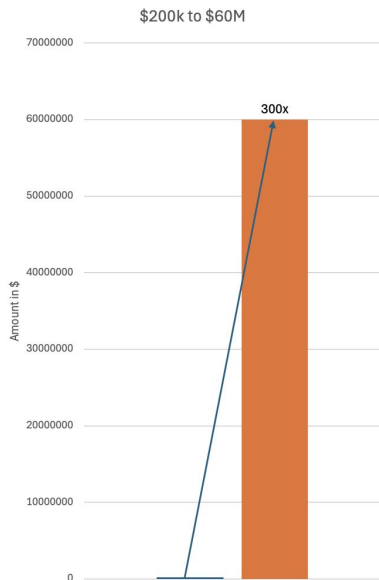


**Innovation is the currency,  
investment is the reward**

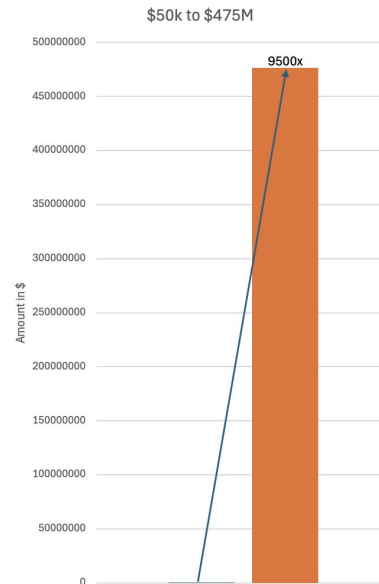
**Wait, It's not about Stocks**

# Investment & Reward

Lori Greiner made \$60M from \$200k



Barbara Corcoran made \$475M from \$50k



Who are these people? And How?



## Sharks & Investment in Startup



**Presented by  
Group 13**

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# SHARK BITES : COMPREHENSIVE ANALYSIS OF SHARK TANK INVESTMENTS

# Agenda

- 1 Motivation
- 2 Data overview and processing
- 3 Methodology
- 4 Analysis on Investment by Industry/Geography/Gender/Shark
- 5 Recommendation for Pitcher
- 6 Conclusion

# Motivation

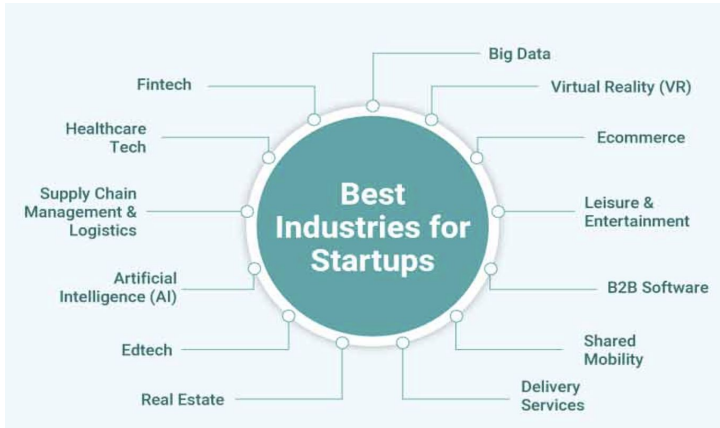
**Startups face significant challenges in achieving long-term success:**

- **Up to 90% of startups fail** due to financial, market, and operational hurdles.
- Certain industries, however, offer **better growth potential**:
  - Fintech, Artificial Intelligence, Healthcare Tech, and Virtual Reality are among the most promising.

