

# OKLAHOMA BEER PURCHASE STUDY

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**eteam**  
*University of Oklahoma* OUTREACH

**In Participation with:**

Oklahoma Department of Mental Health  
and Substance Abuse Services





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## Oklahoma Beer Purchase Study for the Oklahoma Department of Mental Health and Substance Abuse Services

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# OKLAHOMA BEER PURCHASE STUDY

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# OKLAHOMA BEER PURCHASE STUDY

## Acknowledgments

A special thanks to the ABLE Commission agents and the buyers who completed the purchase attempts and surveys for this study. The time and effort they put into this project is greatly appreciated.

Thank you to E-TEAM's Sharon Strait, Isabel Gutierrez, and Katty Tong for collecting and managing study data for this project.







# STUDY PARTNERS

Oklahoma Department of Mental Health  
and Substance Abuse Services

## Oklahoma Department of Mental Health and Substance Abuse Services

The Oklahoma Department of Mental Health and Substance Abuse Services (ODMHSAS) is responsible for providing services to Oklahomans who are affected by mental illness and substance abuse. In addition, the ODMHSAS partners with other organizations on the 2 Much 2 Lose (2M2L) initiative, which aims to decrease underage drinking and youth access to alcohol (State of Oklahoma, ODMHSAS, 2015). The ODMHSAS received funding from the Oklahoma Highway Safety Office to conduct the Oklahoma Beer Purchase Study with the goal of determining the statewide rate of beer sales to underage youth and to identify establishment characteristics and other factors that may be related to selling beer to underage youth.

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## Oklahoma Alcoholic Beverage Laws Enforcement Commission

The Oklahoma Alcoholic Beverage Laws Enforcement (ABLE) Commission is responsible for ensuring compliance with the Oklahoma Alcoholic Beverage Control Act through regular inspections of licensed entities. Priority enforcement is directed toward the elimination of access to alcoholic beverages and tobacco products to underage persons (State of Oklahoma, Oklahoma ABLE Commission, 2015a). The Oklahoma ABLE Commission brought to this study their extensive experience with conducting compliance checks across the state, and completed the surveys for this study.



## Educational Training, Evaluation, Assessment, and Measurement

The Educational Training, Evaluation, Assessment, and Measurement (E-TEAM) department at the University of Oklahoma's College of Continuing Education designs research and evaluations to help organizations understand and use information and data to solve real-world problems. The E-TEAM worked in collaboration with the ODMHSAS and the Oklahoma ABLE Commission to design this study, and the E-TEAM prepared this report detailing the findings.



# EXECUTIVE SUMMARY

The purpose of the purchase survey is to determine who is selling beer to minors and how often this is occurring in the state of Oklahoma. In addition, this study examined the characteristics of these establishments and other factors that may be related to the sale of beer to underage youth.

Underage youth, accompanied by Oklahoma ABLE Commission agents, attempted to purchase beer at 679 establishments, including on-premise and off-premise locations. On-premise locations are those in which alcohol is purchased and consumed on the premises, such as restaurants; off-premise locations are those in which alcohol is purchased and consumed elsewhere, such as convenience stores. Following each attempt a survey was completed, which included information about the establishment, the purchase attempt, the outcome of the sale, demographic information about the clerk, the number of customers in the establishment at the time of the attempt, and whether or not the clerk asked for the buyer's age or state-issued identification. **3**

Overall, 34% of establishment throughout the state showed an intent to sell beer to underaged youth with a range of 16% to 64% in each region. Several factors and characteristics emerged as having a statistically significant relationship with beer being sold to underage youth.

- On-premise establishments were more likely to sell beer than off-premise establishments.
- Restaurants, bars/clubs, convenience stores that do not sell gasoline, and retail package stores<sup>1</sup> were more likely to sell beer to youth under 21 than other types of establishments, such as supermarkets and grocery stores.
- Establishments with alcohol stored in locked cases or enclosed areas (e.g., behind counters in retail package stores or behind bars) were more likely to sell beer than those without alcohol stored in locked cases or enclosed areas.
- Clerks were more likely to sell beer to underage youth when they did not ask for proof of age.
- Younger clerks were more likely to sell than older clerks.

<sup>1</sup> Retail package stores are establishments that have licenses to sell beer and alcohol containing more than 3.2% alcohol.



# STUDY

## PURPOSE

The purpose of the purchase survey is to determine who is selling beer to minors and how often this is occurring in the state of Oklahoma. In addition, this study examined the characteristics of these establishments and other factors that may be related to the sale of beer<sup>2</sup> to underage youth.

## DESIGN

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### Sample

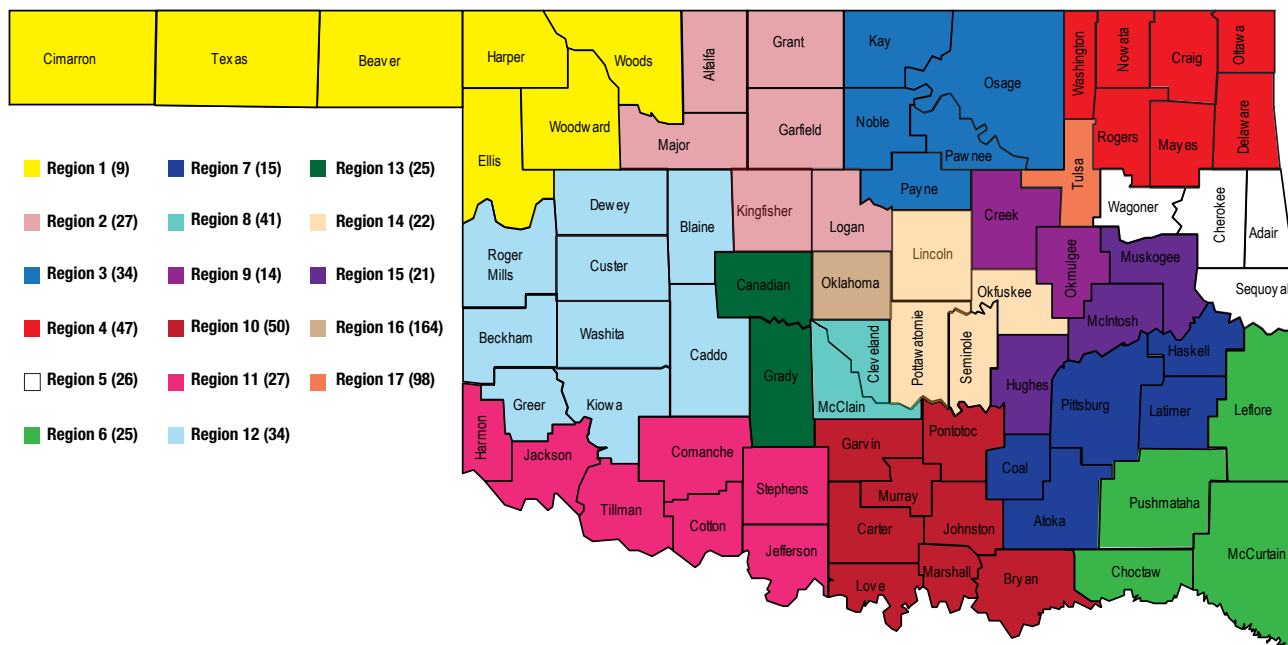
In Oklahoma, licensed retail package stores and on-premise establishments, such as bars, clubs, and restaurants, are permitted to sell beer that is more than 3.2% alcohol by weight. Off-premise establishments, such as grocery stores and convenience stores, are permitted to sell low-point beer (beer that is less than or equal to 3.2% alcohol by weight). To gather data for all types of beer sales and compare them, two samples were obtained: one for retail package stores and one for all other establishment types.

