

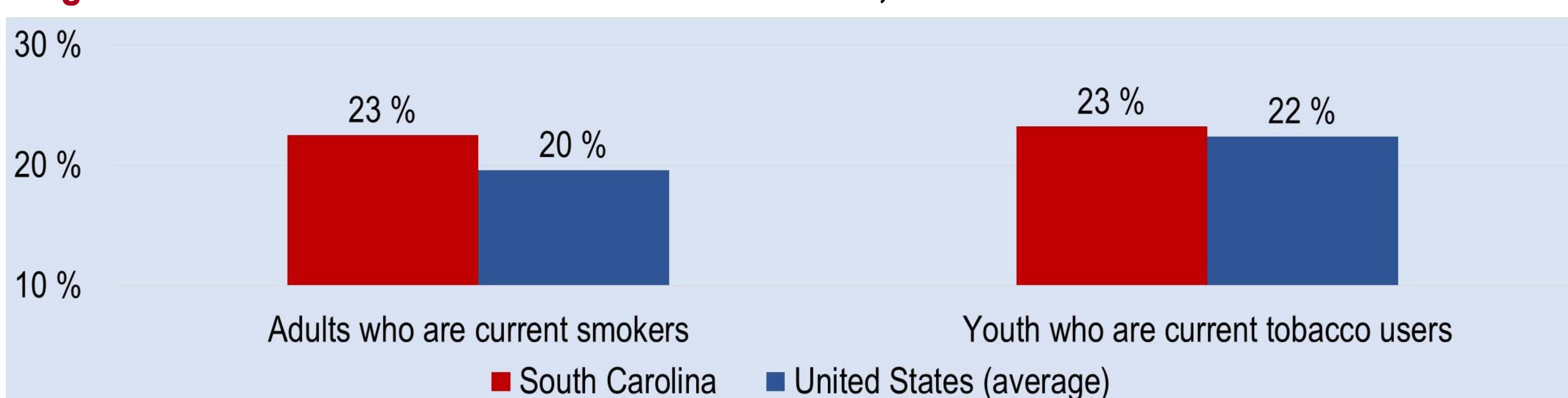
Introduction and Motivation

- ▶ Tobacco is the leading cause of preventable and premature death in US.
- ▶ 443,000 people die annually due to tobacco use.
- ▶ Annually costs over \$210 billion in direct medical costs and lost productivity.
- ▶ Over 3,800 young people under 18 years of age smoke their first cigarette every day and over 1,000 become daily smokers.
- ▶ Vast majority of these young Americans will become addicted to nicotine by young adulthood.
- ▶ 41% of young adults 18-24 years of age attended college in 2012 [2] and are exposed to peer-smoking, secondhand smoke, and are targeted with tobacco industry promotions.
- ▶ 19% of young adults initiate smoking at ages 18-24; almost no one initiates after age 25 [1].
- ▶ These are important health behaviors that if established during adolescence and early adulthood can become lifetime patterns and potentially affect long-term health.
- ▶ Adopting campus tobacco-free policies offers unique opportunities for promoting social norms supporting healthy lifestyles and prevent tobacco use among a large number of young adults.

Table 1. Tobacco Prevalence on Campuses and Support for Tobacco-Free Policy

Tobacco Products	Campus		
	Aiken	Salkehatchie	Union
Cigarettes			
Students	17 %	18 %	19 %
Faculty	7 %	4 %	0 %
Staff	6 %	8 %	8 %
Cigars			
Students	10 %	5 %	7 %
Faculty	2 %	0 %	0 %
Staff	0 %	2 %	4 %
e-Cigarettes			
Students	7 %	7 %	4 %
Faculty	2 %	4 %	0 %
Staff	1 %	0 %	0 %
Hookah / Waterpipe			
Students	11 %	4 %	1 %
Faculty	1 %	4 %	0 %
Staff	3 %	0 %	0 %
Smokeless tobacco (e.g. chewing tobacco or snuff, snus)			
Students	5 %	6 %	1 %
Faculty	3 %	0 %	0 %
Staff	3 %	4 %	4 %
Support for 100% Tobacco-free policy	64 %	75 %	62 %

Figure 1. Tobacco Prevalence in Adults and Youth, South Carolina and US



Source: Adult rates are from BRFSS (2012); Youth rates are from YRBSS (2013)

Table 2. Survey Response Rates

Campus	Target Population			Completed	
	students	faculty/staff	total	count	percent
Aiken	3,392	579	3,971	1,287	32.4 %
Salkehatchie	863	93	956	211	22.1 %
Union	517	35	552	128	23.2 %
Total	4,772	707	5,479	1,626	29.7 %

Objective

Identify socio-economic, demographic, and behavioral characteristics of individuals that predict support for tobacco-free policies among students, faculty and staff of select SC universities.

Policy Importance

To adopt policies and develop programs to reduce smoking on university campuses, it is critical to assess the personal, behavioral, and situational factors associated with support for tobacco control policies among students and campus personnel.

Data

- ▶ Cross-sectional data are collected during 2013 from three University of South Carolina system campuses (Aiken, Salkehatchie, Union) (Table 2).
- ▶ Students, faculty, and staff completed an online questionnaire measuring tobacco use, quitting behavior, and support for a tobacco-free campus policy as well as nutrition, physical activity, health status, social norming, and socio-economic and demographic factors.

Methods

- ▶ **Question of Interest:** *Would you support or oppose [university] changing the current tobacco/smoking policy of all indoor and outdoor campus locations to 100% tobacco free?*
- ▶ **Independent variables** control for socio-economic, demographic, and behavioral factors as well as tobacco use status as described in Table 4.
- ▶ **Modeling approach:** A **logit** model is used to estimate the effects of regressors on the probability of supporting or opposing the tobacco-free policy on their campus.

