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The Data Is In: Alcohol Delivery and Consumption During COVID-19

By C. Jarrett Dieterle



By analyzing specific state-level alcohol delivery rules and comparing them to alcohol consumption rates, one can gain a clearer picture of the role COVID-19 alcohol delivery rules had on drinking levels.

Introduction

The vast overhaul in alcohol delivery rules during COVID-19 has forever altered the drinks landscape in America. In March 2020, no state had a law on its books allowing restaurants to serve cocktails in a to-go or delivery capacity, and a significant number of states likewise restricted alcohol delivery even from off-premise outlets like grocery stores. By the fall of 2022, however, 38 states had passed versions of to-go or delivery alcohol laws for restaurants, and 43 states permitted at least some type of delivery from off-premise stores.¹

This shift in how alcohol could be sold and placed in the hands of consumers was a welcome development for struggling small businesses during the pandemic. The economic benefits to restaurants and alcohol stores are well documented, with many of these business owners citing new to-go and delivery privileges as one of the keys to staying afloat and re-hiring employees during a time of stay-at-home orders and mandated on-premise closures.²

Despite these benefits, not everyone has welcomed the spread of alcohol delivery. Opponents to these changes cite concerns over potential negative externalities from alcohol, such as drunk driving, underage drinking or an increase in overall drinking rates.³ While the misuse of alcohol can certainly result in negative externalities, there is a dearth of empirical data demonstrating that alcohol delivery itself has led to an increase in any of these cited outcomes.

For instance, an analysis of to-go and delivery rules for alcohol in various states during the pandemic shows that there was no discernible correlation between these reforms and drunk driving deaths.⁴ Empirical data from long-existing forms of alcohol delivery, such as direct-to-consumer wine shipping, likewise show no correlation with underage drinking.⁵

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One of the most predominant concerns centers on the noticeable increase in alcohol consumption during COVID-19 and whether that can be attributed in any way to alcohol delivery rules. As policymakers in more locales continue to consider changes to alcohol laws, it is important that they do so with an eye toward empirical data rather than supposition or anecdotes. This paper seeks to explore the relationship between alcohol delivery and alcohol consumption in an effort to provide such data.

The Current Debate

Some of the more common news headlines during COVID-19 pertained to the noted increase in drinking during the pandemic.⁶ Alcohol sales—particularly in the first few months of the pandemic—noticeably increased, and surveys of Americans showed an uptick in overall drinking.⁷

Many of these articles and surveys cited causes such as increased isolation, mental health issues exacerbated by loneliness or enhanced stress from altered living patterns. Some studies tracked drinking over nine months of the pandemic and pointed to "social stressors" like loneliness and greater demands as being most relevant to alcohol use.

Some pieces, however, went a step further to suggest a potential link between the increase in alcohol consumption and the simultaneous trend toward states allowing more types of alcohol delivery.

A *Washington Post* headline from December of 2021 illustrates this genre of article: "States rushed to loosen alcohol laws in the pandemic. Heavy drinking went up, some studies say." The piece itself discussed both the liberalization of alcohol delivery rules as well as studies showing increased drinking early in the pandemic, thereby providing at least some support for each of the two discrete sentences of the article's headline. What was lacking, however, was empirical evidence of any demonstrable link between these two trends of more delivery and more drinking.

In April 2022, an attempt to show such a link was published in the form of an online survey.¹² The researchers surveyed just under 1,000 participants, asking respondents numerous questions about their alcohol consumption during the pandemic, including whether their drinking increased and whether they had had alcohol delivered to their homes.¹³

Although only 21 percent of respondents reported using online delivery to purchase at least some alcohol in the prior 30 days (compared to around 70 percent who reported purchasing it in-person or already having some alcohol in their homes), the researchers found that those who ordered alcohol for delivery reported consuming more drinks and drinking on more days than those who did not.¹⁴ Those who had alcohol delivered also reported higher binge drinking rates (defined as 4-5 drinks per day, depending on one's gender) than those who did not.¹⁵

This research adduced more data than previous efforts, but it nonetheless suffered from several shortcomings that limit reliance on its findings—shortcomings that the authors themselves discuss within the paper.



