Startup Investment Trend Analysis - Shark Tank U.S.

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**Executive Summary**

This project delivers a data-driven analysis of startup investments from the Shark Tank U.S. television series. Using Power BI and Excel, we extracted insights into investor behavior, industry preferences, and startup funding outcomes across multiple seasons. The resulting dashboard provides an interactive platform for exploring funding patterns and deal trends.

1. **Objectives**

* Identify top-funded industries and startups.
* Analyze patterns in founder demographics (gender, age, location).
* Understand investor preferences and deal involvement.
* Visualize trends across seasons and pitch outcomes.

1. **Tools & Technologies**

|  |  |
| --- | --- |
| TOOL | PURPOSE |
| Excel | Data cleaning & transformation |
| Power-BI | Data modeling & visualization |
| DAX | Custom KPIs and aggregations |

Learning / skills Applied

* Advanced Excel (IF, filters , data cleaning)
* DAX for KPIs and calculated columns
* Interactive Story telling with Slicers and Charts

1. **Dataset Overview**

Source: Shark Tank U.S. seasons dataset – From KAGGLE Database

Total Pitches: 1274

Deals Closed: [765](tel:765), indicating a approximately 60% pitch-to-deal success rate.  
Average Deal Size: approximately $[296](tel:296),[063](tel:063)

Key Fields: Industry, Deal Amount, Investor Contributions, Pitcher Demographics, Season, Location

All Fields:

Season number, episode number , pitch number, original air date, startup name , industry, business description, pitchers gender, pitchers city, pitchers state , pitchers average age, entrepreneurs names, company website, multiple entrepreneurs, US viewership, original ask amount , original offered equity, valuation requested, got deal , total deal amount , total deal equity, deal valuation, number of sharks in deal, investment amount per shark, equity per shark , royalty deal, loan, Barbara Corcoran investment amount, Barbara Corcoran investment equity, Mark Cuban investment amount, Mark Cuban investment equity, Lori greiner investment amount, Lori greiner investment equity, Robert herjavec investment amount, Robert herjavec investment equity, daymond John investment amount, daymond John investment equity, Kevin o Leary investment amount, Kevin o Leary investment equity, guest investment amount, guest investment equity, guest name, Barbara Corcoran present, Mark Cuban present Lori greiner present, Robert herjavec present, Kevin o present.

1. **Data Cleaning & Preparation**

* Cleaned and standardized industry names.
* Handled missing values and removed inconsistencies like removing symbols and normalized numeric fields.
* Created derived columns: using calculated measures and formulas for

Deal Status

=IF(OR(TRIM(LOWER(CLEAN(N2)))="yes", TRIM(LOWER(CLEAN(N2)))="true", N2=1), 1, 0)  
  
Investor Count

=COUNTIF(AC2,">0") + COUNTIF(AE2,">0") + COUNTIF(AG2,">0") + COUNTIF(AI2,">0") + COUNTIF(AK2,">0") + COUNTIF(AM2,">0") + COUNTIF(AO2,">0")

* Built DAX measures: for KPIs and visual calculations.

Total Startups = DISTINCTCOUNT('SharkTank'[startup name])  
  
Total Deals = SUM('SharkTank'[Deal Status])  
  
Total Deal Amount = SUM('SharkTank'[total deal amount])  
Total Investment = SUM('SharkTank'[total deal amount])  
  
Average Deal Size = AVERAGE('SharkTank'[total deal amount])  
  
Average Deal Valuation =  
    AVERAGEX(  
        FILTER('SharkTank', 'SharkTank'[Deal Status] = 1),  
        'SharkTank'[deal valuation]  
    )

Shark investment share:  
Barbara Investment = SUM('SharkTank'[Barbara Corcoran investment amount])  
Mark Investment = SUM('SharkTank'[Mark Cuban investment amount])  
Lori Investment = SUM('SharkTank'[Lori greiner investment amount])  
Robert Investment = SUM('SharkTank'[Robert herjavec investment amount])  
Daymond Investment = SUM('SharkTank'[daymond John investment amount])  
Kevin Investment = SUM('SharkTank'[Kevin o Leary investment amount])  
Guest Investment = SUM('SharkTank'[guest investment amount])  
  
Shark Investment Value =  
SWITCH(  
    SELECTEDVALUE('SharkNames'[Shark]),  
    "Barbara", [Barbara Investment],  
    "Mark", [Mark Investment],  
    "Lori", [Lori Investment],  
    "Robert", [Robert Investment],  
    "Daymond", [Daymond Investment],  
    "Kevin", [Kevin Investment],  
    "Guest", [Guest Investment]  
)

