USING MACHINE LEARNING TO ANALYZE AND PREDICT IRELAND'S HOUSING CRISIS

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INTRODUCTION

Ireland is experiencing a severe housing crisis characterized by skyrocketing prices, limited supply, and growing homelessness. Many young adults are unable to leave their parents' homes, with 68% of Irish adults aged 25-29 still living with their parents (Labour Party, 2024). This research applies machine learning to analyze historical housing data and predict future prices for 2025-2026, providing insights for potential homebuyers, policymakers, and developers in navigating this challenging market.

OBJECTIVE

The primary objective of this research is to develop accurate machine learning models that predict house prices in Ireland's major regions for 2025-2026. By analyzing historical price trends and comparing model performance, this study aims to provide actionable insights to stakeholders and evaluate which regions face the steepest projected increases, helping inform both individual decisions and policy responses.

METHODOLOGY

This research combined two complementary datasets: historical housing data from data.gov.ie and more recent transaction data from Kaggle, creating an integrated dataset spanning from 2000 to recent years. Three key features were used for prediction: Year, Area (Dublin, Cork, Galway, Limerick, Waterford, and Other areas), and Property Type (New vs. Second-hand). I developed and compared three machine learning models—Linear Regression, Support Vector Regression (SVR), and Random Forest—each optimized through hyperparameter tuning to ensure maximum predictive accuracy.

RESULTS

ANALYSIS

CONCLUSION

RELATED LITERATURE