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First, the research relied on an online sample of respondents. Not only was the survey wholly administered online, but its participants were "recruited from across the U.S. in May 2020 through social media posts and emails sent via group listservs." In other words, those who chose to participate in the survey were individuals who frequented social media or email listservs and were therefore presumably more likely to be presented with the opportunity for online delivery than less-online respondents.

Second, the survey included only one question related to where the respondents accessed alcohol—via delivery, in-person, or already in the home—and participants could select more than one answer to this question.¹⁷

Third, and perhaps most critically, the study did not track how respondents obtained their alcohol *prior to* the pandemic or how their pre-pandemic consumption levels compared to their pandemic consumption levels.¹⁸

This is important because it is possible—and perhaps even likely—that alcohol delivery merely acted as a substitution effect for many individuals. That is, respondents who received delivery alcohol were drinking the same amount, just shifting how they accessed their drinks. The fact that these respondents drank more than others may likewise be irrelevant because they may have also consumed more alcohol before the pandemic. Put another way, those who already drank more may have been more inclined to have alcohol delivered, rather than suddenly drinking more *because of* alcohol delivery.

To show a true link at the individual level between alcohol delivery and increased drinking, one would need to show that individuals who ordinarily would have foregone an alcoholic beverage (or two or three) instead decided to consume alcohol on account of it suddenly being available via delivery.

Again, the study's authors explicitly acknowledge this limitation:

[I]t is important to consider that the closure of licensed premises may have resulted in a shift in where participants consumed alcohol, rather than necessarily an increase in consumption. We do not know whether the participants who had previously engaged in binge drinking in bars all shifted to home delivery when the bars closed... [T]he cross-sectional design of this study means we cannot tell whether the association between people who get alcohol delivered and the level of consumption has changed since the onset of alcohol home delivery.¹⁹

Despite these caveats, it did not stop news articles from citing the study and declaring: "[S]ome researchers say looser laws also contributed to a rise in binge drinking and overall consumption, with all the attendant health harms."²⁰

A final limitation acknowledged by the authors is that the survey did not record the geographic location of where survey participants lived.²¹ This is relevant because, as the authors note, "differences in state and local laws regarding alcohol sales and delivery may influence participants' choices on how to obtain alcohol and their overall alcohol consumption."²²

The importance of this should not be overlooked because it hits on a key point: Not all states changed their alcohol delivery rules during COVID-19. As noted above,

Survey 1
Shortcoming

Survey 2 Shortcoming

Survey 3
Shortcoming

Survey 4
Shortcoming



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some states allowed certain types of alcohol delivery from off-premise outlets *before* COVID-19, whereas other states did not change their laws at all during the pandemic and continued to restrict alcohol delivery.

Consider, for instance, a survey respondent in a state that allowed grocery stores to deliver alcohol starting in 2017 but never had beverages delivered to their home. Then, suddenly, in April 2020, they decided to have 2 bottles of wine included in their delivery grocery order. At the same time, due to increased social isolation and stress, they consumed an extra glass of Merlot for a few weeks during the early months of social distancing.

This person's use of alcohol delivery and their consumption levels are not related to suddenly gaining a new avenue for accessing alcohol—after all, there's been no change in the legal status of delivery in their state—but they nonetheless could be flagged as a drinker who both used alcohol delivery and was drinking more. This could then be misconstrued, leading some to believe that alcohol delivery *led* to increased drinking.

The noted disparity in state alcohol delivery laws can actually point the way toward constructing a fuller empirical picture of whether alcohol delivery has any correlation with increased drinking rates. Instead of relying on a thousand-person survey of highly online individuals who may merely be substituting home delivery for brick-and-mortar drink purchases, one can analyze whether states with more liberalized alcohol delivery rules showed a greater increase in drinking rates in their populace than those with more restrictive delivery rules during the pandemic.

This takes the empirical question out of the realm of limited online samples and puts it into the hands of a nationwide analysis of state drinking laws and overall alcohol consumption rates.

