



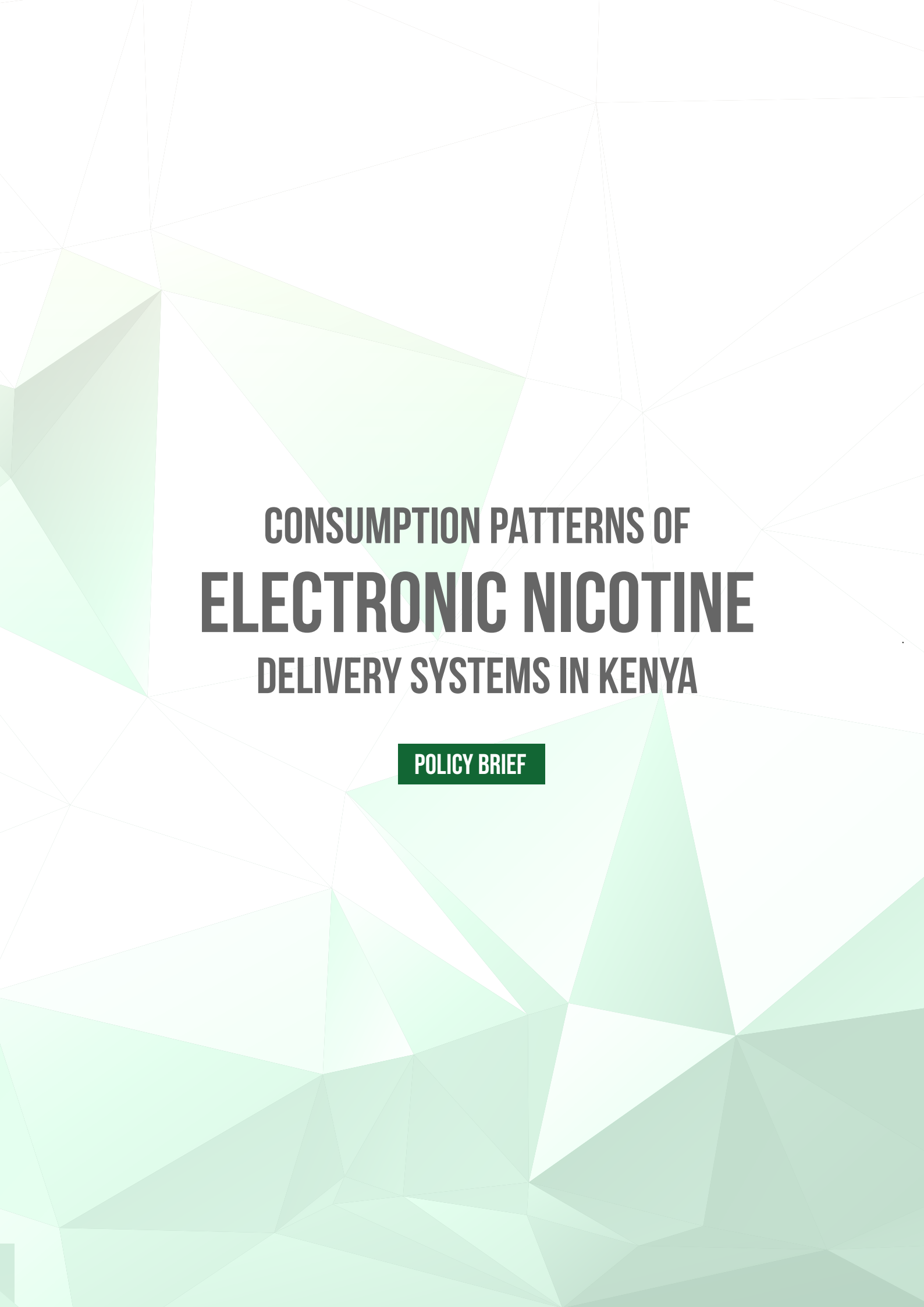
National Taxpayers Association
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CONSUMPTION PATTERNS OF ELECTRONIC NICOTINE DELIVERY SYSTEMS IN KENYA

POLICY BRIEF



JULY - 2024



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BACKGROUND

The new-generation tobacco and nicotine products, also known as Electronic Nicotine Delivery Systems and Electronic Non-Nicotine Delivery Systems (ENDS/ENNDS), are devices that heat and aerosolize nicotine liquids or tobacco products. These products have gained global popularity, with sales reaching US\$ 21.2 billion in 2020 [1]. However, studies on the consumption patterns of ENDS/ENNDS products in Africa are notably scarce, despite the vaping market reporting 4 million users of ENDS/ENNDS in the continent [2]. This is a significant gap, as a recent review article on global consumption of ENDS/ENNDS products only covered two African countries [3]. It's crucial to address this lack of analysis in

various African countries.