Table 3. Standardized Coefficient for Statistically Significant Estimates

Variable (x_i)	(A) y-standardized coefficient β_i/σ_{y^*}	(B) Fully standardized coefficient $(\sigma\beta_i)/\sigma_{y^*}$
Campus (Salkehatchie)	0.278	0.089
Currently using tobacco other than cigarettes	-0.306	-0.114
Currently smoking cigarettes	-0.732	-0.257
Feeling down, depressed, or hopeless (1 = yes)	0.212	0.096
Agrees that: Nonsmokers are more attractive to you than smokers.	0.375	0.152
Smoking cigarettes makes young people look cool or fit in.	0.178	0.040
Inhaling smoke from someone else's cigarette can cause lung cancer.	0.349	0.103
Bothered by smoking on your campus	0.994	0.496
Stressed (1 = stressed) per Whooley et al. (1997)	-0.319	-0.151
Reported fair or poor health (vs. excellent/very good health)	-0.325	-0.079
Health insurance (having = 1)	0.215	0.077
Male	-0.119	-0.056
Race (= Black or African American; ref. = white)	0.132	0.054

(A) For a unit increase in x_i , y^* is expected to increase by β_i/σ_{y^*} standard deviations, ceteris paribus.

(B) For a standard deviation increase in x_i , y^* is expected to increase by $(\sigma\beta_i)/\sigma_{y^*}$ standard deviations, ceteris paribus.

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Table 4. Regression Results

Dependent Variable: support (=1) or oppose (=0) tobacco-free policy	Odds R.	Std. Err.	z	p-value
Campus (ref. = USC Aiken)				
Salkehatchie	2.356	0.645	3.13	0.002
Union	0.905	0.269	-0.34	0.737
Role at the University (ref. = Faculty)				
Staff	1.180	0.405	0.48	0.630
Student	1.271	0.496	0.61	0.539
Class standing (ref. = freshman)				
Sophomore	1.072	0.265	0.28	0.778
Junior	0.798	0.203	-0.89	0.375
Senior	0.724	0.184	-1.27	0.204
Graduate	1.017	0.549	0.03	0.975
Other	1.410	0.569	0.85	0.395
Currently using e-cigarettes	1.171	0.524	0.35	0.724
Currently using smokeless tobacco	1.076	0.463	0.17	0.864
Currently using tobacco other than cigarettes	0.390	0.106	-3.47	0.001
Currently smoking cigarettes	0.105	0.067	-3.53	0.000
Heaviness of Smoking Index (ref.=not addicted/not smoking)				
Low addiction	1.132	0.898	0.16	0.876
Moderate addiction	omitted			
High addiction	omitted			
Number of cigarettes smoked over the past 30 days (ref. = none)	0.610	0.220	-1.37	0.171
1-50 cigarettes	1.861	1.282	0.9	0.367
51-200 cigarettes	0.298	0.284	-1.27	0.204
over 201 cigarettes	omitted			
Intention to quit smoking (1 = yes)	1.991	1.016	1.35	0.177
Feeling down, depressed, or hopeless (1 = yes)	1.925	0.685	1.84	0.066
Little interest or pleasure in doing things (1 = yes)	1.367	0.388	1.1	0.271
Agrees that:				
Nonsmokers are more attractive to you than smokers.	3.183	0.629	5.86	0.000
Smoking cigarettes makes young people look cool or fit in.	1.731	0.571	1.66	0.096
Someone who quits smoking will probably gain weight.	0.999	0.160	-0.01	0.993
Young people who smoke cigarettes have more friends.	0.754	0.253	-0.84	0.400
Breathing smoke from other people's cigarettes is harmful to health.	1.195	0.505	0.42	0.674
Inhaling smoke from someone else's cigarette can cause lung cancer.	2.936	1.005	3.15	0.002
Bothered by smoking on your campus	21.460	4.434	14.84	0.000
Fruit consumption (=1 if at least once a day)	1.092	0.211	0.45	0.650
Vegetable consumption (=1 if at least once a day)	0.787	0.147	-1.28	0.201
BMI (ref. = normal)				
Overweight	0.829	0.161	-0.97	0.334
Obese	0.774	0.176	-1.13	0.260
Stressed (1 = stressed) per Whooley et al. (1997)	0.374	0.161	-2.29	0.022
Health risk (=1 if been diagnosed with cancer, cardio. and respire. disease)	1.700	0.594	1.52	0.129
Health status (ref. = excellent/very good health)				
Good	1.073	0.190	0.4	0.692
Fair or poor	0.367	0.119	-3.08	0.002
Health insurance (having = 1)	1.938	0.415	3.09	0.002
Male (ref. female)	0.692	0.118	-2.15	0.032
Age (=1 if under 25 years of age)	0.668	0.171	-1.57	0.116
Race (ref. = white)				
Black	1.502	0.304	2.01	0.044
Asian/PI	1.685	0.892	0.99	0.324
Native American	0.696	0.606	-0.42	0.677
Mixed race	0.626	0.290	-1.01	0.313
Constant	0.115	0.062	-4.04	0.000

Discussion

- ▶ Results add to scarce literature on the determinants of Tobacco-free policy support among university students, faculty, and staff.
- ▶ Results explain factors that are associated with support or opposition to adopting tobacco-free policy at University campuses.
- ▶ Results provide better understanding of the profile of individuals who are likely to oppose adopting tobacco-free policy, hence, enabling University administration and policymakers to promote further dialogue.
- ▶ Results can be of importance to *other* colleges and universities or other educational institutions in the United States who plan to implement tobacco-free policy on their campuses.
- ▶ Results, even though representative of one state, can be assumed to be applicable to other states, especially in the South-east United States.