1. **Data Modeling & Dashboard Highlights**

Page 1: Startup & Deal Trends

1. KPI Cards: Total Investment, Deal Count, Total Investment
2. Industry-wise Bar Chart: Top-funded domains
3. Gender wise Bar Chart: Deal status on gender basis
4. Tree Map View: Startup hotspots by location
5. Line Chart: Season-wise investment trends
6. Filters: Gender, Industry, Season

Page 2: Investor Behavior

1. Pie Chart: Shark-wise investment share
2. Matrix Table: Industry preference by shark
3. Funnel Chart: Pitch-to-deal conversion pipeline
4. Filters: Gender, Industry, Season
5. Top 10 Funded Startups Table





1. **Key Inferred Insights**

* Most Funded Industry: ***Food and Beverage*** received the highest total funding at $[51.2](tel:51.2) million.
* Top Investor: ***Mark Cuban*** participated in the most deals [most active investor] - [230](tel:230) in total.
* Top Funded Startup: ***Air Car*** secured the largest deal worth $5 million.
* Peak Investment Season: ***Season 6*** recorded the highest total investments - $[26.2](tel:26.2) million.
* Deal Success by Gender:
* ***Mixed Teams:***[***65.4***](tel:65.4)***% success***
* ***Female Founders:***[***63.6***](tel:63.6)***%***
* ***Male Founders:***[***56.5***](tel:56.5)***%***
* Top State for Funded Startups: California (CA) with [126](tel:126) funded deals
* Average Number of Sharks per Deals showing that most deals involve a single investor.
* Startups from ***California, New York, and Texas*** received the highest number of deals.

1. **Business Implications of the Shark Tank Investment Trends**
2. Dominance of Food & Beverage Sector  
     
   Implication:  
   The ***Food & Beverage industry receiving the highest*** funding suggests:
   * + 1. High consumer demand
       2. Lower entry barriers
       3. Scalable product potential (national/international reach)

Recommendation:  
Early-stage entrepreneurs in this sector should focus on innovation, unique branding, and sustainable packaging to attract investor attention.

1. Investor Preferences Drive Deal Patterns  
     
   Implication:  
   Investors like ***Mark Cuban and Lori Greiner*** prefer startups with strong consumer appeal, scalability, or tech-backed products.  
     
   Recommendation:  
   Founders should tailor pitches to investor personalities and domains. For example, tech founders might target Mark Cuban, while consumer product startups may prioritize Lori Greiner.
2. Gender Dynamics in Funding  
     
   Implication:  
   Startups with ***female or mixed-gender founder teams*** have a higher deal success rate. This indicates:
   * + 1. Positive shift toward inclusive funding
       2. Investor focus on team diversity and presentation strength

Recommendation:

Encouraging diverse founding teams and promoting gender-balanced pitching panels may improve deal odds and investor confidence.

1. Seasonality Affects Investment Volume  
     
   Implication:  
   Certain seasons (like ***Season 6***) show peak investments. This could be due to:
2. Stronger startups being featured mid-series
3. Investors being more aggressive with capital allocation in specific seasons

Recommendation:  
Showrunners or pitch organizers (real or simulated) could strategically schedule higher-potential startups during those windows.

1. Geographic Concentration (California & NY)  
     
   Implication:  
   Startups from states like ***California*** dominate funding. This suggests:
2. Strong startup ecosystems in metro hubs
3. Better access to pitching opportunities

Recommendation:  
Startups from underserved regions may need regional accelerators or virtual pitch platforms to level the field.

1. Multiple Investors = Validation  
     
   Implication:  
   Deals with multiple sharks likely indicate:
2. Negotiation flexibility
3. Shared risk and mentorship potential
4. Strong product-market fit

Recommendation:  
Founders should remain open to multi-investor deals, especially when looking for strategic support beyond capital.

1. Average Deal Size Reflects Mid-Level Investment  
     
   Implication:  
   The average deal (approximately $[296](tel:296)K) is ideal for early-stage startups looking for seed or pre-Series A rounds.  
     
   Recommendation:  
   Founders should align their funding ask with this benchmark and clearly justify valuation to avoid deal rejection.
2. **Challenges Faced**
   * Cleaning inconsistent industry labels
   * Dealing with missing investment values
   * Mapping investor names with columns
3. **Future Enhancements**

* Extend analysis to Shark Tank India for comparative insights.
* Build predictive models for deal success using machine learning.
* Embed real-time dashboards via Power BI Service for continuous updates.

1. **Conclusion**

The dashboard serves as a strategic tool for stakeholders from founders to investors offering data-backed insights into the startup funding landscape on Shark Tank. It highlights the factors influencing deal outcomes and offers a deeper understanding of investor preferences.