



ZenCap Investment Analysis

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Introduction



Objective: To develop a logistic regression model to predict the success or failure of startups.



Client: ZenCap, a venture capital firm.



Dataset: Collected from California startups spanning 2018-2020.

Background



THE VENTURE CAPITAL LANDSCAPE HAS
SHIFTED DRAMATICALLY OVER THE PAST
DECADE.



ZENCAP IS EXPLORING INNOVATIVE
WAYS TO LEVERAGE AI AND ML FOR
INVESTMENT DECISIONS.

The Task



Develop a logistic regression model to predict the success or failure rates of startups.



Design and fine-tune the model using the given dataset.



Validate the model's accuracy using various metrics.



Provide a comprehensive commentary on the results and propose specific actions.

Data Overview

Features:	Revenue	Net Profit	Debt Ratio	Market Share
Age of Business	Location Type	Customer Satisfaction	Innovation Index	Rent Cost
Regulation Compliance	Number of Employees	Social Media Followers	Number of Branches	CEO Tenure
Local Unemployment Rate	Global Economic Growth	Industry Average Profit Margin	Median Work Experience	

Data Preprocessing

Handling Missing Values: Replaced with the median for numeric columns.

Categorical Variables: Converted to factors.

Model Building



MODEL: LOGISTIC
REGRESSION



PREDICTORS: ALL FEATURES
FROM THE DATASET

Model Validation



VALIDATION
METRICS:



ACCURACY:
73.05%



PRECISION:
65.75%



RECALL:
70.59%

Recommendations

1. Focus on Key Predictors:

- Age of Business
- Innovation Index
- Median Work Experience

2. Adjust Investment Threshold:

- According to ZenCap's investment philosophy and risk appetite.

3. Consult Experts:

- Align the model's results with ZenCap's expertise and goals.

4. Update Model Regularly:

- Maintain accuracy with new data over time.

Conclusion



The logistic regression model provides a robust tool for predicting startup success.



By leveraging key predictors and fine-tuning the investment threshold, ZenCap can make informed, data-driven investment decisions.