A list of establishments that sell low-point beer was obtained from the Oklahoma Tax Commission and was current as of July 1, 2013. This list contained all locations, with the exception of all retail package stores, that were permitted to sell low-point beer in the state. The type of location (e.g., restaurant, convenience store) was not indicated on the list, so researchers attempted to identify the type of each establishment based on its name or through internet searches. Several types of establishments were removed<sup>3</sup> before the sample was drawn, as they were not the focus of the study. A list of retail package stores that were licensed to sell alcohol was obtained from the Oklahoma ABLE Commission website (State of Oklahoma, Oklahoma ABLE Commission, 2015b) and was current as of March, 2015. Both lists were cleaned prior to

<sup>2</sup> For the purpose of this study, “beer” includes both low-point beer and beer containing more than 3.2% alcohol by weight, unless otherwise specified.

<sup>3</sup> Types of establishments that were removed from the list included hotels and motels, event centers, catering businesses, party supply stores, wineries, private organizations, retail package stores, and other types that were not of interest in this study. A total of 685 establishments were removed from the original list.

Figure 1. Oklahoma Prevention Regions (Number of Purchase Attempts)



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the sample being drawn to remove any establishments that were closed for business or did not sell beer.

The final lists contained 675 retail package stores and 6,616 other types of establishments, including on-premise establishments (bars, clubs, bowling alleys, and restaurants) and off-premise establishments (convenience stores, drugstores, supermarkets, and small grocery stores/delis). A stratified sample was drawn from each of the lists. The ODMHSAS divides Oklahoma into 17 prevention regions, each of which has a Regional Prevention Coordinator (RPC) that provides regional prevention services (see Figure 1). These regions served as strata, and the sample was randomly selected from each stratum. The stratum sample sizes were determined proportionally to the number of eligible establishments in each stratum. For example, 2.61% of the establishments that were not retail package stores were in district one; therefore, 2.61% of the establishments in the sample were taken from district one. Within strata, establishments were selected by systematic random sampling where the sample interval was determined based on the number of establishments in the stratum and the number needed, then by using a random number generator to determine the starting point. The number of establishments needed for each sample (retail package stores and all other types) was determined using a confidence interval of five and a 95% confidence level. An additional number of establishments were added to the sample to compensate for sample loss in the field. A final sample of

287 retail package stores and 500 other types of establishments was provided to the Oklahoma ABE Commission. The sample represented 43% of the retail package stores and 8% of the other licensed locations in the state.

**Underage Buyers & Oklahoma ABE Commission Agents**

Four underage buyers were hired by the ODMHSAS to attempt to purchase beer at the establishments<sup>4</sup> in the sample. All four buyers were female. Two were Caucasian, one was Native American, and one was Hispanic. One buyer was 19 years old, while the other three were 20. All four buyers underwent an age perception screening prior to hire, in which 10 random people from a public location were asked to estimate the potential buyers' ages. The average age scores for the four hired buyers ranged between 18.4 and 19.7 years. Prior to their participation in the study, all buyers signed consent forms provided by the Oklahoma ABE Commission and were assigned an identification number to be included on survey forms so that the identification of the buyer was not known by researchers.

Seven Oklahoma ABE Commission agents participated in the study during their overtime hours; each agent completed between 6% and 29% of the surveys, depending on their availability (see

<sup>4</sup>The Oklahoma ABE Commission recieved special permission from the Oklahoma Office of the Attorney General to assists on buy attempts at convenience stores, grocery stores, and other locations that are not licensed to sell alcohol, as these locations are not in the ABE Commission's authority.

Figure 2). Agents were responsible for accompanying the buyers during purchase attempts.

## Survey

A survey form was designed for completion following each purchase attempt (see Appendix A). The form had two parts: one side was for the Oklahoma ABLE Commission agent to complete and one side was for the underage buyer to complete. The agent's section included information about the establishment, the purchase attempt, and the outcome of the sale. The buyer's section included demographic information about the clerk from which they attempted to purchase the beer, the number of customers in the establishment at the time of the purchase attempt, and whether or not the clerk asked for the buyer's age or state-issued identification. Demographic information about the clerk, such as age, ethnic group, and gender, was based on the buyer's best approximation.

## Protocol & Training

A detailed protocol (see Appendix B) was designed to guide Oklahoma ABLE Commission agents and the underage buyers in how the attempts should be completed. The purpose of the protocol was to ensure that each purchase attempt was made following

an identical procedure to eliminate confounding factors. Agents and buyers attended a two-hour training on the protocol that was led by the E-TEAM and the ODMHSAS staff, and the Oklahoma ABLE Commission.

## Procedure

For purchase attempts, underage buyers dressed as they normally would in a casual setting, wore minimal makeup, and did not drastically alter their appearance from the day of the age perception screening. To reduce confounding caused by differences in buyers, agents tried to rotate buyers so that they completed purchase attempts with equal frequency. Oklahoma ABLE Commission agents were responsible for driving the underage buyers to each location in the sample. Agents used unmarked state vehicles and made every attempt to park where the vehicle and occupants would not be visible to individuals inside the establishment. The agent entered the establishment first to determine whether it was safe for the buyer to enter. If the agent deemed the location safe, the agent remained in the location and the buyer then entered a few minutes later. Buyers carried only their state-issued identification. No wallets, purses, or other items were carried into the establishment. The survey form and all other items related to the study, with the exception of the Notice of Warning, were left in the vehicle. The buyer attempted to purchase a particular brand

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Approximately  
**1** in **3** stores



sold beer to underage youth.

of beer and no other items. The procedure varied for each type of location (on-premise, off-premise, and retail package stores, see Appendix B). If the buyer was asked her age or asked to provide identification, she answered honestly or provided her identification. The buyer did nothing to entice a sale or encourage staff to make a sale. If the clerk indicated they were going to make the sale, the buyer exited the establishment and the agent took over, explaining the reason for the purchase attempt and issuing a Notice of Warning. The warning explained that it was only a warning and no fine or appearance in court was required, and provided contact information for the Oklahoma ABLE Commission agent in charge of the study.

## RESULTS

### Survey Attempts

Of the 787 establishments in the sample, 679 attempts were completed (243 retail package stores, 436 other types of establishments), resulting in a completion rate of 86%. For the remaining 108 establishments, attempts were either not made, the surveys were not included in the analysis, or attempts were made but were incomplete for various reasons (see Table 1).