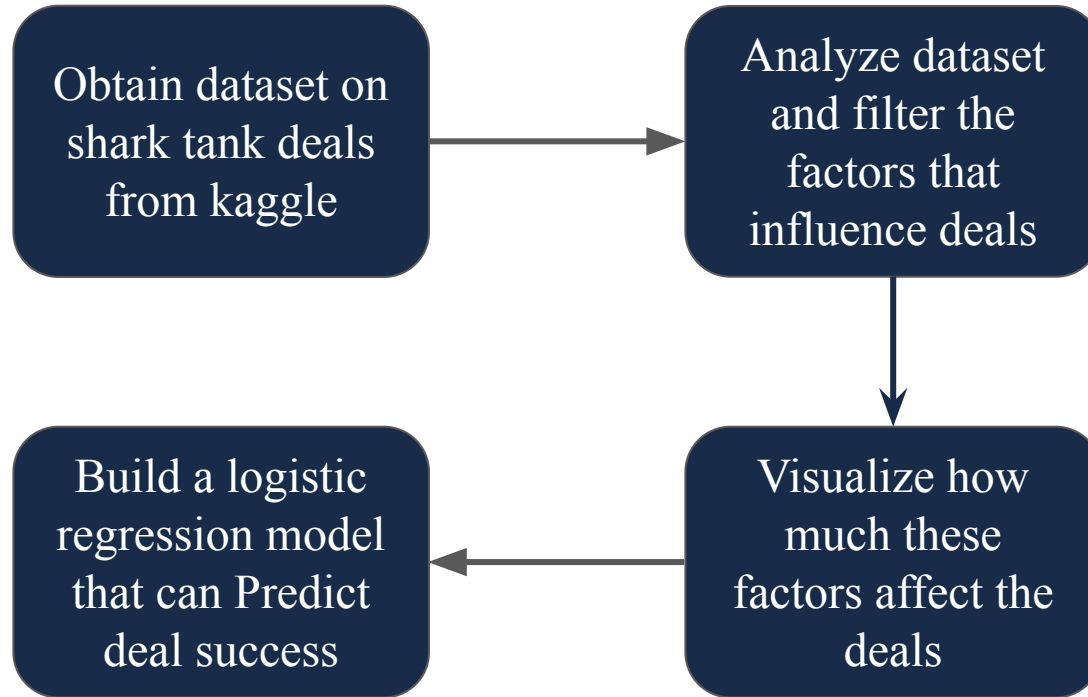
**Directions to Explore:**

- What factors contribute to **successful startup pitches**?
- How do **investor preferences** vary by industry and region?
- How can we use Shark Tank data to **identify key trends** for startups?

