

Insurance Cold Calling Optimization Using Random Forest Regression Compared with Support Vector Machine For Improved Accuracy

INTRODUCTION

- The primary aim of this research is to optimize the cold-calling process for insurance companies, focusing on improving efficiency, reducing resource consumption, and enhancing overall productivity. By refining cold-calling strategies, insurance companies can more effectively attract new customers and maximize profits.
- To identify factors like call timing, audience demographics, and communication skills that affect cold-calling success and to evaluate the effectiveness of various machine learning techniques, such as Random Forest Regression and Support vector machine, in streamlining marketing and sales initiatives for insurance companies.
- Use machine learning algorithms, such as Random Forest Regression and Support vector machine, to analyze and optimize cold-calling strategies.
- Enhanced sales outcomes for insurance companies, with higher conversion rates and increased customer satisfaction, resulting from more targeted and data-driven cold-calling methods.

5 Questions to Ask Yourself Before Talking to Your Prospect

What is their biggest pain point?

How can I fix that problem?

How much are they willing to pay?

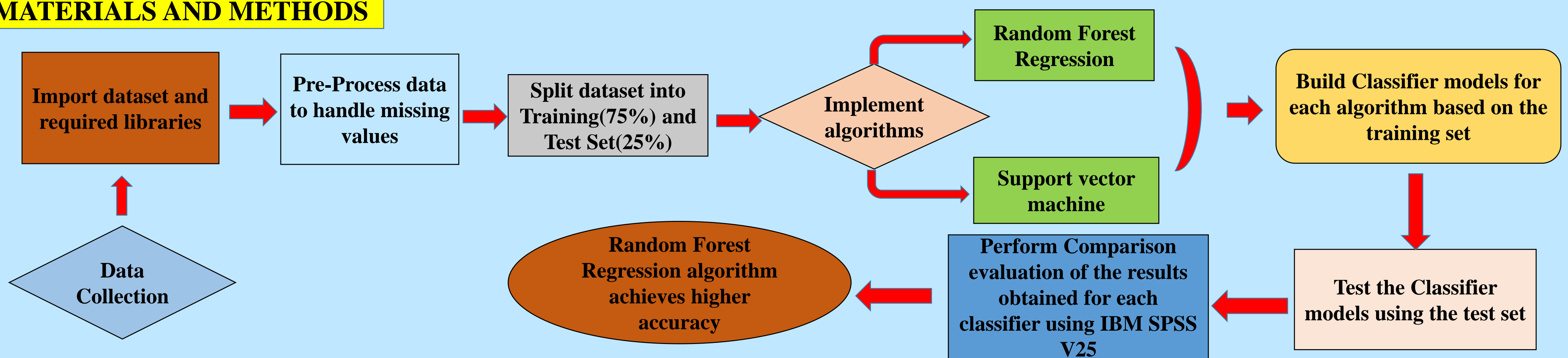
What happens if they don't buy your service?

How are you different from your competitors?