**Table 1. Surveys Not Included in Analysis**

| Reason Not Included                | #  |
|------------------------------------|----|
| Attempt not made                   | 36 |
| Surveys not included in analysis   |    |
| Incomplete form                    | 11 |
| Protocol not followed              | 17 |
| Attempt made but incomplete        |    |
| Does not sell beer                 | 3  |
| Unsafe location                    | 3  |
| No reason provided                 | 3  |
| Out of business/under construction | 9  |
| Closed                             | 13 |
| Denied entrance                    | 6  |
| Unable to locate                   | 2  |
| Meal purchase required             | 2  |
| Private membership required        | 3  |

### Buyer and Agent Characteristics

Though agents made every effort to complete purchase attempts with each buyer equally, scheduling issues created difficulties. As a result, buyers completed between 25% and 42% of the attempts. There was a statistically significant difference in the number of

successful<sup>5</sup> purchase attempts between buyers, with buyers 2 and 3 having more successful attempts than expected,  $\chi^2(3) = 10.23, p < .05, V=.12$ .

There was not a statistically significant difference in the successful purchase attempts between ABLE Commission agents,  $\chi^2(6) = 7.82, p > .05, V=.11$ .

### Establishment Characteristics

The majority of purchase attempts were made at convenience stores that sell gasoline and retail package stores (see Figure 2). Comparisons of attempt outcomes between establishment types revealed a statistically significant difference<sup>6</sup>,  $\chi^2(7) = 26.36, p < .001, V=.20$ . Bars/clubs, convenience stores that do not sell gasoline, retail package stores, and restaurants were more likely to sell beer to underage youth than other establishment types.

Of the total completed attempts, 164 (24%) of the establishments were on-premise and 515 (76%) were off-premise. On-premise locations were statistically more likely to sell beer to underage youth than off-premise locations,  $\chi^2(1) = 10.33, p < .01, V=.12$ . Of the attempts made in on-premise locations, beer was sold 44% of the time compared to 30% of the time in off-premise locations.

There was no statistically significant difference between the number of sales made at retail package stores compared to those made at other types of establishments,  $\chi^2(1) = .56, p > .05, V=.03$ . Of the attempts made at retail package stores, beer was sold 35% of the time compared to 33% of the time in all other establishment types.

The location of the alcohol in establishments was examined for differences (see Figure 2). In off-premise locations, alcohol was primarily located in a refrigerated area or on open shelves (see Appendix C). In on-premise locations, alcohol was primarily located in a refrigerated area or in a locked or enclosed area.

Establishments where alcohol was located in locked cases or an enclosed area were significantly more likely to sell beer to underage youth than establishments in which alcohol was not located in locked cases or an enclosed area,  $\chi^2(1) = 5.30, p < .05, V=.09$ . There was no statistically significant difference between establishments where alcohol was located on open shelves and establishments where alcohol was not located on open shelves,  $\chi^2(1) = .26, p > .05, V=.02$ ; between establishments where alcohol was located in a refrigerated area and establishments where alcohol was not located in a refrigerated area,  $\chi^2(1) = 2.72, p > .05, V=.06$ ; or between establishments where alcohol was located at the checkout counter and establishments where alcohol was not located at the checkout counter,  $\chi^2(1) = 1.81, p > .05, V=.05$ .

Establishments where signage<sup>7</sup> related to underage drinking or

<sup>5</sup> A successful purchase attempt is defined as one in which the clerk demonstrated an intent to sell the beer to the underage youth.

<sup>6</sup> For the purposes of analysis, bowling alleys were combined with the 'other' category and small grocery stores/delis were combined with supermarkets.

<sup>7</sup> Such signs may say "It is unlawful to provide alcohol to persons under 21 years of age."



Figure 2. Location of Alcohol in Business

### LOCATION OF ALCOHOL

When the location of the alcohol was in a locked case or open shelves, the percentage of an unauthorized sale was 44% and 33%, respectively.

#### LOCKED CASES OR ENCLOSED AREA



44%

#### OPEN SHELVES OR RACK (SELF SERVICE)



33%

LOCKED CASES OR ENCLOSED AREA  
 OPEN SHELVES OR RACK (SELF SERVICE)  
 COOLER OR REFRIGERATED AREA  
 CHECKOUT COUNTER

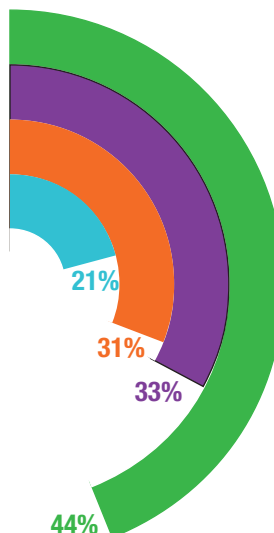
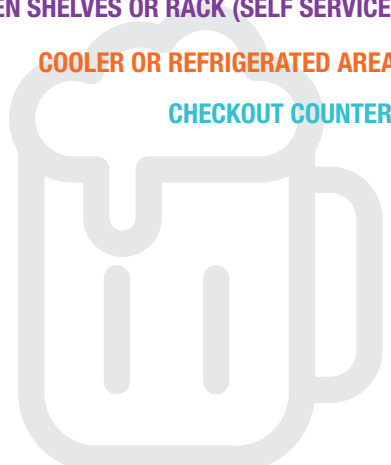


Figure 3. Outcome by Type of Business



**Table 2. Number of Establishments with Signage Related to Underage Drinking or Sales by Type of Business**

| Type of Business                | Signage not | Signage    | Total      |
|---------------------------------|-------------|------------|------------|
|                                 | Present     | Present    |            |
| Bar/Club                        | 15          | 22         | 37         |
| Convenience Store (with gas)    | 56          | 135        | 191        |
| Convenience Store (without gas) | 5           | 14         | 19         |
| Drugstore/Pharmacy              | 7           | 9          | 16         |
| Other                           | 3           | 2          | 5          |
| Restaurant                      | 55          | 69         | 124        |
| Retail Package Store            | 31          | 208        | 239        |
| Supermarket/Small Grocery/Deli  | 23          | 20         | 43         |
| <b>Total</b>                    | <b>195</b>  | <b>479</b> | <b>674</b> |

Note. Data concerning the presence of signage related to underage drinking or sales was missing for 5 surveys.

sales was present were compared to establishments where no such signage was displayed (see Table 2). Off-premise establishments were significantly more likely to have signage present than on-premise establishments,  $\chi^2(1) = 23.63, p < .001, V = .19$ , and retail package stores were significantly more likely to have signage than other type of establishments,  $\chi^2(1) = 45.88, p < .001, V = .26$ . Signage was present in 71% of the establishments surveyed, and in those establishments, sales were made 32% of the time. In comparison, in establishments without signage, sales were made 38% of the time. This was not a statistically significant difference,  $\chi^2(1)$

$= 2.57, p > .05, V = .06$ .

### Day and Time of Attempts

Most purchase attempts were made on Thursday or Saturday (see Figure 5). The fewest attempts occurred on Friday and Sunday. There were more sales on Wednesday, Friday, and Saturday than expected, but there was no statistically significant relationship between the number of sales made and day of the week the attempt was made,  $\chi^2(6) = 8.64, p > .05, V = .11$ .