According to the latest data,  
up to 90% of startups fail

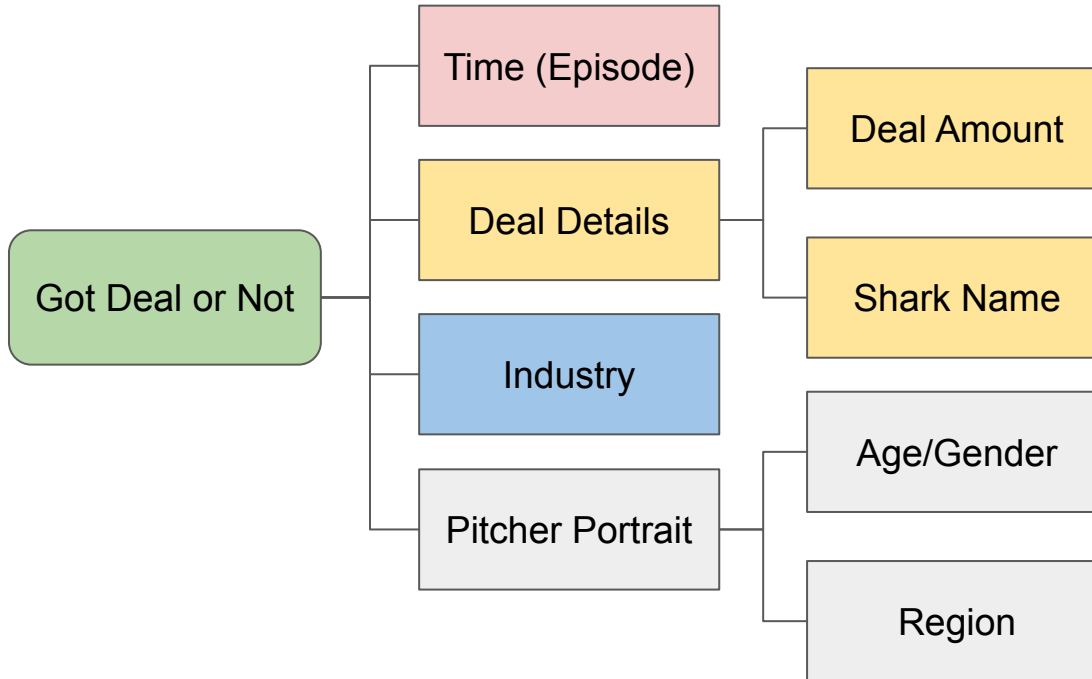


# Methodology



# Dataset

## Data Structure

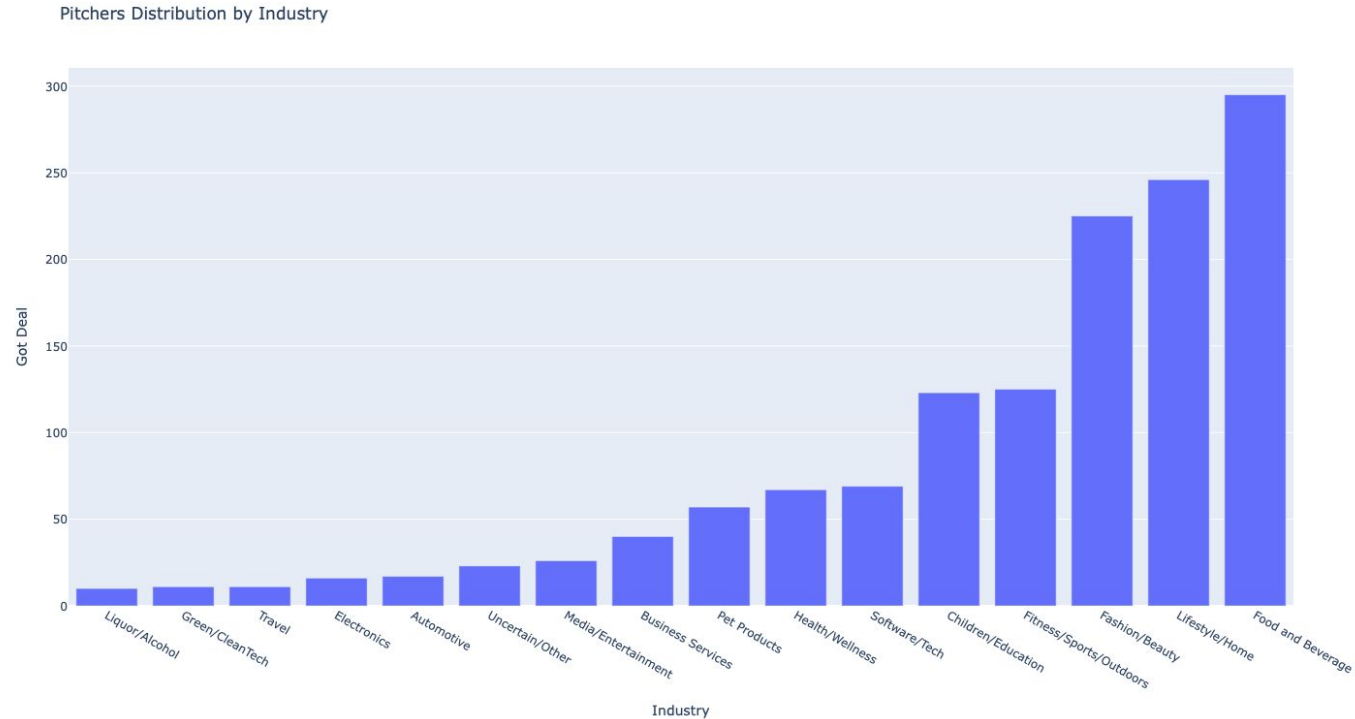


## Data Processing

- **Remove insignificant missing data points** without state, pitcher gender or industry information;
- **Complete significant missing values** from the internet;
- **Rank data points by timeline** and divide by **seasons, episodes**;
- Divide Pitchers' State Into Two Parts: High GDP and Low GDP to **decrease the Number of Categories**

# Pitchers' Interest by Industry

- Total of 1360 startups have pitched their ideas in 15 seasons have been divided into 16 industries.
- **Liquor/Alcohol, Green/CleanTech and Travel** are not favored by pitchers.
- **Food and Beverage, Lifestyle/Home** and **Fashion/Beauty** are the most popular among pitchers.