Alcohol Delivery and Alcohol Consumption

To construct a fuller empirical picture, we categorized states by whether they allowed alcohol delivery or not during the pandemic. We analyzed both delivery from onpremise and off-premise outlets. On-premise delivery constitutes delivery from businesses like restaurants and bars, whereas off-premise delivery involves delivery from grocery stores and other alcohol retail stores.

Because the most recent year in which overall alcohol consumption data is available is 2020, we categorized states based on their rules governing alcohol delivery in 2020, the first year of the pandemic.²³ To be denoted as a "yes" or "partial"—i.e., the state allowed some form of alcohol delivery—we determined that the state must have permitted either off-premise or on-premise delivery for *at least five months* from April 2020 to December 2020.

These delivery privileges could come in several forms, either a statewide emergency order that authorized alcohol delivery or a legislative act passed through a state legislature. We categorized the states using a multitude of sources that attempted to track alcohol delivery rules during the pandemic (see Table 1).



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Table 1: Alcohol Delivery Rules During the Pandemic

States	On-Prem Delivery Pre-COVID	On-Prem Delivery During COVID	Off-Prem Pre-COVID	Off-Prem Delivery During COVID	2019-2020 Drinking Difference (Per Capita Gallons of Ethanol):	
					21 and Older	14 and Older
labama	No	No	No	No	0.0958	0.0876
laska	No	Partial (no mixed drinks)	Yes	Yes	-0.0513	-0.0438
rizona	No	Yes	Yes	Yes	-0.0019	0.0015
rkansas	No	Partial (no mixed drinks)	No	Yes (only via EO in 2020)	0.1295	0.1156
alifornia	No	Yes	Yes	Yes	0.0777	0.0706
olorado	No	Yes	Partial (employees only)	Partial (employees only)	0.2031	0.1841
Connecticut	No	Yes	Yes	Yes	0.0322	0.0325
elaware	No	No	No	No	0.6413	0.5783
).C.	No	Yes	Yes	Yes	0.0372	0.0354
lorida	No	Yes	Yes	Yes	0.0328	0.0319
Georgia	No	Partial (no mixed drinks)*	No	Yes#	0.0001	0.0014
lawaii	No	Yes	Partial (employees only in some localities)	Partial (employees only in some localities)	0.0302	0.0295
daho	No	Partial (no mixed drinks)	Yes	Yes	0.0592	0.0554
llinois	No	Yes	Yes	Yes	0.0135	0.0136
ndiana	No	Partial (no mixed drinks)	Partial (employees only)	Partial (employees only)	0.1534	0.1377
owa	No	Yes	Partial (employees only)	Partial (employees only)	0.1296	0.1146
ansas	No	No	No	No	0.1594	0.1412
entucky	No	Yes	Yes	Yes	0.1163	0.1048
ouisiana	No	Partial (no mixed drinks)	Partial (employees only)	Yes##	0.0253	0.0234
/aine	No	Yes	Yes	Yes	0.1041	0.0975
Naryland	No	Yes	Yes	Partial (employees only in some localities)	0.1352	0.1219
1assachusetts	No	Yes**	Yes	Yes	0.0590	0.0563
1ichigan	No	Yes	Yes	Yes	0.1623	0.1484
/linnesota	No	No	Yes	Yes	0.0745	0.0666
/lississippi	No	No	No	No	0.2010	0.1784
/lissouri	No	Yes	Yes	Yes	0.1328	0.1195
Montana	No	Yes	No	Partial (employees only via EO in 2020)	0.1904	0.1723
Nebraska	No	Yes	Yes	Yes	-0.0031	-0.0032
levada	No	Partial (not statewide, but some localities allow)	No	Partial (not statewide, but some localities allow)	0.0107	0.0120
lew Hampshire	No	Partial (no mixed drinks)	Partial (employees only)	Partial (employees only)	0.0765	0.0780
lew Jersey	No	Yes	Yes	Yes	0.2645	0.2387
lew Mexico	No	No	No	No	0.0438	0.0409
lew York	No	Yes	Yes	Yes	-0.0067	-0.0041
Iorth Carolina	No	Partial (no mixed drinks)	Yes	Yes	0.1249	0.1132
lorth Dakota	No	Partial (not statewide but some localities allow)	No	No	0.09	0.0758
hio	No	Yes	Yes	Yes	0.0796	0.0733
oklahoma	No	Partial (no mixed drinks)	No	Partial (employees only)	0.0062	0.0062
Dregon	No	Partial (no mixed drinks)	Yes	Yes	-0.0095	-0.0061
Pennsylvania	No	Partial (no mixed drinks unless selling at 60% capacity)	Partial###	Partial###	-0.0767	-0.0671
thode Island	No	No	Partial (employees only)	Partial (employees only)	0.1363	0.1255
outh Carolina	No	No	No	No	-0.0258	-0.0219
outh Dakota	No	No	No	No####	-0.0174	-0.0162
ennessee	No	Yes	Yes	Yes	0.1279	0.1165
exas	No	Yes	Yes	Yes	0.1492	0.1325
Itah	No	No	No	No	0.0321	0.0286
ermont	No	Yes	Partial (employees only)	Partial (employees only)	0.1165	0.1088
'irginia	No	Yes	Yes	Yes	0.1285	0.1155
Vashington	No	Yes	Yes	Yes	0.0333	0.0321
Vest Virginia	No	Partial (no mixed drinks)	No	No	0.0333	0.0636
vest virgillia Visconsin	No	No	No	No	0.0702	0.1615
Vyoming	No	No	Partial (not statewide, but some localities allow)	Partial (not statewide, but some localities allow)	0.1788	0.1615

