



A cross-country study of cigarette prices, affordability and smoking outcomes using survey data from sub-Saharan African countries

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Disclaimer:

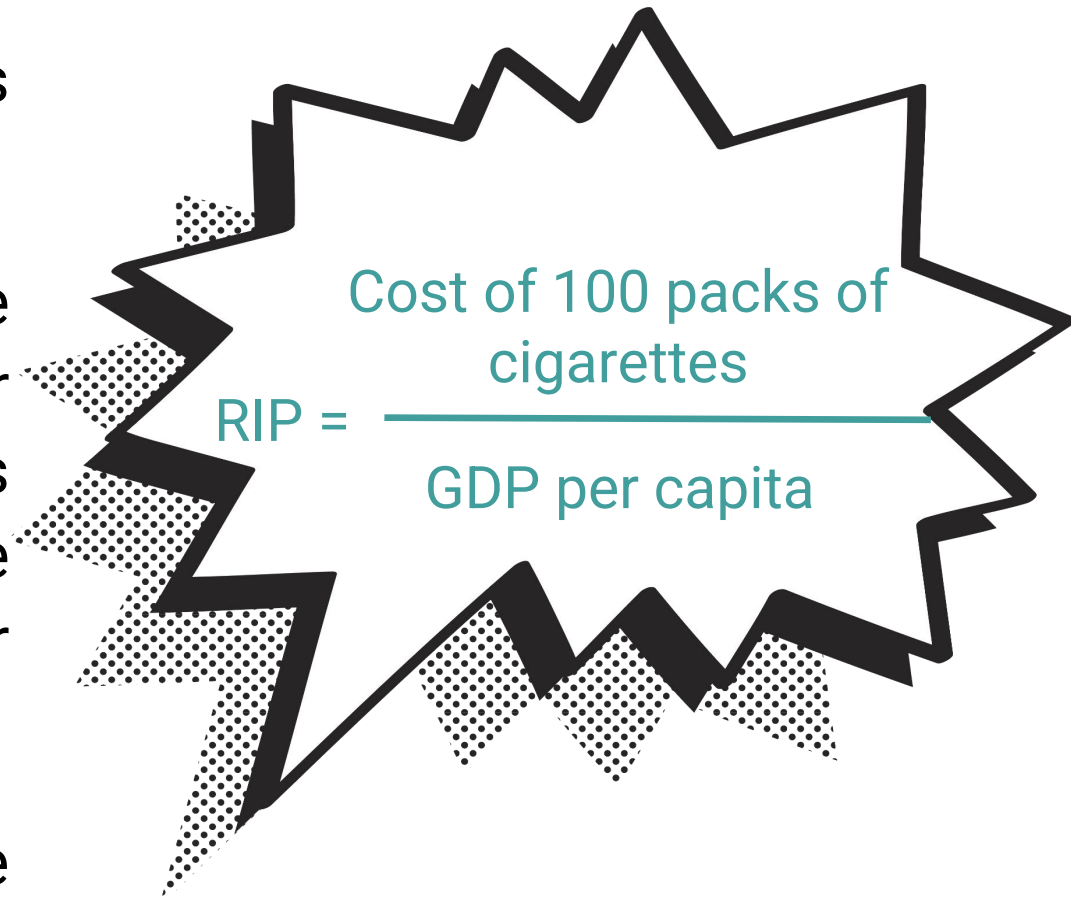
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Background

- Tobacco tax increases that raise prices reduce tobacco consumption. However, economic growth can offset tax and price increases, thereby limiting their impact on tobacco use.
- The affordability of tobacco products, which is determined by the interplay of consumers' income and tobacco prices, has therefore become a key focus of tobacco tax policy.
- The guidelines on implementation of Article 6 of the World Health Organization Framework Convention on Tobacco Control advise countries to increase their tobacco tax rates in a manner that makes tobacco products less affordable over time.

Background

- Estimating tobacco affordability requires a measure of tobacco product prices.
- Given that price data for cigarettes are more readily available than prices for other tobacco products, most analyses have focused on estimating cigarette affordability between countries, and over time.
- This is typically done using the Relative Income Price (RIP) of cigarette affordability.


$$\text{RIP} = \frac{\text{Cost of 100 packs of cigarettes}}{\text{GDP per capita}}$$

RIP tells us the percentage of per capita GDP required to purchase 100 packs of cigarettes (usually the most-sold brand).