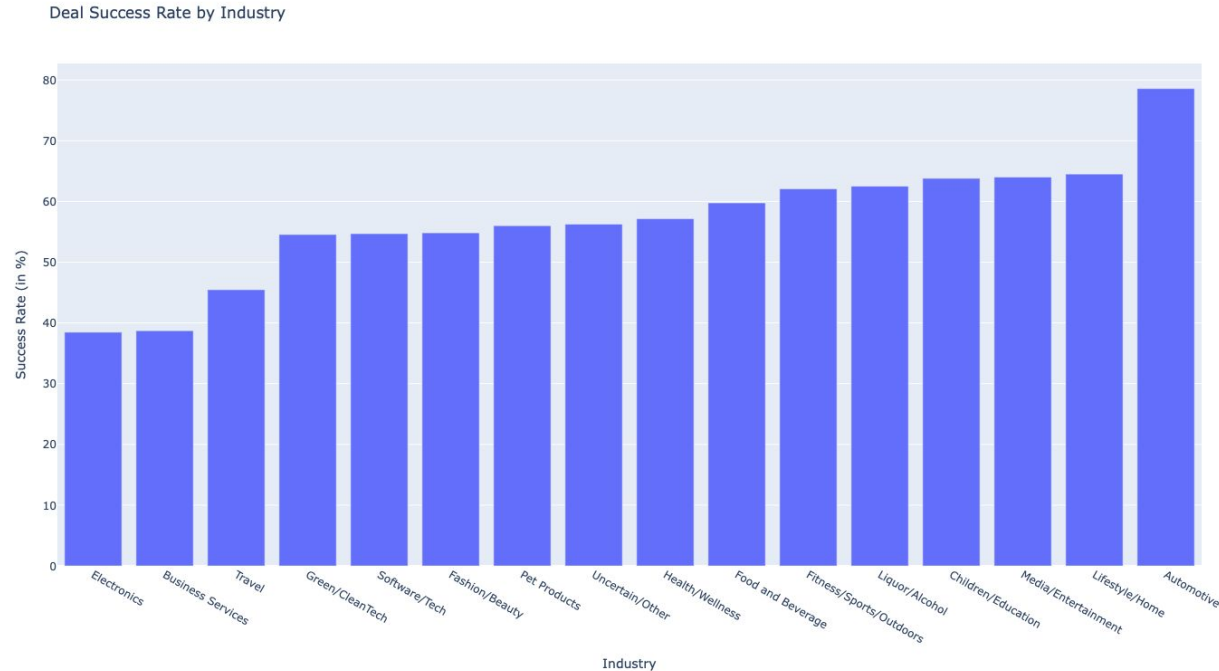




# Deal Success by Industry

$$\text{Deal Success Rate} = (\text{Total Number of Offers Made} / \text{Number of Pitches per Industry}) \times 100$$

- Industries like Automotive and Lifestyle/Home are most likely to get investment from the Sharks.
- Electronics and Business Services struggle to get much investor commitment.
- This could be due to high development costs, niche markets or lack of alignment with Shark preferences.



# Industries liked by Shark vs Viewers

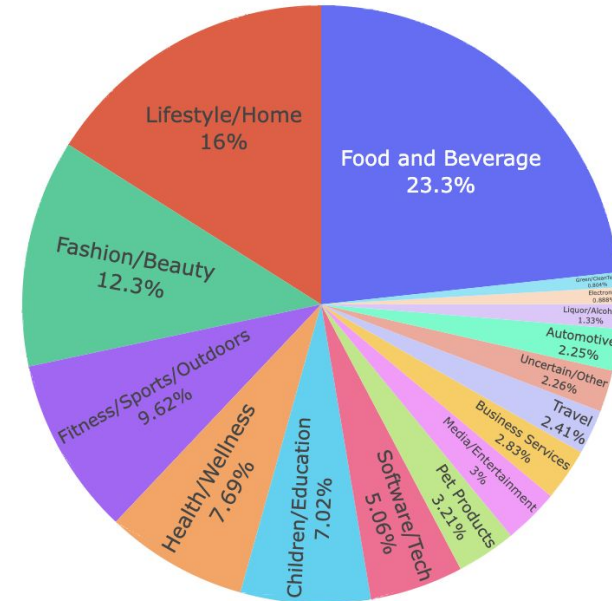
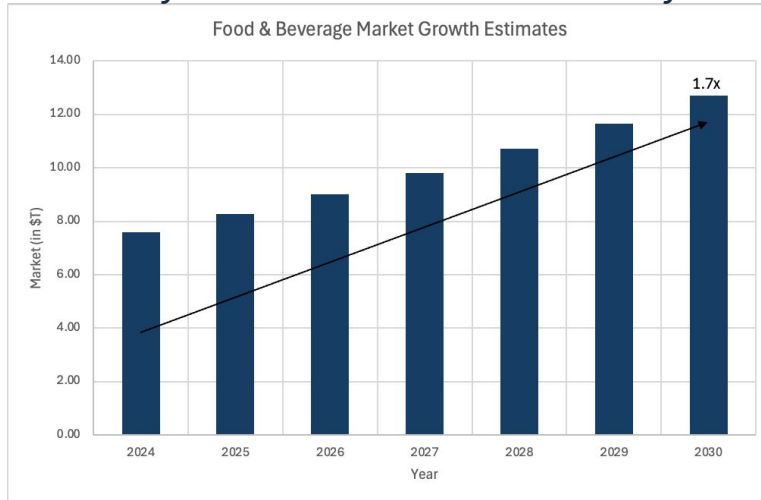
- There is a disparity between the industries preferred by sharks and viewers.
- Automotive** companies are **liked most by sharks** but less by audience. Similarly, **travel** are companies are **preferred more by audience**.
- Industries **boxed** in the plot are **equally liked by both the sharks and viewers**.

