique context for several reasons:
  1. It is one of the most developed economies of PICs.
  2. Between 2002 and 2012, the share of the Fijian population overweight or obese rose from 59% to 67% (Ministry of Health Fiji 2015).
  3. It has undergone a significant nutrition transition, the relatively healthy traditional diet has been replaced by processed foods, meat, sugar and refined staples (Thow and Snowdon, 2010).

## 2 Data & Case Study

- 1,000 households from Suva (n=759) and Nadi (n=241) were interviewed in 2014 via face-to-face interviews by trained enumerators from the Fiji Ministry of Agriculture.
- The instrument, based on Umberger et al. (2015), elicited socio-demographics and health status of individuals, food expenditures for 79 different food categories, and food shopping behavior across a mix of 10 modern and traditional retail formats.
- Households (n=20) were selected randomly from 50 enumeration areas (EAs).
- The respondent was the head of household responsible for food purchase decisions.



Fig.1 Map of Fiji



Fig.2 Fruits and vegetables at the municipal market, Suva

## 3 Methods

- We use United States Department of Agriculture (USDA) Dietary Guidelines (2010), adjusting based on Fiji health guidelines, to aggregate 79 food items into 9 healthy and 3 unhealthy food groups (see Table 1)
- We solve the following equation for the household:

$$y_i = g(x_i, b) \quad (1)$$

$y_i$  = was measured in 3 ways, namely:

- 1) Household Diet Diversity Score ( *HDDS*) for household  $i$ ;
- 2) Total share of expenditures on healthy food ( *Healthy Share*) for household  $i$ ; and
- 3) Expenditure Shares on 12 food groups for household  $i$ .

$x_i$  = Vector of common independent variables representing food market environment and household socio-economic characteristics; and

$b$  = Vector of parameter estimates.

- We estimated an Ordered Probit Model for  *HDDS* (1); an OLS for  *Healthy Share* (2); and simultaneous Multivariate Tobit regressions for  *Expenditure Shares* (3)

$$y_i = f(\text{Total share of food purchased from modern markets, distance to modern market, frequency of eating out, income, hhsz, use of nutritional label, female age, female education, female work, ethnicity, location}) \quad (2)$$

## 4 Results

- Higher  *HDDS* was associated with higher household income and frequency of eating out, as well as use of nutritional information.
- *Healthy Share* had a significant and positive relationship with female head's education and a significant and negative relationship with share of food from modern markets and household income.
- Table 1 provides a summary of the results for expenditure shares on each of the 12 food groups.

## 5 Conclusions

- Changing food markets, increasing disposable incomes and more women in the work-force are influencing the diet quality of urban Fijians.
- In Fiji, food market environment and socio-demographic factors both contribute to diet quality and diet-related health issues.
- This study provides timely insights into the factors influencing diet quality and diet-related health in urban Fiji, with wider implications for other PICs also in the midst of a diet-related health crisis.

Table 1: Regression results of expenditure shares on different food groups

Variables	Healthy Food Groups									Unhealthy Food Groups				
	Cereals	Roots & Tubers	Vegetables	Fruits	Meat, Poultry & Offal	Eggs	Fish & Seafood	Pulses, Legumes & Nuts	Milk & Milk products	Oils & fats	Sugar, salt & honey	Processed foods & beverages		
Share of expenditure in modern markets	-	-	-	-	-	+	**	-	-	+	***	+	*	
Household disposable income	+	*	-	-	-	-	-	-	-	-	-	-	+	**
Distance to supermarket	-	+	-	-	-	-	-	-	-	-	+	***	-	-
Female empowerment proxy variables														
Female education years	-	-	-	+	***	-	-	-	-	-	-	-	-	-
Female working	-	-	-	-	-	-	-	-	-	-	-	-	+	***

Notes: - = not significant ; \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1

## References

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