Background

- Most cross-country studies of cigarette affordability use the retail price of 20-pack of a specific cigarette brand, such as the most-sold brand.
- A single retail price has shortcomings in terms of reflecting the true average price level in a country:
 1. It cannot detect the variety of brands and prices that are available in each market.
 2. It cannot account for the cigarettes bought in quantities other than packs, yet not all smokers buy cigarettes in packs. Purchases of single-stick cigarettes are very common in African countries in particular.
 3. Single retail prices are often collected from one or two types of outlets and thus do not capture differences in prices paid between the multitude of outlets where individuals can purchase cigarettes.

Background

- The Global Adult Tobacco Survey (GATS) asks respondents to report the amount they spent on their most recent cigarette purchase, and the quantity purchased.
- GATS data can be used to estimate a national average price for the 8 African countries that have conducted a survey, in a manner that accounts for brand variety, the types of packaging in which cigarettes are purchased, and the different venues where cigarettes are purchased.
- These GATS-derived prices can be used to estimate affordability indexes.
- However, this had not been done.
- The current paper sought to address this gap.

Objective

This study aimed to:

- Describe and analyze cigarette prices and cigarette affordability in eight sub-Saharan African countries, and
- Study the association between cigarette affordability and smoking outcomes in the sampled countries.

Method

- Consumption weighted cigarette prices are described by the mean and median prices paid and are further summarized by different demographic strata and by the unit of purchase (e.g., in single sticks, packs, cartons).
- Country-specific Relative Income Prices are estimated and compared.
 - The RIP is calculated as the proportion of per capita GDP required to purchase 2000 cigarettes at the median price smokers pay for cigarettes, expressed as a percentage.
- Correlations between RIP, smoking prevalence, and average daily cigarette consumption amongst smokers, are estimated.

Results

Cross-country comparison cigarette prices and cigarette smoking behaviour

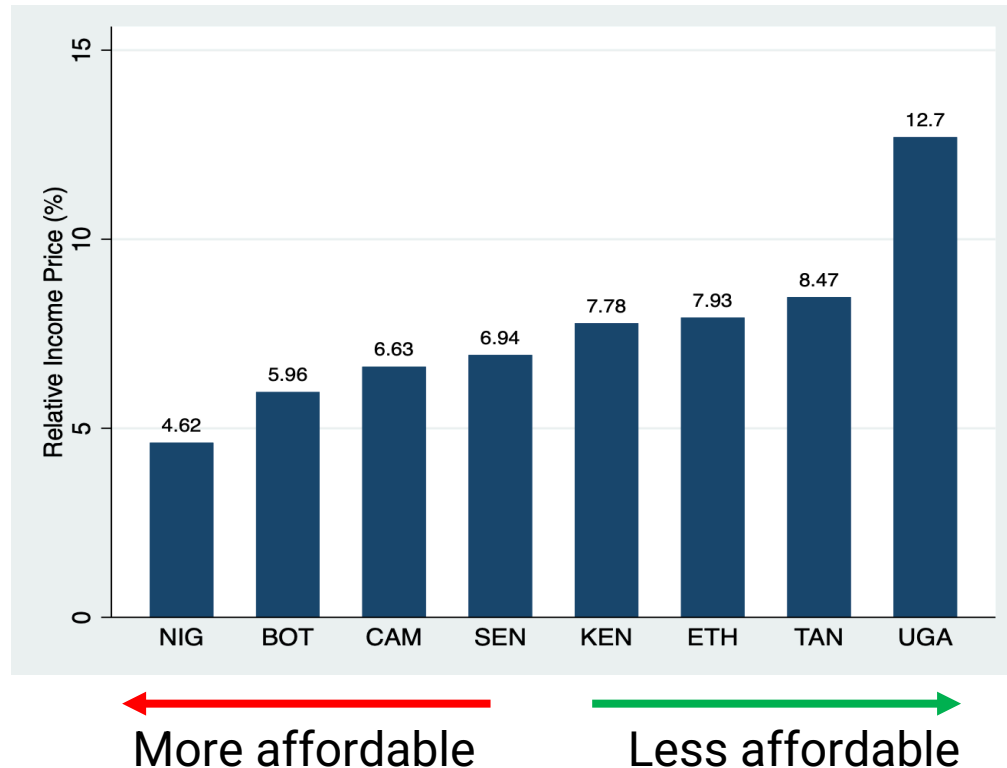
	Botswana	Cameroon	Ethiopia	Kenya	Nigeria	Senegal	Tanzania	Uganda
Mean price (constant 2019 PPP\$)	8.94	2.01	2.33	2.84	2.80	2.93	3.38	2.92
GDP per capita (constant 2019 PPP\$)	15 721	3526	2056	3940	6933	3219	3152	2169
% Current smokers	11.7	5.8	2.8	7.1	3.7	4.2	5.6	4.2
Average daily consumption per capita	6.5	8.4	10.4	8.6	6.9	8.3	7.4	5.8
% Cigarettes purchased by stick	80.4	81.3	60.7	90.9	70.8	84.5	93.2	90.8
% Smokers who are heavy smokers (10+ cigarettes per day)	40.4	63.4	45.5	59.8	33.0	27.9	35.3	25.4