US Viewership vs Success Rate by Industry



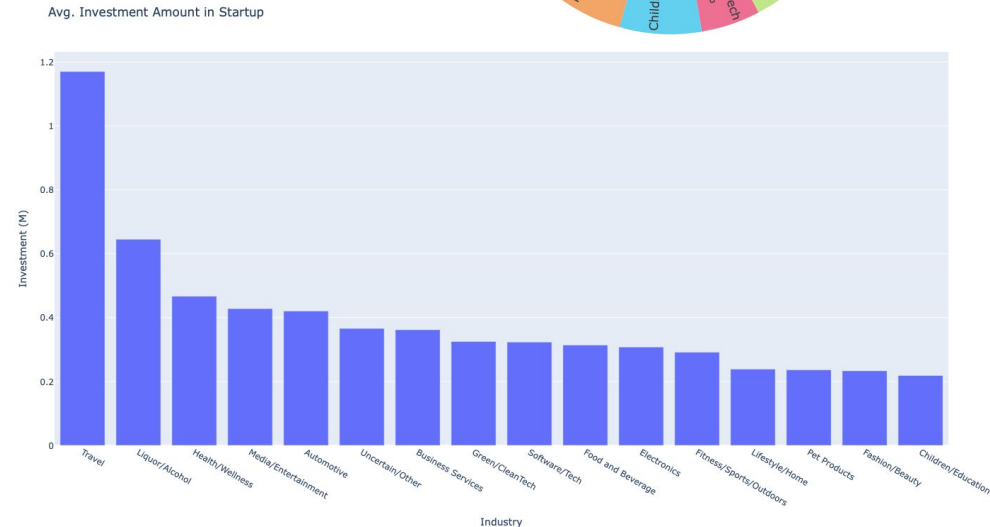
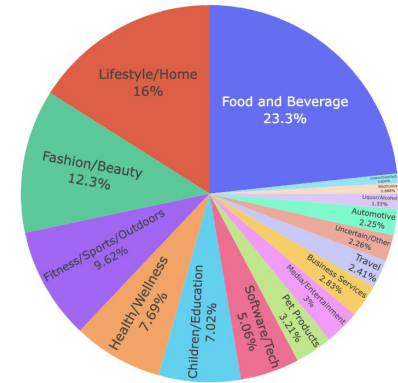
# Total Investment Distribution between Industry

- Shark Tank investors favor consumer-focused industries like F&B, Lifestyle, and Fashion, while specialized sectors like Automotive and Electronics receive less investment due to higher costs and limited alignment with investor interests
- Why Shark Prefer above industry?



# Investment Trends Across Industries: Deal Volume vs. Average Funding

- The Food and Beverage industry dominates in deal volume but doesn't lead in average investment size, indicating a larger number of smaller investments
- The chart illustrates that sectors with a lower share of total deals can still attract larger individual investments



# Pitchers Count per State in USA

**Highest Concentration:** Yellow highest concentration

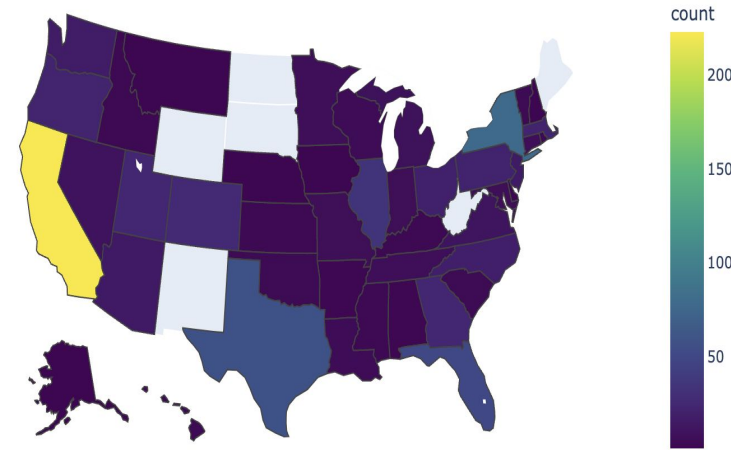
- **California** leads with the highest pitchers count, reaching nearly **200**. This is almost **twice the count of Texas**, which has around **100**. The disparity highlights California's robust entrepreneurial ecosystem tied to Shark Tank.