**10 Table 3. Purchase Attempts By Time of Day and Outcome**

| Time                   | Number of Total Attempts | Percent of Total Attempts | Percent of                   |
|------------------------|--------------------------|---------------------------|------------------------------|
|                        |                          |                           | Attempts where Sale was Made |
| 12:00 a.m. - 3:59 a.m. | 1                        | 0%                        | 0%                           |
| 4:00 a.m. - 7:59 a.m.  | 0                        | 0%                        | 0%                           |
| 8:00 a.m. - 11:59 a.m. | 16                       | 2%                        | 25%                          |
| 12:00 p.m. - 3:59 p.m. | 175                      | 26%                       | 31%                          |
| 4:00 p.m. - 7:59 p.m.  | 303                      | 45%                       | 35%                          |
| 8:00 p.m. - 11:59 p.m. | 184                      | 27%                       | 35%                          |

The largest percentage of the purchase attempts were made between the hours of 4:00 p.m. and 7:59 p.m. (see Table 3). Only one attempt was made between the hours of 12:00 a.m. and 7:59 a.m. Sales were most likely to be made between the hours of 4:00 p.m. and 11:59 p.m.; however, there was no statistically significant relationship between the number of sales made and the time of day the attempt was made<sup>8</sup>,  $\chi^2(3) = 1.74, p > .05, V = .05$ .

### Clerks and Customers

In 81% of the establishments, clerks asked the buyer's age and/or asked for their state-issued identification. Sales were made in 91%

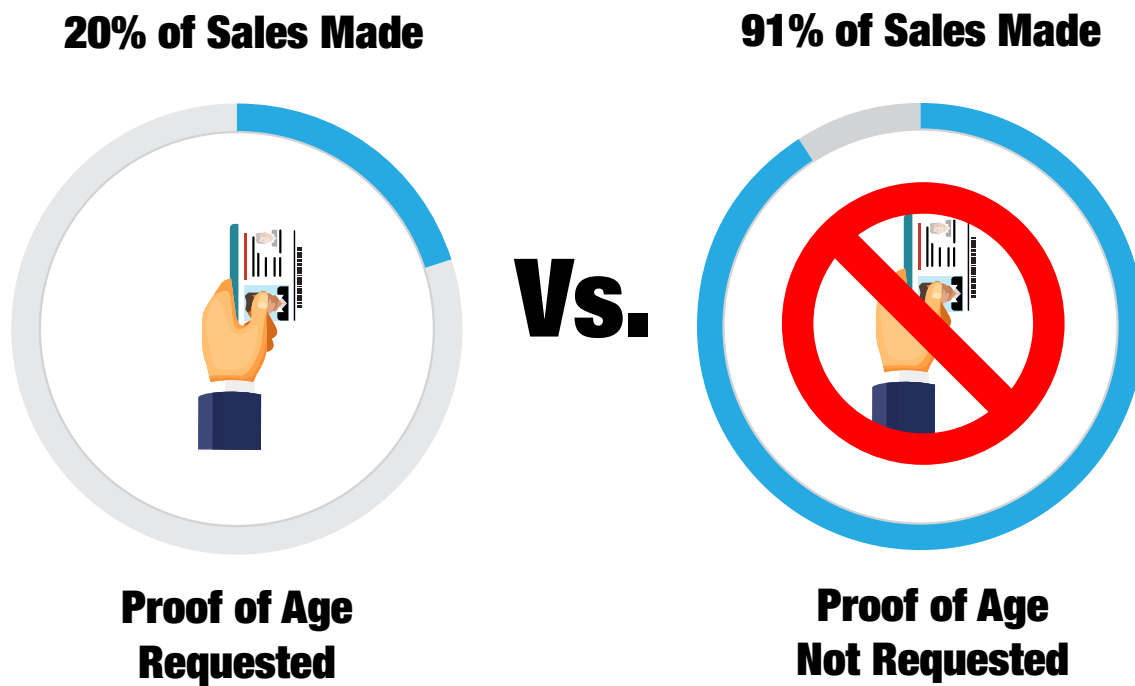
of the establishments in which proof of age<sup>9</sup> was not requested. In comparison, sales were made in 20% of the establishments in which proof of age was requested. Whether or not the clerk requested proof of age was significantly related to whether or not the sale was made,  $\chi^2(1) = 230.38, p < .001, V = .58$ . Proof of age was significantly more likely to be requested in off-premise establishments than in on-premise establishments,  $\chi^2(1) = 3.86, p < .05, V = .08$ . Clerks in retail package stores were less likely to ask for proof of age than clerks in other types of establishments, though the difference was not significant,  $\chi^2(1) = 1.45, p > .05, V = .05$ .

The number of clerks present in the establishment at the time of the purchase attempt was examined to determine if there was a

<sup>8</sup> For the purposes of analysis, sales made between the hours of 12:00 a.m. and 11:59 a.m. were combined into one category.

<sup>9</sup> Proof of age is defined as the clerk asking the buyer their age, asking the buyer for their state-issued identification, or asking the buyer for both.

Figure 4. Percentage of Sale Made When Proof Age Requested/Not Requested



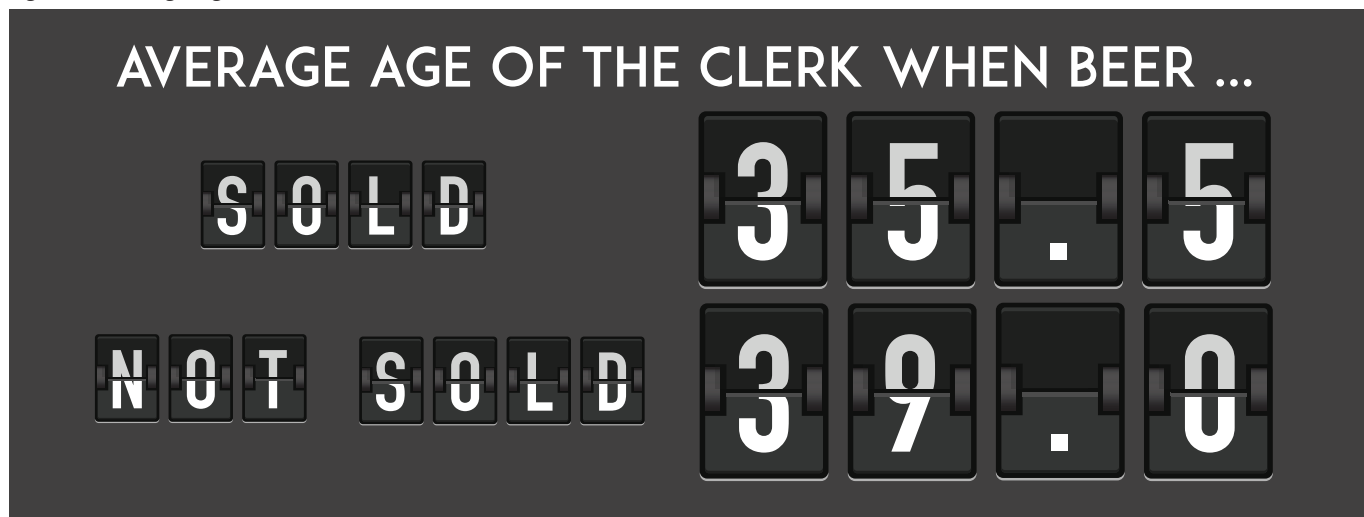
relationship between the number of clerks present and whether or not beer was sold. The average number of clerks present when beer was sold was 1.43 ( $SD=.66$ ). In establishments where beer was not sold, the average number of clerks present was 1.35 ( $SD=.71$ ). There was not a statistically significant relationship between the number of clerks present in the establishment and whether or not a sale was made,  $r_s=.07, p > .05$ .

