Supplemental material

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Tob Control

SUPPLEMENTARY MATERIALS

1 THE ECONOMIC BURDEN OF TOBACCO USE IN PAKISTAN

Table I: Sampling detail

Base	Sampling Parameters						Sample Size		
	r	Design Effect	RME	pb	Avg. HH Size	Response Rate	HHs	Clusters	Blocks
Urban	0.124	2	0.05	0.6401	6.2	0.95	5996	20	300
Rural	0.124	2	0.05	0.5721	6.6	0.95	6302	20	315
Pakistan							$12298 \approx 13000$		615

Table II. Population and sample distribution across different administrative units

Administrative Unit	Population (Households)		Sample	
	No. (in thousands)	percent	No.	percent
Punjab	17103.84	53.11	6904	53.11
Khyber Pakhtunkhwa (KP)	3845.17	11.94	1552	11.94
Sindh	8585.61	26.66	3466	26.66
Balochistan	1775.94	5.51	717	5.51
FATA	558.38	1.73	225	1.73
Islamabad	336.18	1.04	136	1.04
Pakistan	32205.11	100	13000	100

Table III. Descriptive analysis

Indicator	Overall	15 and above	35 and above
Age	24.54	34.56	49.56
Male (%)	52.72	52.81	51.94
Education (years)	7.01	8.98	8.73
Household size	6.84	4.35	2.13
Employment (%)	31.45	37.01	42.91
Income	18544.81	18611.53	20810.69
Observations	82889	52767	22917
Source: Author's calculation from the study survey			

Table IV. Prevalence of tobacco and smoking

Panel	Tobacco	Smoking	Tobacco	Smoking
A. Region				
Pakistan	19.14	8.82	19.1	10.5
Rural	19.8	8.87	21.1	11.2
Urban	18.44	8.77	15.9	9.3
B. Gender				
Male	31.74	16.13	31.8	19.4
Female	4.98	0.62	5.8	1
C. Province				
Punjab	14.28	8.48	---	---
Sindh	25.59	9.75	---	---
KP	16.98	4.67	---	---
Balochistan	26.02	14.43	---	---
D. Age				
15-34	10.58	3.93	---	---
35-64	29.28	15.07	---	---
65 & above	36.33	15.9	---	---
Source: Author's calculation from the study survey				

Table V. Disease prevalence

Panel	Diseases	Hospitalization (%)	Outpatient visit (%)
A. Region			
Pakistan	Cancer	7.19	5.36
	Cardiovascular diseases	7.34	7.98
	Respiratory diseases	3.75	4.27
Rural	Cancer	7.37	5.62
	Cardiovascular diseases	6.85	7.55
	Respiratory diseases	3.94	4.06
Urban	Cancer	6.97	5.06
	Cardiovascular diseases	7.93	8.46
	Respiratory diseases	3.53	4.51
B. Gender			
Male	Cancer	9.21	5.14
	Cardiovascular diseases	9.21	7.35
	Respiratory diseases	4.48	5.14
Female	Cancer	5.49	5.52
	Cardiovascular diseases	5.77	8.46
	Respiratory diseases	3.14	3.59
C. Province			
Punjab	Cancer	5.84	4.35
	Cardiovascular diseases	13.68	10.73
	Respiratory diseases	4.18	5
Sindh	Cancer	7.41	3.69
	Cardiovascular diseases	6.33	3.9
	Respiratory diseases	2.63	4.32
KP	Cancer	12.94	9.21
	Cardiovascular diseases	14.42	9.14
	Respiratory diseases	3.7	2.58
Balochistan	Cancer	6.57	6.71
	Cardiovascular diseases	3.68	2.03
	Respiratory diseases	3.93	3.92
Source: Author's calculation from the study survey			

Table VI. Present discounted value of lifetime earnings (million PKR)

Age groups	Rural		Urban	
	Male	Female	Male	Female
35-39	7.81	4.55	9.3	9.03
40-44	6.9	5.28	8.7	4.3
45-49	6.4	4.66	7.76	4.83
50-54	4.79	2.19	6.66	4.55
55-59	4.09	3.95	5.47	4.36
60-64	1.5	0.83	1.95	6.22
65-69	1.06	0.86	1.51	0.95
70-74	0.71	0.5	0.81	0.41
75-79	0.5	0.1	0.7	0
80-84	0.27	0.23	0.34	0.04
85+	0	0	0	0

Source: Authors' calculations from the study survey, Labour Force Survey (2017–18), and Pakistan Economic Survey (2018–19)

Table VII. RRs, smoking prevalence, and SAF for all-cause mortality

Region	Disease Group	Male					Female				
		35+ RR	35-64		65+		35+ RR	35-64		65+	
			Pe	SAF	Pe	SAF		Pe	SAF	Pe	SAF
Panel A. Mortality Ratio Approach											
Rural	All Diseases	1.28	28.85	0.07	25.72	0.07	2.53	1.31	0.02	1.84	0.03
Urban	All Diseases	1.28	27.81	0.07	28.23	0.07	2.53	0.92	0.01	1.06	0.02
Notes. Authors' calculations using the survey data											

Table VIII. Comparison of economic cost of smoking with outcome indicators

Outcome indicator	Unit (PKR)	Value
The total economic cost of smoking from three major diseases (2019)	Billion	437.8
The total direct cost of smoking from three major diseases (2019)	Billion	100.3
Revenue from tobacco (smoking) taxation (2018–19)*	Billion	120
Public sector health expenditure on health	Billion	421.8
Total health expenditures **	Billion	1208.5
GDP at current prices (2018–19)	Billion	37972
Cost of smoking (% of GDP)	%	1.15%
Tobacco revenue (% of the cost of smoking)	%	27%
Direct cost as (% of total health expenditures)	%	8.3%

Sources: Data sources include Pakistan Economic Survey (2019–20); Pakistan Bureau of Statistics, National Health Accounts (2015–16) and Ministry of Finance, Government of Pakistan.

Notes: * The major taxed tobacco product in Pakistan is cigarettes. Hence, the revenue from tobacco taxation primarily comes from cigarette taxation. ** The data for Total Health Expenditure is not officially available for the year 2018–19. The last National Health Account report is available for 2015–16. The Total Health Expenditure according to that report was PKR. 908 billion, which was a 20 percent increase (in nominal terms) over the value reported in 2013–14. Assuming the same rate of growth, the authors project the Total Health Expenditure for 2018–19 as reported in the table above.