**Coastal States Dominance:**

- States like Florida and Texas show moderate to high counts, with **Florida** having approximately **80** pitchers and **Texas** around **100**. This trend reflects the prominence of coastal areas in Shark Tank-related ventures.

**Sparse Distribution:**

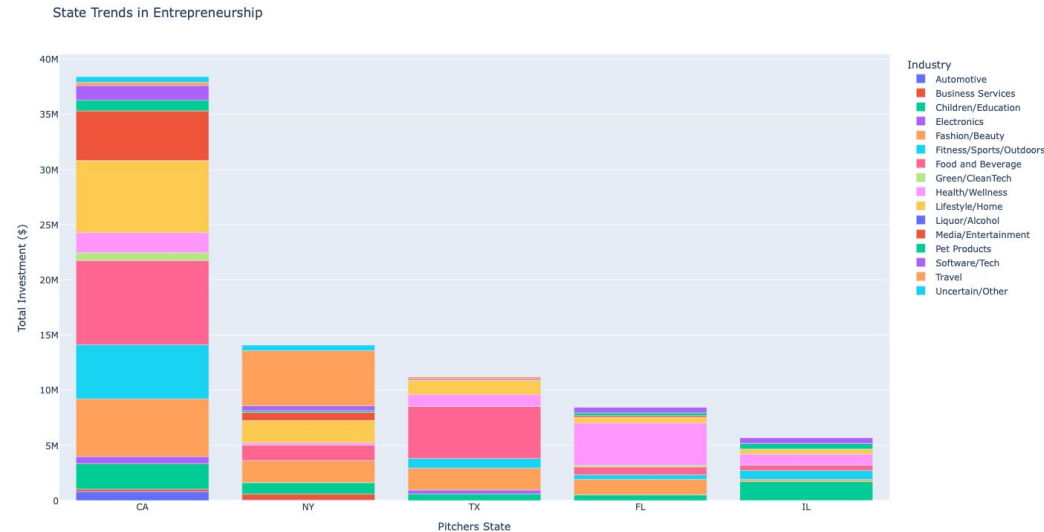
- Midwest and some inland states (e.g., North Dakota, South Dakota) have minimal representation, indicating limited Shark Tank activity in these regions



Geographic Distribution of Pitchers

# Top 5 States with Highest Investment

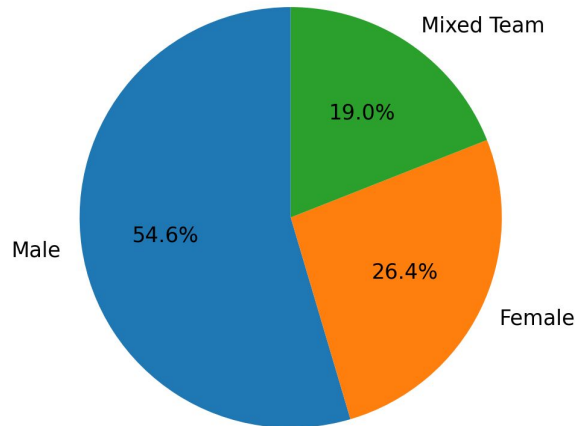
- California leads in tech-related investments, while other states like New York and Texas excel in industries aligned with their local economies
- California's leadership in total investment is bolstered by its large population (39 million people) which fuels economic activity, innovation, and market opportunities