The number of customers present in line behind the buyer in the establishment at the time of the purchase attempt was examined to determine if there was a relationship between the number of customers present and whether or not beer was sold. The average number of customers present when a sale was not made was 1.00 ( $SD=2.51$ ); the average number of customers present when a sale was made was 1.10 ( $SD=2.30$ ). There was not a statistically significant relationship between the number of customers present in the

establishment and whether or not a sale was made,  $r_s=.01, p > .05$ .

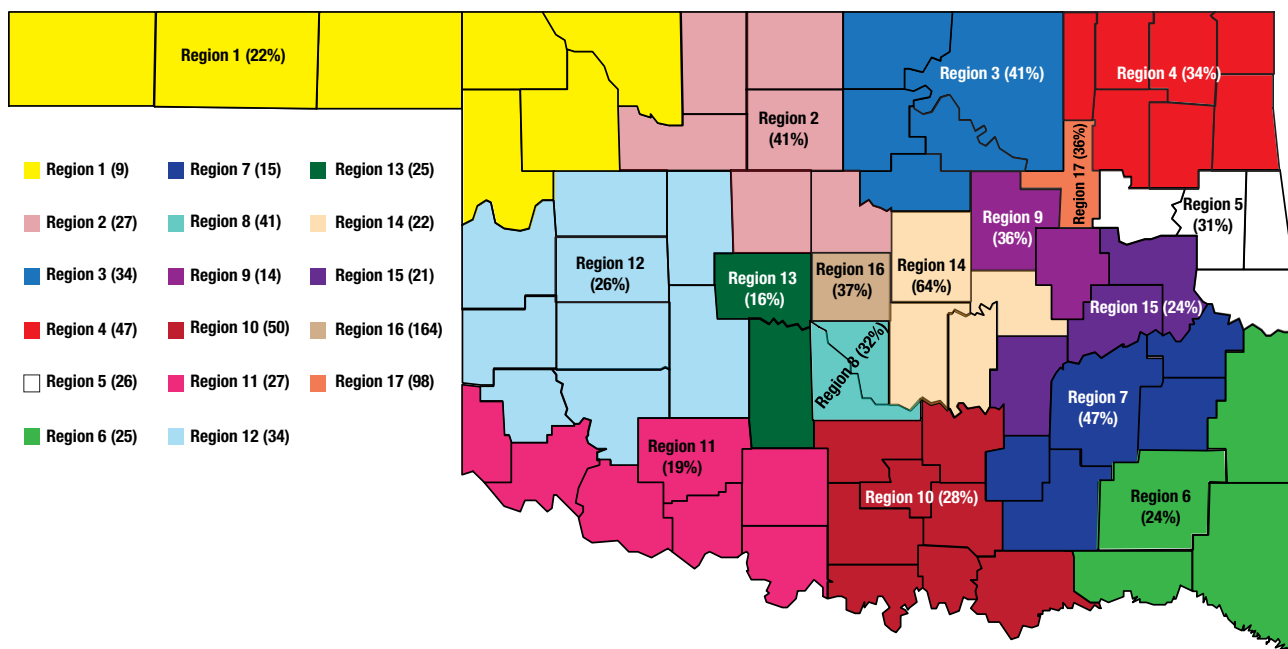
The buyers estimated the age of the clerk with whom they interacted in each establishment. The estimated ages of the clerks were examined to determine if there was a relationship between the clerk's age and whether or not the sale was successful. The average age of the clerk when beer was not sold was 39.00 ( $SD=14.92$ ). When beer was sold, the average age of the clerk was 35.48 ( $SD=14.81$ ). There was a significant relationship between the clerk's age and whether or not the sale was successful, with younger clerks selling beer to underage youth more often than older clerks,  $r_s=.13, p < .01$ . Clerks in on-premise establishments were significantly younger ( $M=31.21, SD=9.82$ ) than clerks in off-premise locations ( $M=39.93, SD=15.70$ ),  $r_s=.23, p < .001$ . Clerks in retail package stores were significantly older ( $M=44.06, SD=15.37$ ) than clerks in other types of locations ( $M=34.36,$

Figure 5. Average Age of the Clerk When Beer was Sold/Not Sold



<sup>10</sup> Clerks who did not ask for proof of age had a mean age of 34.75 ( $SD=14.47$ ), while those who did ask for proof of age had a mean age of 38.55 ( $SD=15.00$ ).

Figure 6. Number of Purchase Attempts and Percent of Purchase Attempts where Sale was Made by Region



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$SD=13.56$ ),  $r_s=.31$ ,  $p < .001$ . Further, younger clerks were significantly less likely to ask for proof of age<sup>10</sup> than older clerks,  $r_s=.11$ ,  $p < .01$ .

The gender of the clerks that buyers interacted with in each establishment was analyzed to determine if there was a relationship between the clerks' gender and whether or not they sold beer to underage youth. Though there were more female clerks (63%) in the sample, both males and females sold alcohol to underage youth about the same percent of the time (males=33%, females=34%). There was not a significant difference between the number of sales made and the gender of the clerk,  $\chi^2(1) = .148$ ,  $p > .05$ ,  $V=.02$ .

The majority of the purchase attempts were made from a clerk whose ethnicity was Caucasian (74%), according to the buyer. Clerks who were Hispanic were most likely to sell beer to underage youth (49%), followed by Caucasian clerks (35%), though there was not a significant difference between the number of sales made and the ethnicity of the clerk,  $\chi^2(5) = 10.62$ ,  $p > .05$ ,  $V=.13$ .

Regional and Statewide Outcomes

Regional rates of sales varied from 16% to 64% (see Table 4 and Figure 6). Region 14 had the highest percentage of sales (64%), followed by region 7 (47%). There was not a significant difference between the percentage of sales between the regions,  $\chi^2(16) = 22.74$ ,  $p > .05$ ,  $V=.18$ .

The regional sales rates were scale weighted to estimate the number of sales by region if purchase attempts were made at every establishment in the state (see Table 5). An estimated 2,440 sales would have been made if the entire population of establishments were surveyed.

The rate of sales for all purchase attempts made statewide was 33.6%, 95% CI [30.0%, 37.2%]. The rate of sales for retail package stores was slightly higher at 35.4%, 95% CI [30.4%, 40.4%]. The rate for all other types of establishments was lower than that of the retail package stores and the overall rate, at 32.6%, 95% CI [28.1%, 37.1%]. There was not a statistically significant difference between the rate of sales at retail package stores compared to all other establishment types,  $\chi^2(1) = .55$ ,  $p > .05$ ,  $V=.03$ .

