

Predictive AI for Identifying Lapse Risk in Life Insurance Policies: Using Machine Learning to Foresee and Mitigate Policyholder Attrition

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Abstract: *Stability and growth in life insurance market an important economic indicators of life insurance lapse poses a critical challenge for insurers, impacting financial stability and policyholder protection. Traditional methods of lapse prediction, often reliant on rule-based or statistical approaches, struggle to adapt to the dynamic and intricate character of consumer conduct. This study investigates the ways in which artificial intelligence and machine learning may be used to anticipate and mitigate policy lapse risks. By leveraging vast historical datasets, ML models can analyze factors such as policyholder demographics, payment history, economic conditions, and policy attributes to provide more accurate predictions. Various supervised learning techniques, including logistic-supported shrubs, promote vector-based technology, statistical regression, and deep learning models such as neural networks, among others, are examined for their effectiveness in risk assessment. Additionally, AI-driven predictive modeling enables insurers to implement proactive strategies, such as personalized policy recommendations, early intervention measures, and targeted customer retention efforts. AI's incorporation into the risk management industry not only enhances operational efficiency but also expands the scope of risk pooling and enables more precise underwriting and claims management. As the industry embraces digital transformation, adopting AI-driven solutions can significantly improve customer satisfaction, optimize risk assessment, and contribute to the long-term sustainability of the life insurance market.*

Keywords: Machine Learning, Life Insurance, Policy Lapsation, Risk Assessment, Predictive Models, Customer Retention