This policy brief takes a unique approach to estimate the consumption patterns of ENDS/ENNDS in Kenya. By analyzing the 2022 Statista Consumer Insights Survey, we have not only estimated the overall consumption but also the percentage distribution of users according to the product of choice/brand loyalty. Furthermore, we have captured the behavioral characteristics of the users, providing a comprehensive understanding of the consumption patterns. This data has allowed us to identify the differences in ENDS/ENNDS consumption in both resourced and under-resourced areas and propose policy options to avert consumption.



**\$21.2
BILLION**

the global sales
for ENDS/ENNDS
in 2020



METHODOLOGY

We used the 2022 Statista Consumer Insights Survey for our study. This online survey systematically monitors ENDS/ENNDS consumption in Kenya [4]. The datasets include adults who consume various ENDS/ENNDS products. Sampling can be stratified according to the region's economic status. The survey was designed to generate comparable ENDS/ENNDS consumption levels across Kenyan urban cities and small, under-resourced towns.

A total of 2,837 completed the 2022 Statista Consumer Insight Survey, capturing individual characteristics (age, gender, education level, and self-identified race group). Based on regional GDP per capita higher than 4,500 USD, we categorized those living in Nairobi County, Kiambu County, Nakuru County, and Mombasa County as residents of resourced regions. At the same time, we considered those in Kisumu County, Nyeri County, Kakamega County, Meru County, and other disadvantaged counties as users living in the 'less-resourced' region. This distinction was made because area-level socioeconomic status could encourage ENDS/ENNDS consumption. For example, household inequality has been declining in Kenya since 2015, regardless of the education level of the household head [5]. This factor is likely to influence the consumption patterns of ENDS/ENNDS.

During the 2022 Statista Consumer Insights Survey data collection, information on ENDS/ENNDS consumption was established by asking the participants who had indicated they consume these products --the following question: 'Overall, which ENDS/ENNDS do you consume? The response options were (1) None, (2) ENDS, (3) ENNDS (4) Both ENDS and ENNDS. All respondents who did not indicate consuming any ENDS/ENNDS were coded as 0, and those who consumed ENDS/ ENNDS, irrespective of the proportion or type, were coded as 1. We used this binary variable to estimate the overall prevalence of ENDS/ENNDS consumption in Kenya, focusing on resource- and less-resourced settings.

We also carried out a cross-sectional online survey between Sept 2023 and March 2024 administered by the Brain and Mind Institution. The participants were Kenyans who frequently visited clubs and entertainment areas weekly. The questionnaire included questions on E-cigarette, Shisha, and Nicotine pouches consumption. The survey aimed to estimate the percentage distribution of users according to the product of choice and behavioral characteristics of ENDS/ ENNDS users.



2,837

completed the
survey

RESULTS

The results show that ENDS/ENNDS prevalence (Table 1) is higher in the resourced setting than in the less resourced setting (7.9 % vs 3.4 %). The prevalence of ENDS/ENNDS consumption is high in individuals who self-identified as Asian and other races compared to the users who self-identified as African. The cohorts between 26 and 35 years have the highest prevalence of ENDS/ENNDS consumption (10.5 % in resourced regions and 5.3% in less-resourced regions), and males have a higher prevalence of ENDS/ENNDS consumption than females. Individuals with more than high school qualifications drive the consumption of ENDS/ENNDS products in Kenya in both resourced and less-resourced regions (See Table 1).

Table 2 reports the percentage distribution of ENDS/ENNDS users in Kenya. About 55.1 % of users in the less-resourced regions consume illicit Shisha despite the government's 2017 ban. About 50.5 % of users in the resourced regions consume ENDS/ENNDS products daily. Co-use of illicit cigarettes, Cannabis, and ENDS/ENNDS products is more common in users from less-resourced regions than resourced regions. Most users (70.1 % in resourced regions and 81.1% in less-resourced regions) have not attempted quitting smoking, and addictions are highly reported in both regions (See Table 2).



55.1 %

percentage of users in the less-resourced regions that consume illicit Shisha



70.1 %

in resourced regions

81.1 %

in less-resourced regions



50.5 %

percentage of users in the resourced regions consume ENDS/ENNDS products daily



HAVE NOT ATTEMPTED QUITTING SMOKING

Table 1. 2022 Statista Consumer Insights Survey Estimates of ENDS/ENNDS consumption.

