



Iowa Liquor

Alcoholic beverage division sales
analytics

OUR TEAM



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Executive Summaries

- **Liquor revenue is less than liquor budgeted by Iowa ABD**

- The number of liquor ordered in 2021 by Iowa ABD is ~31M bottles or equal to \$262M, but the number of bottles sold is only ~22M bottles or equal to \$258M (only 71% sold) which does not reach the BEP (Break Even Point).
- This condition creates problem because Iowa ABD cannot achieve profit in the given year, or at least it reaches the BEP for the liquor sales.
- From the data, we can see that Iowa ABD needs to increase sales at least ~2% by selling the unsold bottle, so that Iowa ABD can reduce the amount of unsold bottle from 2021.

- **Suggestion should be given to avoid the same condition next year**

- We suggest that until the end of the year 2022, liquor target sales should be increase up to 5% from 2021 sales, so that Iowa ABD can achieve profit in the given year.
- We suggest that to increase the number of liquor sales, Iowa ABD should create an event in a selected month or run a campaign such as online sales, DTC, and new packaging to increase customer interest.

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01. Background



Iowa Alcoholic Beverages Division (ABD) Overview

According to NABCA, National Alcohol Beverage Control Association, Iowa became one of the first Control states in 1934. The state regulates the traffic in alcoholic liquors for the protection of the welfare, health, peace, morals, and safety of the people of the state. Also, the state provides its E license liquor sales data monthly which contains more than 20M transactions records since 2012. Class "E" liquor license (LE) allows for the sale of alcoholic liquor for off-premises consumption in original unopened containers. In other words, this license is designed for customers who purchase alcohol and then take it somewhere else.



Problems Background

- Iowa spent **\$262 million** to import liquor demand requirements by stores in Iowa.
- In 2021, Iowa **only made \$258M** in revenue.
- Iowa can only order liquors from vendors in packs, not per bottle.
- Of 31M bottles ordered by Iowa ABD, only **71%** of bottles were sold to the stores in 2021.





02. Objective and Scope

Main Objective

- Giving recommendations about overstocked liquors sales for 2022.
- Advising on how to sell at least 2% of the unsold bottle.
- Giving recommendations on how to increase sales by 5% next year.

Scope Definition

- This report is created to display liquors sales insights to Iowa ABD within the period January 2021 – January 2022.
- This report includes the Iowa liquor sales from January 2021 to January 2022.
- This dataset is about sales between the Iowa Alcoholic Beverages Division and stores across Iowa county.
- We assume that the budget for liquor purchases is the same every year.
- We assume that the liquor purchased in year must be sold completely at the end of the year



03. Business Questions And Methodology

BUSINESS QUESTIONS

How to decrease the number of monthly unsold bottle by 2% in the next year.

How to increase total sales by 5% next year.

Methodology

```
graph LR; A[Brainstorming] --- B[Data Cleaning]; B --- C[Data Analysis]; C --- D[Data Visualization]; D --- E[Insights and Recommendation];
```

Data Cleaning

Clean the raw data using python

Data Visualization

Visualize the findings and insights using tableau

Brainstorming

Determine what topic and find the related dataset

Data Analysis

Analyze the data using python and tableau

Insights and Recommendation

Generated insights and recommendation for the business problem



04. Data Source



Iowa Liquor Sales (Jan 2021-Jan 2022)

<https://www.kaggle.com/gabrielramos87/iowa-sales-liquor-jan-2021jan-2022>

This dataset contains the spirits purchase information of Iowa Class "E" liquor licensees by product and date of purchase from January 2021 to January 2022. The dataset contains of ~ 3M rows and 24 columns.