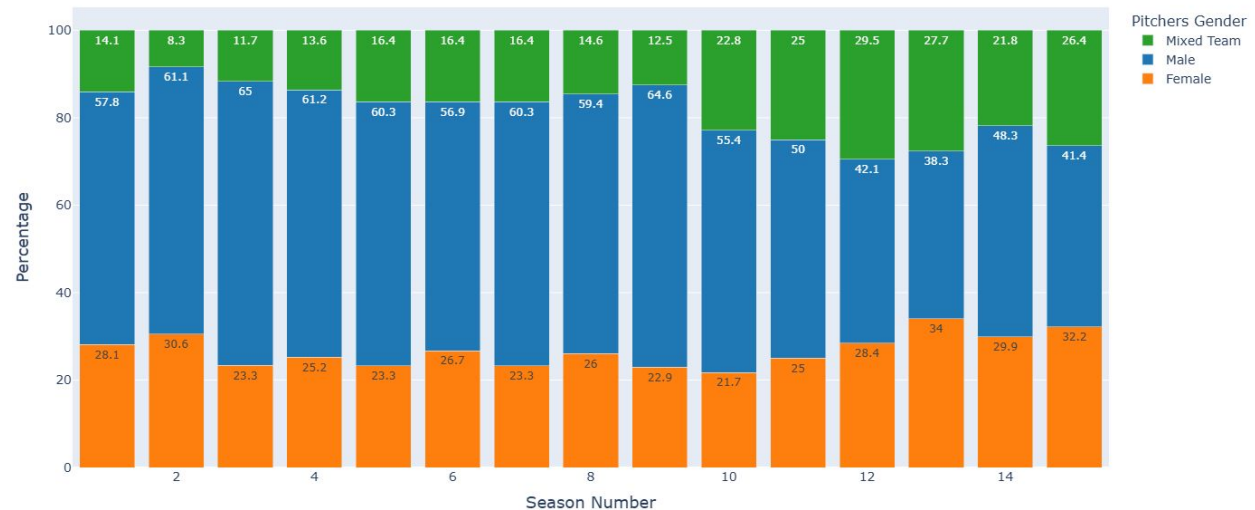
# Pitchers Gender

- Overall men make up most of the pitchers, with 74% of teams including at least one male pitcher, while only 45% of teams include at least one female pitcher.
- There is an increase in diversity in later seasons, with decrease in male representation and increases in female and mixed team participation.
- Starting from season 12, the distribution among the three gender categories becomes more balanced compared to earlier seasons.

Gender Distribution of Pitchers

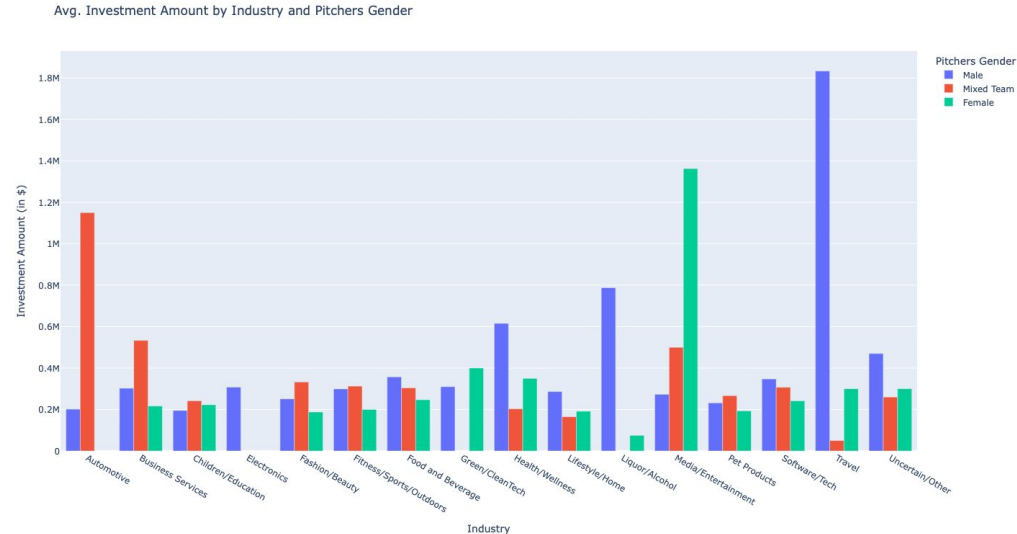


Gender Diversity in Shark Tank Pitches by Season



# Pitchers Gender & Investment

- Mixed Teams seem to get more investments in industries like Automotive, which are known for being innovative and growing fast
- Female-led teams have strong appeal in Media/Entertainment, which challenges traditional investment biases
- Some industries such as Children and Pets display minimal differentiation among gender categories, suggesting investment decisions here might be less gender-biased





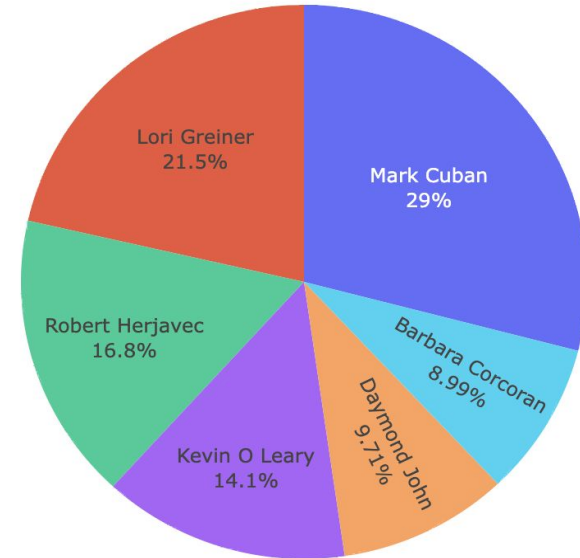
# Total Investment Distribution between Sharks

