

Supplement B. Evidence Table of Vape Shop Exclusive Records Assessing Neighborhood-Level Inequities, N=6

Author (Year), ID	Study Design	Study Location	Unit of Analysis (N)	Statistical Approach	Data Source (Year): Area-Level Sociodemographic Variable	Data Source (Year): Tobacco Retailers	Number and Type of Tobacco Retailers Included	Area-Level Outcome Variable Operationalization	Unadjusted Effect Sizes	Risk of Bias
Berg 2020 ¹	Cross-sectional	Metropolitan statistical areas (Atlanta-Sandy Springs-Roswell [Georgia]; Boston-Cambridge-Newton [Massachusetts]; Minneapolis-St. Paul-Bloomington [Minnesota]; Oklahoma City [Oklahoma]; San Diego-Carlsbad [California]; and Seattle-Tacoma-Bellevue [Washington]) USA	Census tracts (N=4,307)	Logistic regression (stratified by metropolitan statistical areas)	American Community Survey (2013-2017) • Percent non-White (quartiles) • Median household income (quartiles)	Vape shops: online search (i.e., Yelp, Google application programming interfaces) (November-December 2017). Used telephone protocol to verify whether retailers sold vape products and ‘other conventional tobacco products’	Vape shops (N=459): “sell no other tobacco products beside vaping products” (p. 2)	Presence (vs. absence) of at least one vape shop	No unadjusted effect sizes reported. “Logistic regressions indicated that vape shops more likely resided in tracts with lower percentages of youth in Boston, but higher percentages of youth in Atlanta, as well as with lower incomes in Boston and Seattle.” p.1	2: Yes 11: Yes 13: No 18: Yes 20: Yes NA1: No NA2: Yes Total: 5
Boston 2018 ²	Cross-sectional	Orange County (California)	Census tracts (N=572)	Mann-Whitney test (comparing median percentage of sociodemographic	5-year American Community Survey (2010-2014)	For vape stores: Online search methodology (e.g., Google, Yelp,	N=163 Vape store	Presence (vs. absence) of at least one vape shop	ES1: No vape store: 12.7% At least 1 vape store: 15.5% p=0.030	2: Yes 11: Yes 13: No

Notes: We used a modified Downs and Black checklist to assess the risk of bias (see online repository protocol). We created a risk of bias index (0-7, with higher numbers indicating higher risk of bias) and *a priori* planned to exclude any studies with a score of 4 or higher (none were excluded).

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		USA		characteristics for tracts with no vape store [n=445] vs. those with at least 1 vape store [n=127])	Percent Asian race only	Yellowpages) conducted September 2014-March 2015 Satellite imagery was used to verify retailer location and stratified random sampling of 36 vape stores were visited for ground truthing.				18: Yes 20: Yes NA1: Yes NA2: Yes Total: 6
				Multivariate zero-inflated Poisson regressions	Percent Asian race only			Count of vape stores	ES6: IRR: 1.00, 95% CI: 0.99, 1.01	
				Mann-Whitney test (comparing median percentage of sociodemographic characteristics for tracts with no vape store [n=445] vs. those with at least 1 vape store [n=127])	Percent Hispanic ethnicity			Presence (vs. absence) of at least one vape shop	ES2: No vape store: 19.3% At least 1 vape store: 33.7% p=0.001	
				Multivariate zero-inflated Poisson regressions	Percent Hispanic ethnicity			Count of vape stores	ES7: IRR: 1.00, 95% CI: 0.99, 1.01	
				Mann-Whitney test (comparing median percentage of sociodemographic characteristics for tracts with no vape store [n=445] vs.	Percent foreign-born (born outside the USA)			Presence (vs. absence) of at least one vape shop	ES3: No vape store: 25.0% At least 1 vape store: 31.6% p=0.004	