05. Data Analysis



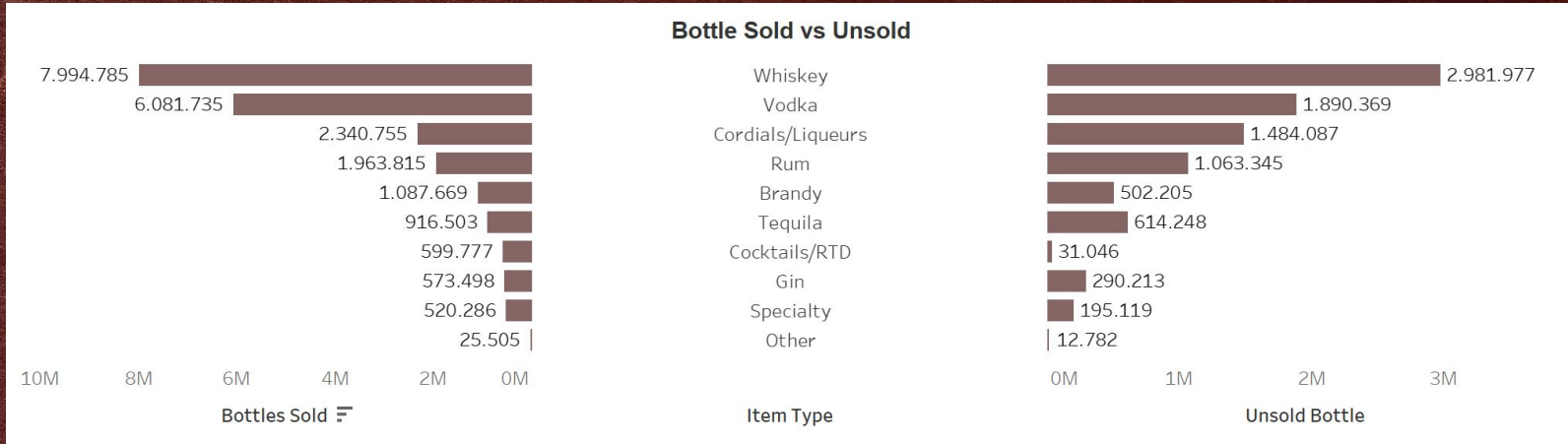
MONTHLY REVENUE IOWA ALCOHOLIC BEVERAGES DIVISION



Total Revenue in 2021 is 86M dollars.

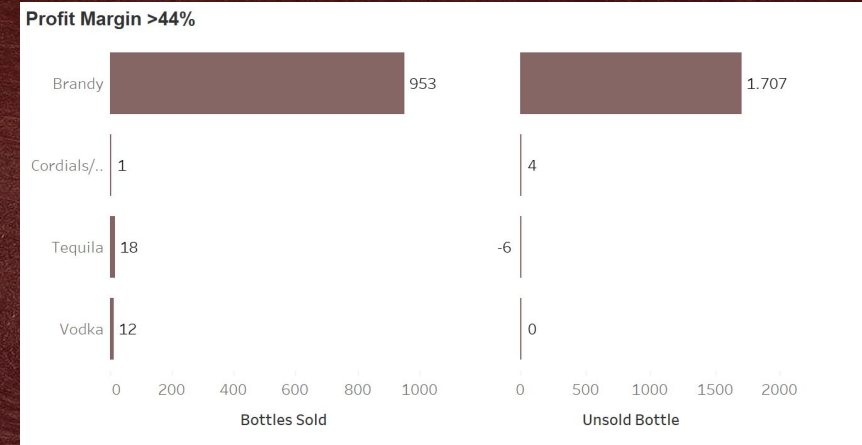
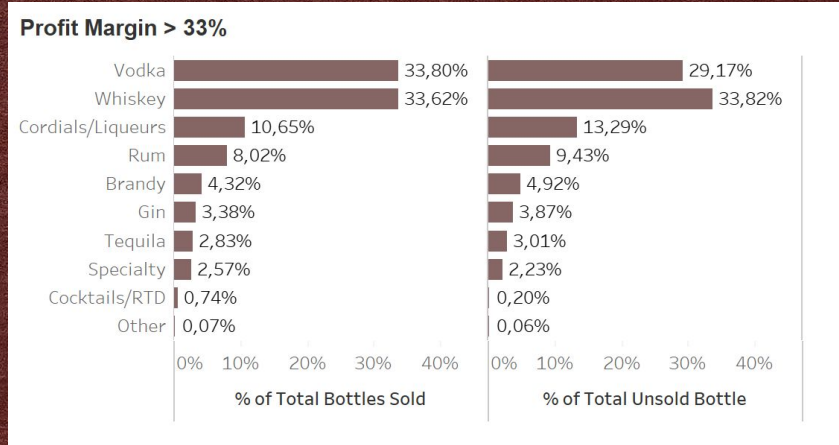
The months that generate the **Highest Revenue** are **March, June, and December**. The **Lowest Revenue** occurred in **July 2021 and January 2022**.