## Dominant Investors:

- **Mark Cuban** leads the investment contributions with **29%**, indicating his significant influence and preference for investing in promising ideas on the show
- **Lori Greiner** follows with **21.5%**, making her the second-most active investor. Together, Mark and Lori contribute to nearly half (50.5%) of the total investments

## Strategic Focus:

- The dominance of Mark Cuban and Lori Greiner suggests they are often drawn to scalable or consumer-focused ideas, aligning with their entrepreneurial backgrounds
- The variation in investment shares may reflect differing risk appetites and investment strategies among the Sharks



# Deal Flow from Industries to Sharks

## Industry Preference:

- Mark Cuban tends to invest in a wide range of industries, with a significant focus on alcohol, going back to how most of the sharks invest in beverage companies

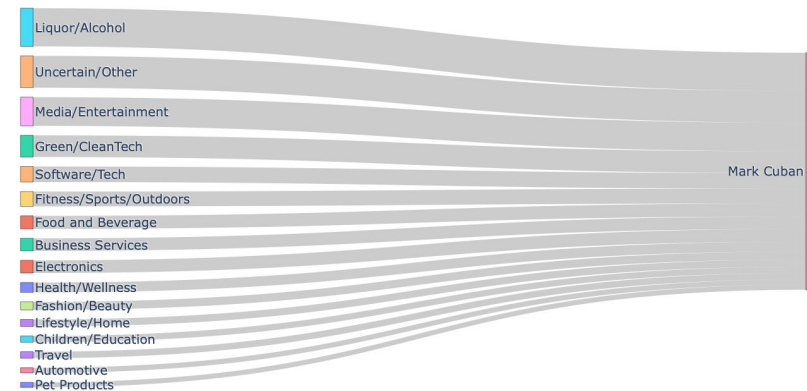
## Diverse Deal Flow:

- Industries such as Pet Products, Fashion/Beauty, and Media/Entertainment attract investments from multiple Sharks, with uneven distribution reflecting certain Sharks' stronger priorities and others' selective interest

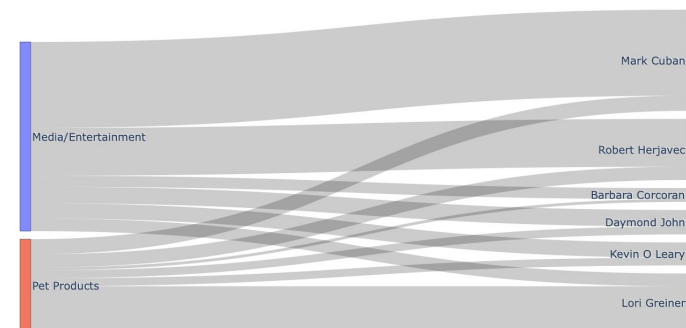
## Strategic Focus:

- Each Shark demonstrates distinct preferences, aligning their investments with their expertise and market understanding, creating a diverse portfolio across industries

Mark Cuban Avg. Investment Deal Flow to Industries per Pitch



Avg. Deal Flow from Media/Pet to Sharks



# Recommendation for Pitchers' Profile: No Confound

Demo: Pick out **Top-10** significant coefficients of Logistic Regression

**YES!**

- Multiple Entrepreneurs
- Low Original Offered Equity
- In High GDP State (TOP10)
- Industry:
  - Fitness/Sports/Outdoors
  - Media/Entertainment
- Female

**No!**

- Singular Entrepreneur
- High Original Offered Equity
- In Low GDP State
- Industry:
  - Pet Products
  - Fashion/Beauty
  - Business Services
- Male

# Conclusion

- **Impact of Shark Tank:** Startups receiving investments on the show often experience increased visibility, credibility, and opportunities for growth
- **Investment Preferences:** Certain industries like Automotive and Food & Beverage consistently attract the most attention and success, showing where investors see potential
- **Pitcher Insights:** Teams with diverse gender representation or women-led teams are proving competitive, challenging traditional norms in investment patterns
- **Key Recommendations:** Startups should align their pitches with Shark preferences, focus on scalability, and showcase innovation to increase success chances
- **Post-show Success Rate:** Of the 210 companies from Shark Tank seasons 5 to 9, only 12 failed (6%), far below the 70% average startup failure rate

**Thank you!**

**Any questions?**