Table 4. Purchase Attempts By Region and Outcome

| Region | Number of Total Attempts | Percent of Total Attempts | Percent of Attempts where Sale was Made |
|--------|--------------------------|---------------------------|-----------------------------------------|
| 1      | 9                        | 1%                        | 22%                                     |
| 2      | 27                       | 4%                        | 41%                                     |
| 3      | 34                       | 5%                        | 41%                                     |
| 4      | 47                       | 7%                        | 34%                                     |
| 5      | 26                       | 4%                        | 31%                                     |
| 6      | 25                       | 4%                        | 24%                                     |
| 7      | 15                       | 2%                        | 47%                                     |
| 8      | 41                       | 6%                        | 32%                                     |
| 9      | 14                       | 2%                        | 36%                                     |
| 10     | 50                       | 7%                        | 28%                                     |
| 11     | 27                       | 4%                        | 19%                                     |
| 12     | 34                       | 5%                        | 26%                                     |
| 13     | 25                       | 4%                        | 16%                                     |
| 14     | 22                       | 3%                        | 64%                                     |
| 15     | 21                       | 3%                        | 24%                                     |
| 16     | 164                      | 24%                       | 37%                                     |
| 17     | 98                       | 14%                       | 36%                                     |

Table 5. Purchase Attempts By Region and Outcome, Scale Weighted

| Region | N     | Sold (Actual) | Sold (Scale Weighted) |
|--------|-------|---------------|-----------------------|
| 1      | 188   | 2             | 42                    |
| 2      | 278   | 11            | 113                   |
| 3      | 343   | 14            | 141                   |
| 4      | 442   | 16            | 150                   |
| 5      | 253   | 8             | 78                    |
| 6      | 258   | 6             | 62                    |
| 7      | 178   | 7             | 83                    |
| 8      | 408   | 13            | 129                   |
| 9      | 175   | 5             | 63                    |
| 10     | 479   | 14            | 134                   |
| 11     | 395   | 5             | 73                    |
| 12     | 346   | 9             | 92                    |
| 13     | 202   | 4             | 32                    |
| 14     | 231   | 14            | 147                   |
| 15     | 231   | 5             | 55                    |
| 16     | 1711  | 60            | 626                   |
| 17     | 1173  | 35            | 419                   |
| Total  | 7,291 | 228           | 2,440                 |



# CONCLUSIONS & RECOMMENDATIONS

This study used data from 679 alcohol purchase surveys conducted at on-premise and off-premise establishments throughout the state of Oklahoma to identify factors and characteristics that may be related to whether or not beer is sold to underage youth. The rate of sales for the state was 34% and ranged between 16% and 64% for the regions.

Several factors and characteristics emerged as having a statistically significant relationship with beer being sold to underage youth. Two buyers were sold to more often than the others. It could be that those two buyers appeared older than they were. The average estimated age in the perception screening for those buyers was higher (19.7 and 19.5) than for the other two buyers (18.4 and 18.9), which supports this assumption.

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On-premise establishments were more likely to sell beer to underage youth than off-premise establishments. Restaurants, bars/clubs, convenience stores that do not sell gasoline, and retail package stores were more likely to sell than other types of establishments. However, when comparing the rate of sales for retail package stores to all other types of stores, the sales in retail package stores were no longer significantly higher.

Establishments with alcohol stored in locked cases or enclosed areas were more likely to sell beer to underage youth than establishments without alcohol stored in locked cases or enclosed areas (e.g., behind counters in retail package stores or behind bars). However, on-premise locations were more likely to have alcohol stored in locked cases or enclosed areas and had a higher rate of sales. This could mean that the location of the alcohol in the establishment is not the factor that is most closely tied to the propensity to sell beer to underage youth; rather, it may be the type of establishment – on-premise – that is linked with the rate of sales.

Clerks were more likely to sell beer to underage youth when they did not ask for proof of age, and clerks in on-premise locations were less likely to ask for proof of age than those in off-premise locations. Additionally, younger clerks were more likely to sell and clerks in on-premise locations were younger than clerks in off-premise locations. Younger clerks were also significantly less

likely to ask for proof of age.

These results appear to indicate that younger clerks are less likely to ask for proof of age and are more likely to work in on-premise locations such as bars/clubs and restaurants. These types of locations are more likely to sell alcohol to underage youth and have alcohol located in locked cases or enclosed areas. These locations are also less likely to have signage present. Though the relationship between the presence of signage and the outcome of the purchase attempt was not significantly related, one could hypothesize that establishments that do not have signage related to underage drinking or sales are less likely to emphasize the importance of requesting proof of identification and are more likely to employ younger clerks, leading to more sales of beer to underage youth. This hypothesis could be investigated through further research.

It may be beneficial for law enforcement officials and the ODMH-SAS staff working with Regional Prevention Coordinators to focus on on-premise establishments, such as bars/clubs and restaurants,

in their efforts to reduce beer sales to underage youth. Encouraging employees of these establishments to display signage warning against underage drinking and sales, and training staff to ask for proof of age, may help to decrease the rate of sales.

There were some limitations to the study that could affect the generalizability of the results. The buyers were all female; had there been male buyers, the results may have been different. Additionally, the buyers only attempted to purchase beer, rather than other types of liquor, which limits the generalizability of these results. Further, the protocol instructed the buyers not to carry cash or other source of payment. Had the buyers been able to offer payment to complete the sale, results could have been different, as some establishments ask for identification upon receipt of a means of payment. Further research with variations on the type of alcohol purchased, buyer characteristics, and protocol could provide more information concerning the sales of alcohol to underage youth in Oklahoma.



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# APPENDIX A

## Beer Purchase Survey

### TO BE FILLED OUT BY ABLE AGENT:

#### Location Information

Name: \_\_\_\_\_ District: \_\_\_\_\_

Address: \_\_\_\_\_ City: \_\_\_\_\_

Type of business:

- |                                                          |                                             |
|----------------------------------------------------------|---------------------------------------------|
| <input type="checkbox"/> Bar/Club                        | <input type="checkbox"/> Liquor Store       |
| <input type="checkbox"/> Bowling Alley                   | <input type="checkbox"/> Restaurant         |
| <input type="checkbox"/> Convenience Store (with gas)    | <input type="checkbox"/> Supermarket        |
| <input type="checkbox"/> Convenience Store (without gas) | <input type="checkbox"/> Small Grocery/Deli |
| <input type="checkbox"/> Drugstore/Pharmacy              | <input type="checkbox"/> Other: _____       |

Location of alcohol in the establishment (check all that apply):

- |                                                               |                                                                                |
|---------------------------------------------------------------|--------------------------------------------------------------------------------|
| <input type="checkbox"/> Checkout counter                     | <input type="checkbox"/> Locked cases or enclosed area (behind counter or bar) |
| <input type="checkbox"/> Open shelves or racks (self-service) | <input type="checkbox"/> Other: _____                                          |
| <input type="checkbox"/> Cooler or refrigerated area          |                                                                                |

Were signs present related to underage drinking or sales?  Yes  No

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#### Buyer Information

Buyer's ID#: \_\_\_\_\_ ABLE Agent's Name: \_\_\_\_\_

#### Purchase Attempt

Was a purchase attempt made?  Yes  No

If no purchase attempt was made, please indicate the reason the attempt was not made:

- |                                                                 |                                                               |
|-----------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Out of business                        | <input type="checkbox"/> Private business/Membership required |
| <input type="checkbox"/> Unsafe location                        | <input type="checkbox"/> Unable to locate business            |
| <input type="checkbox"/> Business does not sell beer            | <input type="checkbox"/> Location was inaccessible            |
| <input type="checkbox"/> Buyer knew staff member(s) at location | <input type="checkbox"/> Other: _____                         |
| <input type="checkbox"/> Buyer denied entrance                  |                                                               |

If a purchase attempt was made, please provide the following information:

Date of attempt: \_\_\_\_\_ Day of attempt: \_\_\_\_\_ Time of attempt: \_\_\_\_\_  a.m.  p.m.