NUMBER OF SOLD AND UNSOLD BOTTLES PER CATEGORY



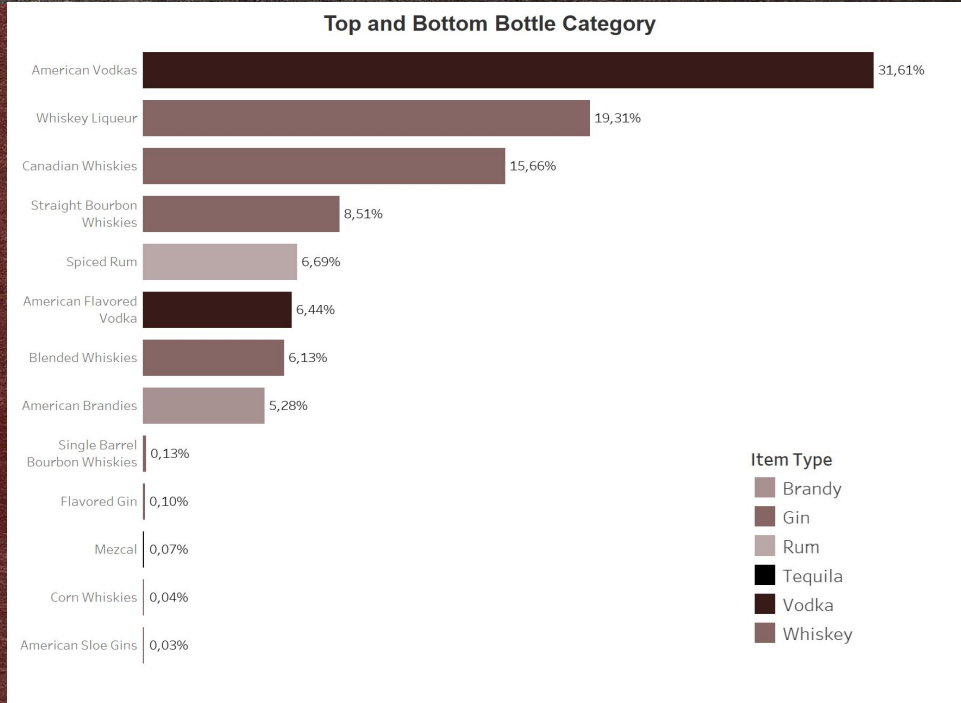
- The total **Unsold Bottles** is **29%** of the total bottles. The total unsold bottles indicates **1/3** of the **total bottles sold**.
- The top 3 **Best Selling Bottle** based on categories are **Whiskey, Vodka, and Cordial/Liqueurs**.

PROFIT MARGIN



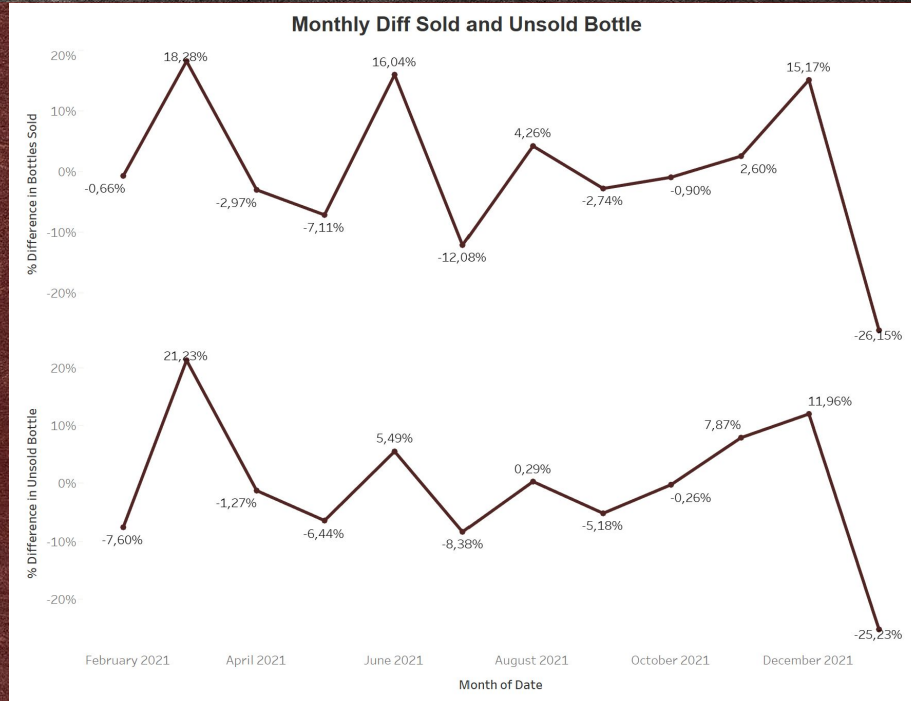
The **Average** profit margin for all categories is **around 33%**. There was an **Increase in Unsold Bottles** when the profit margin got significant for certain categories.