Highlights:

- Mean prices in the sample cluster between 2-3 international dollars. Botswana is an outlier.
- In all the sampled countries, we found that the average price paid is higher in urban areas than in rural areas.
- The proportion of smokers who reported that their most-recent purchase was of a single stick was very high across countries, ranging from 61% of smokers in Ethiopia, to 93% in Tanzania.
- Except in Senegal and Uganda, 20 cigarettes are more expensive when purchased as individual sticks than when purchased in packs. Price differences by unit of purchase are statistically significant ($p=0.0000$) across all countries.

Results

Cross-country comparison of cigarette affordability



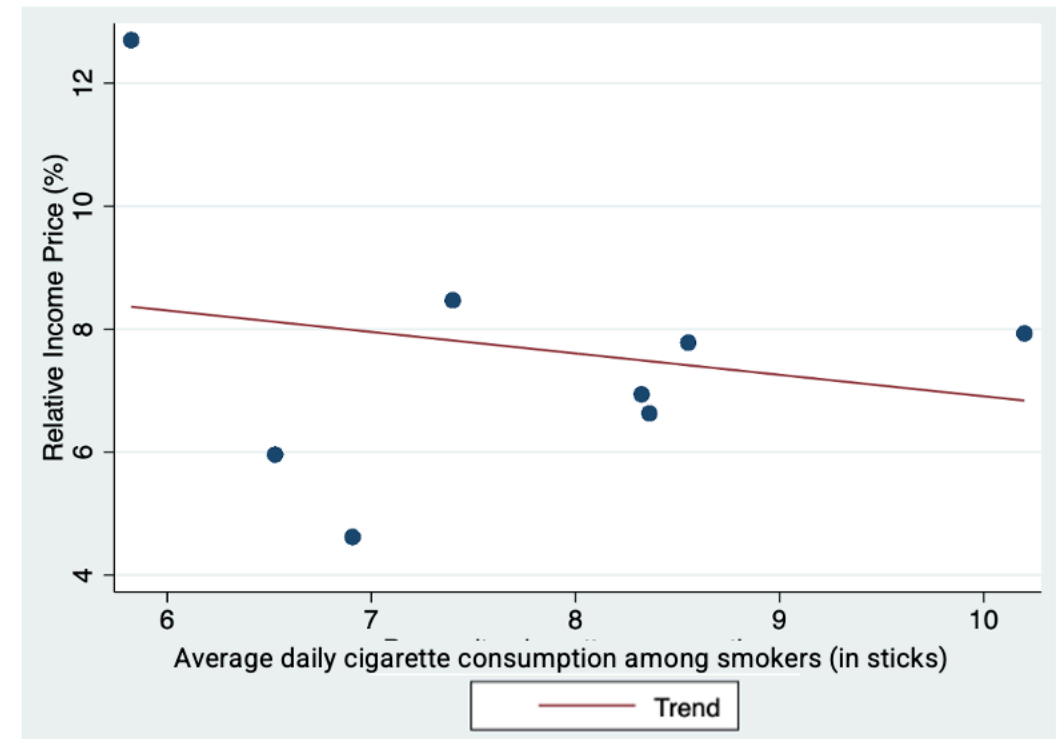
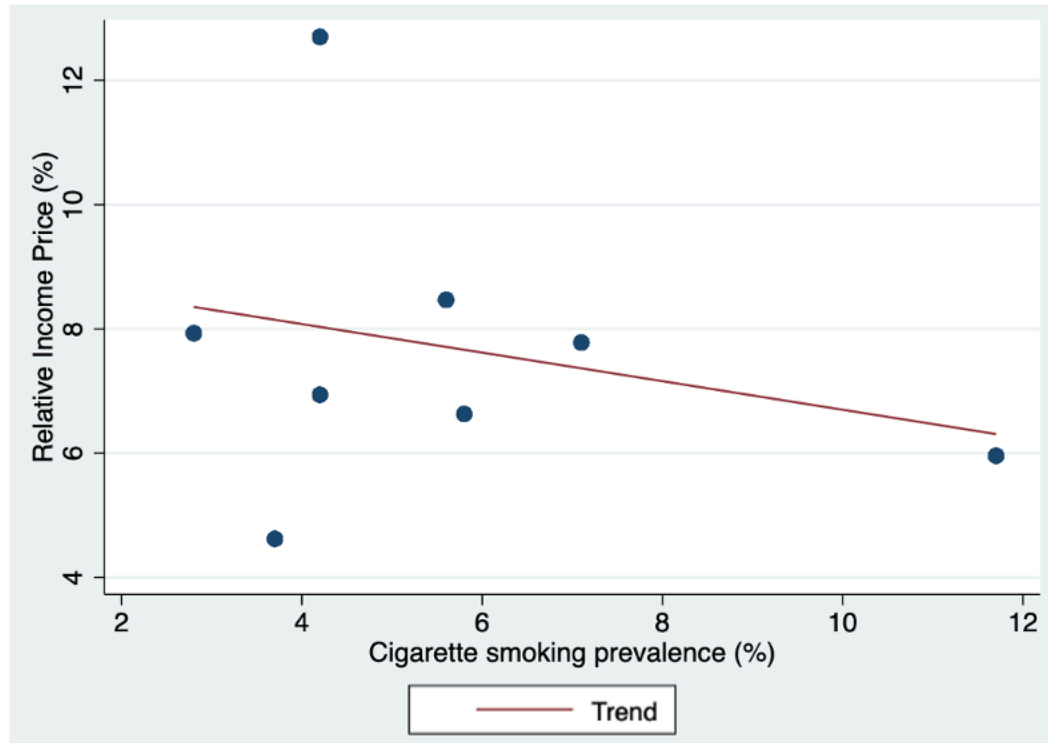
Notes. The RIP is calculated as the proportion of per capita GDP required to purchase 2000 cigarettes at the median price smokers pay for cigarettes, expressed as a percentage.

