



Built Environment: Examining Race, Class, and the Alcohol Outlet in the Urban Context

F. Abron Franklin, PhD, JD, MPH



Introduction

Alcohol availability is a part of the built environment. The severity of alcohol-related problems a community experiences directly relates to the density of alcohol-selling outlets among its neighborhoods. In addition to individual-level influences, community-level characteristics, such as alcohol outlet density, independently influence alcohol-related drinking norms, consumption, and health outcomes. Given the high concentration of alcohol outlets across the urban landscape and the limited research on the structural determinants that may promote or sustain outlet proliferation, the purpose of this study is to identify structural predictors associated with the promotion or growth of alcohol outlets; determine if the association varies by the type of alcohol outlet facility; and assess the impact of neighborhood indicators of race and class. A negative binomial multivariate regression analysis was used to identify relevant neighborhood structural features significantly associated with alcohol outlet exposure among the census tracts of Washington, D.C.

Objectives

Identify structural characteristics associated with the promotion or proliferation of alcohol outlets; determine if the association varies by the type of alcohol outlet facility; and assess the impact of neighborhood indicators of race and class.

Conclusion

The three strongest correlates of an alcohol outlet concentration in an urban community were median income, residential stability, and commercial land use. Commercial land use remained consistent between off-premise and off-premise outlets; yet, the residential status of home ownership is a better indicator of the off-premise outlet.

Disproportionate concentrations of alcohol outlets can exist in either affluent or economically distressed communities; yet, the difference lies in the type of alcohol outlet. In turn, the type of alcohol related problems experienced by the community will also vary by the type of alcohol outlet.

Alcohol outlet concentration is influenced by the balance between commercial and residential land use, residential transience and social mobility, and class composition and racial segregation.

The determinants are consistently associated between alcohol outlet but, their effects are dissimilar. The residential stability and commercial land use affect are qualitatively distinct, but their effect appears to be conditioned on the community context.

Densities of off-premise alcohol outlets are more likely to be located among lower income, less transient, and minority concentrated communities. On the other hand, densities of on-premise outlets are more likely to be located among racially integrated neighborhoods with higher incomes, greater residential or social mobility, and more affluent commercial districts.

The concentration of alcohol outlets are not randomly distributed and, ultimately, the social dynamics of race and class influence the likelihood and type of alcohol outlet exposure experienced at the community level.

Methods

Study Site. Data used for this study pertain to the city of Washington, D.C. Based on the 2000 decennial census, Washington, D.C. had a total population of 572,059. The District of Columbia consisted of 188 census tracts and 5,674 census blocks. Citywide, 16.7% of the families and 20.2% of the individuals lived below the poverty level. The median household income was \$40,127 and 78% of the population was a high school graduate or higher. The population was 30.8% white, 60% African American, 7.9% Hispanic or Latino, .3% American Indian and Alaska Native and 0.1% Native Hawaiian and Other Pacific Islander. In this study, the unit of analysis is the census tract, which serves as a proxy for community neighborhoods.^{10,46-50} The population in a census tract ranges from 1000-4000 persons. The research draws on population data from various secondary sources to develop an analytic database. Indicators of community structural characteristics were constructed using 2000 decennial census data and municipal-level population data was used to identify alcohol outlets and violent crime events.

Dependent Variables. Washington, D.C.'s Alcohol Beverage Regulation Administration (ABRA) provided data on the outcome variable of alcohol outlets for the year 2006. In Washington, D.C., there are four primary types of alcoholic licenses: class "A" licenses are for package stores which permit the sale of beer, wine, and liquor for consumption off the premises; class "B" licenses are generally reserved for grocery stores to sell only beer and wines for consumption off the premises; class "C" licenses are for the consumption of beer, wine, and liquor on the premises and class "D" licenses function the same as class "C" licenses, except for the sale of liquor. In this study, alcohol outlets were grouped into the categories of on-premise outlets, off-premise outlets, and overall or total number of outlets.