TOP 8 AND BOTTOM 5 BOTTLE CATEGORY



The highest type of liquor sales is Vodka (**American Vodka**). The second popular type is Whiskey (**Whiskey Liqueur, Canadian Whiskies, Straight Bourbon Whiskies**).

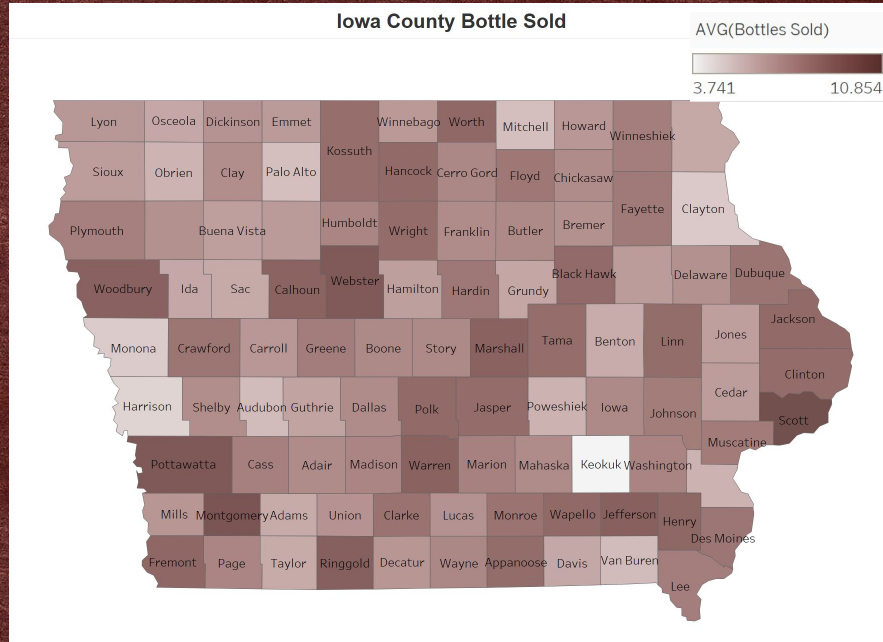
MONTHLY DIFFERENCE SOLD AND UNSOLD BOTTLE



Monthly bottle sold shows a downtrend from the beginning of the year to the end of the year 2021.

The most **significant percentage difference** between the total sold and unsold bottles is **June (11%)**. There is a high demand in June so it can be used as a good sales month. While **March and December** were relatively higher, the **unsold level** for those months was **relatively high**. So that promos can be given in both months by considering the amount of liquor ordered.

MAP OF AVERAGE BOTTLE SOLD PER COUNTY



South Iowa is the area that has a higher average liquor consumption than North Iowa.

The **Highest Bottle Sold** are in **Scott** county. And the **Lowest Bottle Sold** are in **Keokuk** county.



**06. INSIGHTS AND
RECOMMENDATION**

INSIGHTS

01.

Iowa ABD's revenue does not cover the overall expense to buy liquor (deficit of \$3,6M).

02.

Iowa ABD's only achieve ~71% sales from the overall liquor bought.

03.

Iowa ABD's unsold bottle reached a staggering ~29% of the overall liquor bought.

04.

There is a downtrend in bottle sold from the beginning of 2021 to the beginning of 2022

05.

Downtrend in bottle sold and profit showing that innovation is required to boost more sales in the near future

RECOMMENDATION

01.

Increase the number of bottle sold at least 2% per month to achieve BEP by giving promo on selected item (liquor that has more that 44% profit margin).

02.

Increase the bottle sold target from 71% in 2021 to 75% until the end of 2022 to gain profit.

03.

We suggest that we should focused our sales on the most preferable liqueurs such as whiskey, Vodka, Cordials/liqueurs in Iowa.

04.

Innovation like ordering new packaging type, improving online sales, and DTC (direct-to-customer) shipping can increase the number of liquor sales. (source: goekos.com)

05.

Increase the sales by running a campaign in several counties (Scott, Pottawatta, Montgomery) that have high average bottles sold.

06.

Create an event or campaign in March, June, and December that has high profit to optimize the sales of liqueurs.

THANK YOU



APPENDICES

Data

Script

Visualization

CREDITS

CREDITS: This presentation template was created by **Slidesgo**, including icons by **Flaticon** and infographics & images by **Freepik**