#### Outcome of Purchase Attempt

Number of clerks at the location (behind counter or bar) at the time of the purchase attempt: \_\_\_\_\_

What was the outcome?  Sale was made  Sale was not made

Number of customers in line behind buyer at time of purchase attempt: \_\_\_\_\_

Agent's Initials \_\_\_\_\_ Mileage Start: \_\_\_\_\_ Mileage End: \_\_\_\_\_

**TO BE FILLED OUT BY BUYER:**

**Clerk's Information**

Approximate age: \_\_\_\_\_

Gender:     Male     Female     Unknown

Race/ethnicity:

- Caucasian/White
- African-American/Black
- Native American

- Hispanic
- Asian
- Unknown

**Purchase Attempt**

Did the clerk ask the buyer's age?     Yes     No

Did the clerk ask for identification?     Yes     No

**Buyer's Initials** \_\_\_\_\_

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# APPENDIX B

## Alcohol Purchase Survey Protocol

The purpose of the Alcohol Purchase Survey is to obtain a statewide rate for sales of low-point beer to minors. Purchases will be made at on-site and off-site locations by adults between the ages of 18 and 20 with an accompanying Alcoholic Beverage Laws Enforcement (ABLE) Commission agent who will present a Notice of Warning to the locations where successful purchase attempts are made. As a sub-study, the minors will also attempt to purchase high-point beer at retail package stores. ABLE agents will present a Notice of Warning to retail package stores where successful purchase attempts are made. Comparisons will be made between rate of sales between low-point beer stores and retail package stores.

### Buyer-related information:

An attempt should be made at selecting a buyer whose ethnicity, gender, and dress best “fits” the neighborhood(s) in which the purchase attempts are made.

Buyers should be selected for attempts made in areas in which they are not known.

An attempt should be made to select buyers for purchase attempts with equal frequency.

Buyers should be 18, 19, or 20 years old and appear to be 18-20 years old as determined by age perception testing.

Buyers should dress as they normally would in a casual setting and should not dress in ways that would make them appear older (e.g., suits, formal attire).

Buyers should wear minimal makeup.

Buyers should not drastically alter their appearance on the day of the purchase attempts from their appearance on the day of the age perception testing.

Prior to attempting purchases, buyers will be photographed by the ABLE agent assigned to the surveyor (once on each day). Photos will be labeled with the photographer's initials, date and time taken.

### Age perception testing:

Potential buyers should be taken to a public location (e.g., Walmart, Shepherd Mall) where 10 random people will be asked to estimate the age of each buyer. The same 10 people should rate all potential buyers, if possible.

The raters should not be associated with this study in any way.

To be considered for hire and participation in this study, the average estimated age of each potential buyer will be 18, 19, or 20 years.

A photo should be taken of each potential buyer at the time of the age perception testing and kept on record by the OU E-Team and the ODMHSAS.

### Purchase attempts:

Purchase attempts may be made at any time, though it's preferable for attempts to be made in the evenings and on weekends.

Purchase attempts should only be made at the locations on the list provided by E-TEAM. If a location is closed, does not sell beer, is unsafe, or if a purchase cannot be attempted for any other reason, the reason should be noted on the survey form and substitutions should not be made.

The ABLE agent overseeing the purchase attempt should drive the buyer to each of the locations in an unmarked vehicle.

Agents should park the vehicle where it is not visible to the interior of the location, if possible. Every effort should be made to ensure that the staff at the location will not see the buyer and agent together.

The agent should enter the location first. If the agent does not consider the location safe, he/she should exit the location and an attempt should not be made to purchase. If the agent does not exit the location within a few minutes, the buyer should assume the location is safe to enter and a purchase attempt should be made.

The buyer should carry his or her state-issued valid ID and cash only. No wallets, purses, or other items should be carried into the locations.

Except for the Notice of Warning, which will not be visible during the purchase attempt, the survey form and all other items related to the study should remain in the vehicle during the attempts.

If, upon entering the location, the buyer recognizes someone they know in the location, they should not attempt the purchase. The reason for the abandoned attempt should be recorded on the survey form.

The buyer should not attempt to purchase any items (e.g., magazines, gum, candy) other than the product as directed by this protocol.

During the attempt, if the buyer is asked his or her age, he/she should answer honestly. If the buyer is asked to show identification, the buyer should show his/her state-issued ID.

The buyer should do nothing to entice a sale or encourage the staff to make a sale.

If at any time prior to the purchase the buyer is asked to leave the location, the buyer will leave the location and abandon the purchase attempt.

Once back in the vehicle and at a safe location, the agent and buyer should fill out their appropriate sections of the survey form before proceeding to the next location.

**Off-premise locations:**

The buyer should enter the location and select a refrigerated six-pack of Bud Light and take it to the counter for purchase. If Bud Light is not available, the buyer should select a six-pack of Coors Light. If at all possible, buyers should purchase refrigerated products. The buyer should take the product to the cashier and allow the item to be rung up on the register. (Money may be held in hand as though paying for the product but, for this study, it is not necessary to actually pay for the product.) Once the cashier has rung up the item and has told the buyer the amount due, the buyer should leave the location and get in the vehicle, locking the doors. The agent will remain in the location throughout the attempted purchase. Once the buyer leaves, the agent will

step up to the counter, explain the reason for the purchase to the staff member, and provide the Notice of Warning explaining the study.

**On-premise locations:**

The agent will remain in the location during the purchase attempt and remain in a position to observe the buyer. The buyer will enter the location and be seated at the bar if one is present. If a cover charge is required to gain entry to the location, the buyer should pay the cover charge and provide identification if asked. If the location does not contain a bar, the buyer will be seated at a table. The buyer should order a bottle of Bud Light from the bartender or server. If Bud Light is not available, the buyer should order a bottle of Coors Light. Once the beer is served, the buyer should touch the bottle containing the beer and exit the location. When the buyer is leaving the location, the agent should hand the keys to the vehicle to the buyer. The buyer should get in the vehicle and lock the doors. The agent will approach a staff member, explain the reason for the purchase, provide the Notice of Warning explaining the study, and retrieve any money paid for cover charges.