Sources: See Page 8.

Legend: *

- * Georgia allowed beer/wine delivery from on-premise establishments starting 8/3/20
- ** Massachusetts only allowed beer/wine until law expanded to mixed drinks on 7/20/20
- # Georgia allowed beer/wine delivery from off-premise establishments starting 8/3/20
- ## Louisiana expanded to third-party delivery in June 2020 law
- ### Pennsylvania's law is structured so that it makes delivery impractical for many businesses
- #### South Dakota has an off-sale delivery license, but requires the purchase to be made on-premise and in-person before it can be delivered



As part of our analysis, we also considered data from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) Surveillance Report, which tracks alcohol consumption rates across the country.²⁴ While the report itself includes topline drinking rates, the accompanying data file breaks down per capita drinking rates by state.²⁵ Specifically, it breaks down, by state, the per capita gallons of ethanol (i.e., pure alcohol) consumption rates for those 21 and older for all spirit types and those 14 and older for all spirit types.

We overlaid this consumption data with the state categorizations in Table 1, and weighted the data to account for population differences between states. We then converted these findings from per capita gallons of ethanol to per capita "drinks" consumed (according to NIAAA, a "standard drink" of alcohol in the United States contains 0.6 fluid ounces of ethanol).²⁶

Doing this allowed us to compare the change in alcohol consumption rates between 2019 (pre-pandemic) and 2020 (during the pandemic) in states that allowed alcohol delivery versus states that did not. Until more data is released for forthcoming years, this analysis provides the most complete picture yet in determining the impact of COVID-19 alcohol delivery reforms on alcohol consumption.

Table 2: Total Per Capita Alcohol Consumption: 21 and up

Note: Unlike off-premise alcohol delivery, no state had laws on its books allowing on-premise delivery prior to 2020. Therefore, every state listed as "Yes" or "Partial" for on-premise delivery enacted those rules in 2020.

	2019-2020 Drinking Difference (Per Capita Gallons Of Ethanol): 21 And Older	2019-2020 Drinking Difference (Per Capita "Drinks"): 21 And Older	2019-2020 Drinking Difference (Per Capita Gallons Of Ethanol): 14 And Older	2019-2020 Drinking Difference (Per Capita "Drinks"): 14 And Older
On-Prem Delivery				
No	0.11	22.90	0.10	20.64
Yes/Partial	0.08	16.29	0.07	14.88
Off-prem Delivery				
No	0.11	23.30	0.10	20.99
Yes/Partial	0.08	16.35	0.07	14.94
No → Yes/Partial	0.03	6.40	0.03	5.97
No → No	0.11	24.29	0.10	21.86
Yes/Partial → Yes/Partial	0.08	17.87	0.08	16.30

Sources: See Page 8.