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				those with at least 1 vape store [n=127])						
				Multivariate zero-inflated Poisson regressions	Percent foreign-born (born outside the USA)			Count of vape stores	ES8: IRR: 1.00, 95% CI: 0.99, 1.01	
				Mann-Whitney test (comparing median percentage of sociodemographic characteristics for tracts with no vape store [n=445] vs. those with at least 1 vape store [n=127])	Percent living below the federal poverty level (tertiled)			Presence (vs. absence) of at least one vape shop	ES4: No vape store: 8.8% At least 1 vape store: 12.4% p=0.000	
				Multivariate zero-inflated Poisson regressions	Percent living below the federal poverty level (tertiled)			Count of vape stores	Lowest poverty tertile (ref) ES9: 2 nd tertile (IRR 1.69, 95% CI: 1.05, 2.74) ES10: Highest % poverty tertile (IRR: 1.33, 95% CI: 0.82, 2.16)	
				Mann-Whitney test (comparing median percentage of sociodemographic characteristics for tracts with no vape store [n=445] vs. those with at least 1 vape store [n=127])	Percent with college degree or higher (among those 25 and over)			Presence (vs. absence) of at least one vape shop Count of vape stores	ES5: No vape store: 25.9% At least 1 vape store: 20.4% p=0.000	
				Multivariate zero-inflated Poisson regressions	Percent with college degree or higher (among those 25 and over)				ES11: IRR: 1.00, 95% CI: 0.98, 1.02	

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Chido-Amajuoyi 2020 ³	Cross-sectional	Austin (Texas) USA	Census tract (N=200)	Logistic regression	5-year American Community Survey (2014) • Percent distribution of Hispanic • Percent distribution of non-Hispanic Black • Percent distribution of non-Hispanic White • Percent distribution of Other • Percent families living below federal poverty level	Online search methodology: Yelp, Yellow Pages, Google Maps (October 2016-January 2017)	N=52 Vape shops	Presence (vs. absence) of vape shop	No unadjusted effect sizes reported. “The proportion of vape shop containing census tracts that met the criteria for classification as a “poverty area” (36.5%) was greater than that of vape shop-free census tracts (26.3%). Vape shops were more likely to be present in census tracts classified as poverty areas; however, the odds of vape shop presence declined as the percentage of the non-Hispanic Black population and the percentage of persons aged 10–14 years in census tracts increased.” p.1	2: Yes 11: Yes 13: No 18: Yes 20: Yes NA1: No NA2: Yes Total: 5
Dai 2017 ⁴	Cross-sectional	USA	Census tracts (N=72,758)	Zero inflated negative binomial	American Community Survey (2010-2014) • Percent of Caucasian • Percent of black or African American • Percent of Hispanic • Percent of Asian • Percent of persons with Bachelor’s degree or higher and age >= 25 years • Percent of persons living in poverty • Percent of owner-occupied housing units	Online directories (December 2015): Yelp.com; Yellowpagescom; Guidetovaping.com	N=9943 Vape shops	Count of vape shops	No unadjusted effect sizes reported. “In urban areas, higher vape shop density was associated with larger proportions of Hispanics and Asians, adults aged 18–44 years old and higher poverty, while the decrease in vape shop density was associated with larger proportions of population under 18 years old, higher education, larger household size, and a higher percentage of owner occupied housing units. In nonurban areas, higher vape shop density was associated larger proportions of African Americans and Hispanics, smaller household size and a	2: Yes 11: Yes 13: Yes 18: Yes 20: Yes NA1: No NA2: Yes Total: 6

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									lower percentage of owner occupied housing units.” p.1338	
Giovenco 2016 ⁵	Cross-sectional	New Jersey USA	Census tract (N=1989)	Mann-Whitney U test comparing mean (μ) sociodemographic characteristics for trats with at least one vape shop present (n=125) as compared to tracts with no vape shop present (n=1864)	American Community Survey 5-year (2013) Percent non-Hispanic black	Yelp; online search protocol (i.e. systematic searches of Google, Google Maps, Facebook, and vape shop directories on vaping websites), and each store was contacted via telephone to verify current operation (June and July 2015)	N=130 All identified vape shops (i.e., “retailers that sells vaping products and its accessories but does not sell tobacco products” p. 124)	Presence (vs. absence) of vape shop	ES1: Vape shop present: μ (SD): 7.9 (11.2) No vape shop present: μ (SD): 15.6 (23.1) p<0.01	2: Yes 11: Yes 13: No 18: Yes 20: Yes NA1: Yes NA2: Yes Total: 6
					Percent Hispanic			Presence (vs. absence) of vape shop	ES2: Vape shop present: μ (SD): 16.3 (16.1) No vape shop present: μ (SD): 18.2 (20.6) p=0.63	
					Percent non-Hispanic white			Presence (vs. absence) of vape shop	ES3: Vape shop present: μ (SD): 65.6 (24.6) No vape shop present: μ (SD): 57.4 (30.9) p=0.01	
					Percent with less than high school education			Presence (vs. absence) of vape shop	ES4: Vape shop present: μ (SD): 11.6 (8.1) No vape shop present:	