Independent Variables. Identified in previous research as structural correlates of alcohol outlets, sixteen variables were considered as indicators of community structural features and used to develop the most parsimonious model.⁵¹⁻⁵⁷ Specifically, the research considered 9 census based covariates of outlet densities that were constructed using Census 2000 Data Engine Software. Of the 9 census based variables, two were indicators of **economic distress**,⁵⁸ (household poverty and family composition); two were indicators of **population density** (household crowding or occupancy per room and people per square mile); a measure of **racial/ethnic composition** (African American); two capturing **residential stability**⁵⁹ (having moved within the last 2-5 years and home ownership); an indicator of **educational attainment** (the number of high school dropouts); and a measure of **gender composition** (male ages 16-24).

Municipal-level population data was used to construct the four indicators of violent crime, commercial land use, social capital, and disorder.^{58,60-62} Violent crime data were obtained from local police department and, in accord with the Uniform Crime Report (UCR), **violent crime** was defined as the aggregate number of homicides, robberies, sexual assaults, and aggravated assaults. An indicator of **commercial land use** was the proportion of the census tract dedicated to commercial land use. **Social capital** and **disorder** were assessed as the number of registered voters and the number of occupied households, respectively.⁶³⁻⁶⁶ Except where expressed otherwise, all variables were counts per population based rates geocoded to their respective census tracts.

The final set of variables reflect the geographical features of **racial segregation** and **class**.^{67,68} The class composition of a community was assessed using the two indicators of the number of female headed households at or below the 1999 federal poverty level with children below the age of 18 and the median household income, which ranged from \$8,089 to \$160,829 across census tracts. Racial segregation was assessed using the index of dissimilarity. The index measures the evenness with which two mutually exclusive groups are distributed across the geographic units that make up a larger geographic entity; for example, the distribution of African Americans and whites across the census blocks that make up a census tract. Values of the index range from 0-1, or the index can be scaled from 0-100, with values approaching zero assuming a greater degree of random distribution of African Americans and whites across the geographical space.⁶⁹ The standard criterion for characterizing an area as being segregated is an index value equal to 60 or above.

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Results

Table 1. Negative Binomial Regression of total number of alcohol outlets regressed on median income, residential stability and percentage of commercial land use

Variable	Exp (b)	Z	p
Median Income ^a	1.18*	4.68	.0001*
Residency (2-5yrs) ^b	1.04	1.24	0.217
Commercial Land Use	1.09*	7.26	.0001*
Model Statistics			
Prob. > Chi ²	.0001*		
Alpha	.5964		
LR test of Alpha	.0001*		

*Significant at the p<.05 level (two-tailed)
 (a) Per \$10,000
 (b) Per 100 Households

Table 2. Negative Binomial Regression of On-premise and Off-premise outlets regressed on residential stability, percentage of commercial land use, and home ownership

Variable	On-Premise Outlets			Off-Premise Outlets		
	Exp(b)	Z	p	Exp(b)	Z	p
Residency (2-5yrs) ^a	1.23*	3.09	.002*			
Commercial Land Use	1.10*	4.17	.0001*	1.05*	5.46	.0001*
Home Ownership ^b				1.29	1.49	.137
Model Statistics						
Prob. > Chi ²	.0001*			.0001*		
Alpha	2.42			.223		
LR test of Alpha	.0001*			.001*		

*Significant at the p<.05 level (two-tailed)
 (a) Per 100 Households
 (b) Per 1000 Households

Table 3. Negative Binomial Regression of On-premise and Off-premise outlets regressed on residential stability, percentage of commercial land use and home ownership with race/class indicators

Variable	On-Premise Outlets			Off-Premise Outlets		
	Exp(b)	Z	p	Exp(b)	Z	p
Residency (2-5yrs) ^a	1.10	1.77	.077			
Commercial Land Use	1.14*	5.76	.0001*	1.04*	4.96	.0001*
Home Ownership ^b				1.43	1.63	.102
Race/Class						
Median Income ^c	1.30*	3.43	.001*	-0.88*	-2.65	.008*
Female Household ^a	-0.95	-1.88	.094	-0.95*	-3.27	.001*
Dissimilarity Index	-0.95	-0.53	.596	1.06	1.66	.097
Model Statistics						
Prob. > Chi ²	.0001*			.0001*		
Alpha	2.42			.150		
LR test of Alpha	.0001*			0.01		

*Significant at the p<.05 level (two-tailed)
 (a) Per 100 Households
 (b) Per 1000 Households
 (c) Per \$10,000