The results of our analysis show that in states with no on-premise alcohol delivery during 2020, there was an increase in alcohol consumption of 22.9 drinks per capita among those 21 and older. In contrast, states that did allow on-premise alcohol delivery saw an increase of only 16.29 drinks per capita.

Underage access to alcohol is another concern cited by opponents of alcohol delivery. In states with no on-premise alcohol delivery in 2020, there was an increase in consumption of 20.64 drinks per capita for those 14 and older. In states that did allow on-premise alcohol delivery, there was an increase of only 14.88 drinks per capita.

The results were similar for off-premise alcohol delivery. In states with no off-premise delivery during 2020, there was an increase in drinking of 23.3 drinks per capita among those 21 and older. On the other hand, states that did allow off-premise alcohol delivery saw an increase of only 16.35 drinks per capita.

ANALYSIS KEY TAKEAWAY

Our analysis shows that in states with no on-premise alcohol delivery during 2020, there was an increase in alcohol consumption of 22.9 drinks per capita among those 21 and older. In contrast, states that did allow on-premise alcohol delivery saw an increase of only 16.29 drinks per capita.



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In a similar fashion, for states with no off-premise delivery, there was an increase in consumption of 20.99 drinks per capita for those 14 and older. For states that allowed off-premise delivery, there was an increase in drinking of 14.94 drinks per capita.

Likewise, there was not any discernible correlation in higher levels of drinking in states that liberalized their laws during the pandemic to allow alcohol delivery. For instance, states that prohibited off-premise alcohol delivery both before and during COVID-19 experienced an in increase in consumption of 24.29 drinks per capita for the 21 and older population cohort, whereas states that changed their laws from no off-premise alcohol delivery to allowing delivery experienced a consumption increase of only 6.4 drinks per capita.

With regard to the 14 and older study cohort, in states that prohibited off-premise alcohol delivery both before and during the pandemic, there was a consumption increase of 21.86 drinks per capita. For states that changed their laws from no off-premise delivery to permitting such delivery, the increase in consumption was only 5.97 drinks per capita. (For on-premise delivery, no states had laws on the books allowing on-premise alcohol delivery before COVID-19, so every state that allowed it in 2020 was doing so for the first time).

It is important to note that this data does *not* suggest that consumption rates in states that allowed alcohol delivery were lower because of such delivery. It does, however, demonstrate the lack of any discernible correlation between more alcohol delivery and higher drinking levels.

Conclusion

News headlines and opponents of alcohol delivery have voiced concerns throughout the pandemic about the possibility that alcoholic beverage delivery could lead to greater alcohol consumption. To bolster their concerns, those opposing such delivery often cited news articles and studies on overall pandemic drinking rates without fully exploring the specific potential role of delivery.

While prior efforts have attempted to study the link between alcohol delivery and alcohol consumption, they relied on surveys with limited sample sizes and noteworthy caveats that limited their import. By analyzing specific state-level alcohol delivery rules and comparing them to alcohol consumption rates, one can gain a clearer picture of the role COVID-19 alcohol delivery rules had on drinking levels.

Doing so shows that there is no discernible correlation between more liberalized alcohol delivery rules and higher consumption levels. States that reformed their laws during the pandemic to allow for more alcohol delivery likewise did not have higher alcohol consumption rates.

As lawmakers in more states continue to debate alcohol delivery legislation—or seek to take stock of already-enacted reforms—they should do so with an eye toward evidence-based policymaking. Empirical data, rather than anecdotes, can point the way forward.



There is no discernible correlation between more liberalized alcohol delivery rules and higher consumption levels. States that reformed their laws during the pandemic to allow for more alcohol delivery likewise did not have higher alcohol consumption rates.

About the Author

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