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									μ (SD): 12.6 (10.4) p=0.79	
					Median income			Presence (vs. absence) of vape shop	ES5: Vape shop present: μ (SD): \$35,207 (\$10,059) No vape shop present: μ (SD): \$36,142 (\$13,901) p=0.88	
					Percent without health insurance			Presence (vs. absence) of vape shop	ES6: Vape shop present: μ (SD): 13.2 (8.1) No vape shop present: μ (SD): 13.1 (9.7) p=0.22	
Sawdey 2017 ⁶	Cross-sectional	Richmond, Virginia Metropolitan Statistical Area USA	Census tract (N=288)	Analysis of Variance (ANOVA) with Bonferroni pairwise comparisons	American Community Survey (2014) “Socioeconomic status index created using principal components analysis from the following variables: percent unemployed, percent below poverty threshold, percent less than high school education, percent college education or higher, median household value, median household income”(variables	“Websites of popular e-cigarette brands” (n=6) ”E-cigarette brand websites were used as a proxy for where tobacco products are sold as Virginia does not license retailers” (p. 124); Yelp.com & Google.com “were used to capture non-traditional tobacco/e-cigarette retailers such as vape shops” (p. 124)	N=984 Tobacco retailers selling e-cigarette products, including vape shops	Count of tobacco retailers	ES1: Q1 (lowest): 3.7 Q2: 3.7 Q3: 3.8 Q4 (highest): 2.4 p-values not specified: Q4 “was significantly lower...versus other quartiles” (p. 134) This paper additionally reports regression analyses that control for census tract population.	2: Yes 11: Yes 13: No 18: Yes 20: Yes NA1: No NA2: Yes Total: 5

Notes: We used a modified Downs and Black checklist to assess the risk of bias (see online repository protocol). We created a risk of bias index (0-7, with higher numbers indicating higher risk of bias) and *a priori* planned to exclude any studies with a score of 4 or higher (none were excluded).

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					standardized and factor scores quartiled) (p. 126)					
					“Socioeconomic status index created using principal components analysis from the following variables: percent unemployed, percent below poverty threshold, percent less than high school education, percent college education or higher, median household value, median household income”(variables standardized and factor scores quartiled) (p. 126)			Count of tobacco retailers per 10 kilometers of roadway	ES2: Q1 (lowest): 0.26 Q2: 0.16 Q3: 0.15 Q4 (highest): 0.16 p-values not specified: Q1 “was significantly higher...versus other quartiles” (p. 134) This paper additionally reports regression analyses that control for census tract population.	
					Race diversity index (created): “Majority White”: tracts >60% White; “Majority non-White”: >60% Non-white; “Racially diverse”: less than 60% of both (p. 126)			Count of tobacco retailers	ES3: White: 3.5 Non-white: 3.4 Diverse: 3.5 p-values not specified: “there was a non-significant difference” (p. 133)	
					Race diversity index (created): “Majority White”: tracts >60% White; “Majority non-White”: >60% Non-white; “Racially diverse”: less than 60% of both (p. 126)			Count of tobacco retailers per 10 kilometers of roadway	ES3: White: 0.15 Non-white: 0.19 Diverse: 0.26 p-values not specified and unclear which pairwise comparisons were done: “Diverse tracts...significantly	

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									higher than white...or non-white tracts...” (p. 133)	

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