	Prevalence of ENDS/ENNDS Consumption	Prevalence of ENDS/ENNDS Consumption	% difference	***denote Chi-Square Test p-values <0.05
	Resourced regions	Less-resourced regions		
Region	7.9 (7.7 to 8.2)	3.4 (3.5 to 3.9)	-56.9	***
Overall		5.6 (5.4 to 5.9)		
Race				
African	6.1 (5.9 to 6.4)	2.1 (1.8 to 2.2)	-65.6	***
Asians and other races	9.7 (9.5 to 10.2)	5.4 (18.4 to 25.6)	-44.3	***
Age				
18-25	5.9 (5.7 to 6.2)	2.2 (2.0 to 2.3)	-62.7	***
26-35	10.5 (10.3 to 11.1)	5.3 (5.1 to 5.6)	-27.4	***
> 36	7.3 (7.1 to 7.7)	2.8 (3.2 to 2.9)	-73.3	***
Gender				
Male	11.2 (11.0 to 11.8)	4.6 (4.4 to 4.8)	-58.9	***
Female	4.6 (4.4 to 4.8)	2.3 (2.1 to 2.4)	-50.1	***
Education				
<High School	3.9 (3.7 to 4.1)	2.2 (2.0 to 2.3)	-43.5	***
High School	8.3 (8.1 to 8.7)	3.2(3.0 to 3.4)	-61.4	***
>High School	11.5 (11.3 to 12.1)	4.8(4.6 to 5.1)	-58.3	***
Total Sample	1227	870		
Note: Chi-Square p-value compare changes in ENDS/ENNDS consumption. Resourced vs Less- resourced regions.				



Table 2. Survey estimating percentage distribution of ENDS/ENNDS users.

	% Distribution of ENDS/ ENNDS users	%Distribution of ENDS/ ENNDS users	% difference	***denote Chi-Square Test p-values <0.05
	Resourced regions	Less-resourced regions		
Type of ENDS/ENNDS				
E-Cigarettes	38.0	20.0	-47.3	***
Nicotine Pouches	31.1	25.2	-19.3	***
Shisha/Hookah	31.0	55.1	77.4	***
Consumption intensity				
Daily	50.5	45.5	-10.0	***
Weekly	34.5	34.4	-1.1	
Monthly	10.4	15.0	44.2	***
Occasionally	5.1	5.2	2.0	
Co-use				
Illicit tobacco	28.1	35.1	25.0	***
Cannabis	34.4	42.0	22.1	***
Legal cigarettes	38.1	23.2	-39.1	***
Smoking Cessation				
Attempted quitting 3months ago	10.0	11.1	11	
Attempted quitting 6months ago	20.1	8.2	-59.2	***
Not Attempted	70.1	81.1	15.7	***
Side Effects				
Addiction	60.1	51.4	-16.1	***
Hypertension	30.1	39.6	35.0	***
Declining brain function	10.0	9.0	10.0	
Total Sample	123	101		
Note: Chi-Square p-value comparing ENDS/ENNDS percentage distribution. Resourced vs Less- resourced regions.				

CONCLUSION

Our estimations showed a significantly higher prevalence of ENDS/ENNDS consumption in the resourced regions than in the less-resourced regions (Table 1). Male users who self-identified as Asians and other races, between the ages of 26 and 35, with education above high school consume the bulk of ENDS/ENNDS (Table 1). These results are consistent with findings from global studies, which suggested that the young generation of males are the primary consumers of ENDS/ENNDS [6].

We also discovered that the majority of users reported increasing addiction levels and hypertension cases (Table 2) associated with ENDS/ENNDS consumption. In the literature – there is evidence that ENDS/ENNDS consumption causes higher addiction levels and increases blood pressure and heart rate [7] & [8]. JUUL– a trendy brand in Kenya, is known to release more nicotine in the first puffs compared to other products in the markets [9]. These nicotine levels explain the high addiction levels reported in our study (Table 2).

Consequently, the industry view that ENDS/ENNDS are less risky and support smoking cessation needs to be re-examined. Table 2 shows that the majority of users are not attempting to quit smoking. Therefore:

Aggressive taxation is warranted to control consumption levels, considering that most users can afford these products cheaply. International authors have also raised doubts about the industry narrative that these products support cessation and called for more investigation [10].

Confronting the growing illicit ENDS/ENNDS consumption requires a greater political will to increase investment in tax administration, including developing greater capacity for law enforcement and deploying appropriate technology-supported strategy.

Tax measures should be combined with targeting cessation support and awareness campaigns focusing on the vulnerable population groups with high consumption prevalence. The solarium fund collected from the tobacco industry can be utilized for these health promotion activities.

There is also a need to capacitate the local county governments to monitor the consumption levels of these products in their regions. Policy makers from the national government must also bridge the gap between national and county officials in policy formulation to address the growing ENDS/ENNDS consumption.

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