**Liquor stores:**

The buyer should enter the location and select a six-pack of Bud Light Platinum and take it to the counter for purchase. If Bud Light Platinum is not available, the buyer should select a six-pack of Corona. The buyer should take the product to the cashier and allow the item to be rung up on the register. (Money may be held in hand as though paying for the product but, for this study, it is not necessary to actually pay for the product.) Once the cashier has rung up the item and has told the buyer the amount due, the buyer should leave the location and get in the vehicle, locking the doors. The agent will remain in the location throughout the attempted purchase. Once the buyer leaves, the agent will step up to the counter, explain the reason for the purchase to the staff member and provide the Notice of Warning explaining the study.





# APPENDIX C

## *Location of Alcohol in the Establishment by Type of Business*

| Location of Alcohol in Establishment                  | Bar/Club | Convenience         | Convenience            | Drugstore/<br>Pharmacy | Retail Package | Other | Restaurant | Supermarket/<br>Small | Total |
|-------------------------------------------------------|----------|---------------------|------------------------|------------------------|----------------|-------|------------|-----------------------|-------|
|                                                       |          | Store<br>(with gas) | Store<br>(without gas) |                        | Store          |       |            | Grocery/Deli          |       |
| Checkout counter                                      | 1        | 6                   | 1                      | 0                      | 15             | 0     | 1          | 0                     | 24    |
| Cooler or refrigerated area                           | 10       | 185                 | 17                     | 16                     | 3              | 5     | 58         | 37                    | 331   |
| Locked cases or enclosed area (behind counter or bar) | 28       | 0                   | 0                      | 0                      | 2              | 2     | 69         | 0                     | 101   |
| Open shelves or racks (self-service)                  | 3        | 47                  | 7                      | 2                      | 238            | 1     | 7          | 17                    | 322   |

Note. Categories are not mutually exclusive; alcohol may be located in more than one area in an establishment. Location of alcohol was not indicated on six surveys.

## *Purchase Attempts by Day of the Week and Outcome*

| Day of the Week | Number of Total Attempts | Percent of Total Attempts | Percent of Attempts where Sale was Made |
|-----------------|--------------------------|---------------------------|-----------------------------------------|
| Sunday          | 21                       | 3%                        | 24%                                     |
| Monday          | 81                       | 12%                       | 26%                                     |
| Tuesday         | 130                      | 19%                       | 32%                                     |
| Wednesday       | 93                       | 14%                       | 42%                                     |
| Thursday        | 158                      | 23%                       | 30%                                     |
| Friday          | 57                       | 8%                        | 37%                                     |
| Saturday        | 139                      | 20%                       | 38%                                     |

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## *Purchase Attempts by Type of Business and Outcome*

| Type of Business                | Number of Total Attempts | Percent of Total Attempts | Percent of Attempts where Sale was Made |
|---------------------------------|--------------------------|---------------------------|-----------------------------------------|
| Bar/Club                        | 37                       | 5%                        | 49%                                     |
| Convenience Store (with gas)    | 192                      | 28%                       | 27%                                     |
| Convenience Store (without gas) | 19                       | 3%                        | 42%                                     |
| Drugstore/Pharmacy              | 16                       | 2%                        | 0%                                      |
| Other                           | 5                        | 1%                        | 0%                                      |
| Restaurant                      | 124                      | 18%                       | 44%                                     |
| Retail Package Store            | 243                      | 36%                       | 35%                                     |
| Supermarket/Small Grocery/Deli  | 43                       | 6%                        | 26%                                     |

**Purchase Attempts by Location of Alcohol in Establishment and Outcome**

| Location of Alcohol in Establishment                  | Number of Total Attempts | Percent of Total Attempts | Percent of Attempts where Sale was Made |
|-------------------------------------------------------|--------------------------|---------------------------|-----------------------------------------|
| Checkout counter                                      | 24                       | 4%                        | 21%                                     |
| Cooler or refrigerated area                           | 331                      | 49%                       | 31%                                     |
| Locked cases or enclosed area (behind counter or bar) | 101                      | 15%                       | 44%                                     |
| Open shelves or racks (self-service)                  | 322                      | 47%                       | 33%                                     |

Note. Numbers will not add up to 100% because alcohol can be located in more than one area in an establishment.

**Purchase Attempts by Buyer and Outcome**

| Buyer | Number of Total Attempts | Percent of Total Attempts | Percent of Attempts where Sale was Made |
|-------|--------------------------|---------------------------|-----------------------------------------|
| 1     | 128                      | 19%                       | 30%                                     |
| 2     | 275                      | 41%                       | 36%                                     |
| 3     | 122                      | 18%                       | 42%                                     |
| 4     | 154                      | 23%                       | 25%                                     |

**26****Number of Purchase Attempts by Type of Establishment and Region**

| District | Bar/Club | Convenience Store (with gas) | Convenience Store (without gas) | Drugstore/Pharmacy | Retail Package Store | Other | Restaurant | Supermarket/Small Grocery/Deli | Total |
|----------|----------|------------------------------|---------------------------------|--------------------|----------------------|-------|------------|--------------------------------|-------|
| 1        | 0        | 4                            | 0                               | 0                  | 3                    | 0     | 1          | 1                              | 9     |
| 2        | 1        | 7                            | 1                               | 0                  | 11                   | 1     | 5          | 1                              | 27    |
| 3        | 5        | 7                            | 1                               | 1                  | 14                   | 0     | 4          | 2                              | 34    |
| 4        | 2        | 18                           | 2                               | 1                  | 15                   | 0     | 7          | 2                              | 47    |
| 5        | 0        | 8                            | 0                               | 0                  | 12                   | 0     | 3          | 3                              | 26    |
| 6        | 0        | 12                           | 1                               | 0                  | 10                   | 0     | 1          | 1                              | 25    |
| 7        | 0        | 7                            | 0                               | 0                  | 5                    | 0     | 2          | 1                              | 15    |
| 8        | 1        | 12                           | 1                               | 0                  | 15                   | 0     | 8          | 4                              | 41    |
| 9        | 0        | 5                            | 0                               | 0                  | 5                    | 0     | 1          | 3                              | 14    |
| 10       | 2        | 20                           | 3                               | 0                  | 17                   | 0     | 7          | 1                              | 50    |
| 11       | 0        | 7                            | 2                               | 1                  | 9                    | 2     | 6          | 0                              | 27    |
| 12       | 3        | 14                           | 1                               | 0                  | 13                   | 0     | 1          | 2                              | 34    |
| 13       | 0        | 8                            | 0                               | 0                  | 12                   | 0     | 5          | 0                              | 25    |
| 14       | 0        | 8                            | 1                               | 0                  | 8                    | 0     | 5          | 0                              | 22    |
| 15       | 1        | 5                            | 0                               | 0                  | 7                    | 2     | 4          | 2                              | 21    |
| 16       | 15       | 30                           | 6                               | 9                  | 55                   | 0     | 39         | 10                             | 164   |
| 17       | 7        | 20                           | 0                               | 4                  | 32                   | 0     | 25         | 10                             | 98    |
| Total    | 37       | 192                          | 19                              | 16                 | 243                  | 5     | 124        | 43                             | 679   |





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