BRIAN TRACY
INTERNATIONAL

Fig 1. Insurance agent's prospect by Brian Tracy

MATERIALS AND METHODS



Process of evaluating and Optimizing Insurance Cold Calling

RESULTS

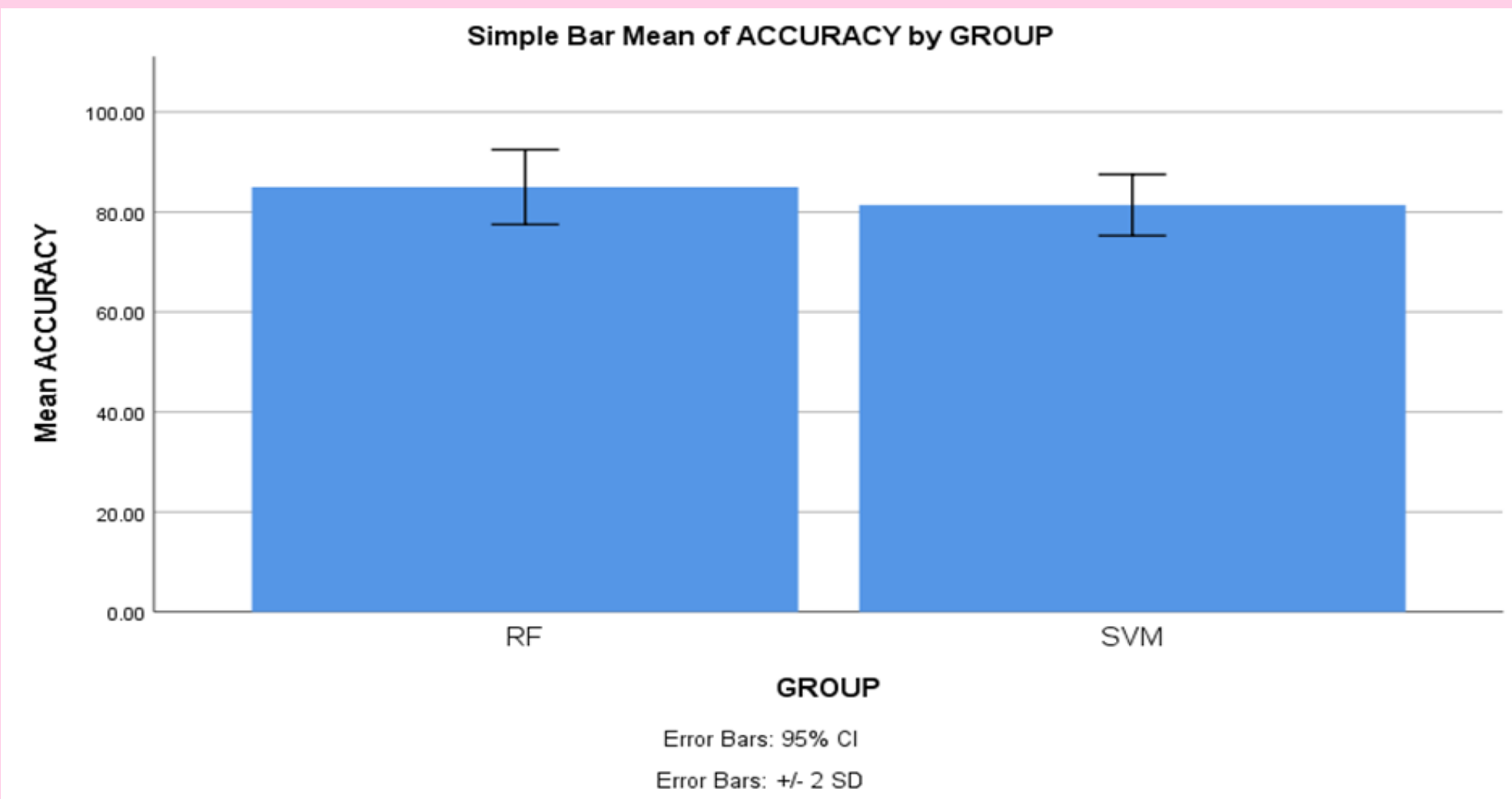


Fig 2. Comparison of the Mean Accuracy Graph

Table 1. The Mean Accuracy of the Random Forest Regression algorithm and Support vector machine

Groups		N	Mean	STD. Deviation	STD. Error Mean
Accuracy	Random Forest Regression	10	85.4000	3.74166	1.18322
	Support Vector Machine	10	81.6000	3.06232	0.96839

- The figure shows the mean Accuracy of the Random forest regression which is greater than the Support vector machine algorithm. X axis is Random forest regression vs Support vector machine, Y axis is Mean Accuracy. Error bar is +/- 2 SD

DISCUSSION AND CONCLUSION

- Random Forest Regression achieved higher accuracy (85.4%) compared to Support Vector Machine (81.6%) in predicting insurance cold-call outcomes
- Statistical analysis revealed differences in standard deviation and mean standard error between Random Forest Regression and Support Vector Machine, indicating variability in predictions and model stability
- Independent variable analysis showed a significant difference in accuracy rates between Random Forest Regression and Support Vector Machine, with Random Forest Regression performing better
- The study suggests potential for insurance firms to enhance customer acquisition and profitability through optimized cold-calling techniques and data-driven insights
- Random Forest Regression's alignment with the procedural nature of cold calling enhances its effectiveness, while Support Vector Machine's interpretability may be advantageous in certain scenarios

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