Highlights:

- Cigarettes are least affordable in Uganda (RIP=12.70%), and most affordable in Nigeria (RIP=4.62%).
- Botswana, which has the highest cigarette prices in the sample, has the second most affordable cigarettes (RIP=5.96%) because it has a relatively high per capita GDP.
- Although cigarette smokers in Ethiopia pay, on average, the second-lowest cigarette prices among all countries in the sample, Ethiopia's relatively low per capita GDP renders even low-priced cigarettes relatively unaffordable.

Results

Relationship between Relative Income Price, smoking prevalence, and average daily cigarette consumption among smokers



There is a negative and statistically significant correlation between RIP and cigarette smoking prevalence, and between RIP and smoking intensity amongst smokers.



Results: summary

- Results show the importance of assessing cigarette prices in relation to incomes to fully understand the ability of consumers to purchase these products.
- Results confirm, for the African context, previous research findings which show a negative association between the affordability of cigarettes and cigarette smoking outcomes.
- The price of a single brand, even if it is the price of the most-sold brand, will not accurately reflect what smokers pay for cigarettes in those countries where a larger proportion of cigarette smokers do not consume the most-sold brand (e.g., Tanzania, only 21% of bought the most-sold brand).

Policy Implications

- Findings provide local evidence on the importance of increasing tobacco excise tax rates in a manner that renders them less affordable over time.
- Findings on the prevalence of single stick cigarette sales point to the need for governments in the sampled countries to enact and effectively enforce legislation that prohibits the sale of single cigarettes, in accordance with Article 16 of the FCTC.
- Taken together, results highlight the reality that it will require a comprehensive tobacco control strategy that includes measures to reduce both the demand and supply of cigarettes to effectively tackle their use in the region.



Thank you!

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Let's
discuss!