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# Project Introduction

The insurance industry in Africa is currently underdeveloped, representing just over 1% of insured catastrophe losses worldwide. This project aims to address the key challenges in this sector and understand the insights to the insurance data and to comprehend the factors contributing to the sector’s lack of growth and identify key areas that require more attention. This approach will pave the way for a more robust and developed insurance industry in Africa.

The main issues identified are:

* Affordability
* Lack of insurance knowledge
* Need for effective target marketing.

# Problem Statement

* 1. **Explain**: The insurance industry in Africa is facing a unique set of challenges. Despite the potential for growth, the market penetration is low due to factors such as low average income, high unemployment rate, and lack of understanding about the benefits of insurance.
  2. **Gather**: We aim to collect and analyze data on various aspects such as income levels, unemployment rates, market demographics, and insurance literacy levels across different regions. This will help us understand the current state of the insurance industry and the specific needs of the potential customers.
  3. **Analyse**: Using the gathered data, we will identify patterns and trends that can help
  4. us understand the root causes of the low market penetration. We will also identify potential target markets that can be optimized.
  5. **Deploy**: Based on our analysis, we will develop a tool that addresses the identified issues. This tool will include features like educational resources to improve insurance knowledge, affordability analysis to help customers understand the value, and advanced analytics for effective target marketing.

The problem statement for this project is: “How can we develop a cost-effective insurance product that is easily understandable and caters to the specific needs of the target market in Africa, considering the unique challenges such as affordability, lack of insurance knowledge, and the need for effective target marketing?”

This project will follow the EGAD methodology to ensure a systematic approach to problem-solving, from understanding the problem to deploying a solution. We believe that this approach will enable us to bring significant value to the insurance industry in Africa.

# Project Landscape

**3.1. Project Overview**

* **Industry**: Insurance in Africa
* **Project Name**: Insurance Industry Development in Africa
* **Problem Statement**: Developing a cost-effective insurance product that is easily understandable and caters to the specific needs of the target market in Africa.
* **Goal**:
  + Improve insurance knowledge and understanding among potential customers.
  + Develop an affordable insurance product tailored to the needs of the target market.
  + Identify effective marketing strategies to reach the target market.
* **Challenges**:
  + Affordability of insurance policies
  + Lack of knowledge about insurance among potential customers
  + Need for effective target marketing

**3.2. Data Available**

* **Dataset**: Insurance claims
* **Key Columns**:
  + policy\_bind\_date: Date when the policy comes into effect
  + policy\_csl: Maximum amount an insurer will pay out for a single incident (Combined Single Limits)
  + policy\_annual\_premium: Total amount paid for the policy in a year
  + umbrella\_limit: Additional insurance coverage over the regular policy
  + auto\_make and auto\_model: Information about the vehicle insured
  + insured\_education\_level: Education level of the insured
  + policy\_deductable: Amount paid out of pocket before an insurance provider will pay any expenses
  + insured\_occupation: Occupation of the insured
  + fraud\_reported: Whether a claim was fraudulent or not

**3.3. Knowledge**

* **Team’s Understanding**: Identified main issues in the African insurance sector and potential impact of addressing these issues
* **Data Analysis Models**: Team has knowledge of data analysis models that can be used to solve these problems
* **Interpretation and Decision Making**: Team’s knowledge can help in interpreting the results of the analysis and making informed decisions based on these results

**3.4. Success Metrics**

* Clear metrics to measure the success of the project (e.g., number of users reached, increase in insurance literacy, customer satisfaction, etc.)

**3.5. Tools required**

* Github
* Skyvia
* Trello : Link to Trello <https://trello.com/b/xypRJSgu/insurance-industry-development-in-africa>
* Python using Jupyter notebook
* Excel
* Word document
* Power BI

# Data Insights/ Findings

1. **Average Claim Amount:** The age group of 31-40 has the highest average claim amount per policy.
2. **Client Family Situations:** The largest portion of claims comes from clients who are ‘married’, accounting for 54% of the total.
3. **Average Age of Policies:** The average age of the policies is 38.98 years.
4. **Average Contract Years:** The average contract duration is 17.02 years.
5. **Gender Distribution:** Females represent a slightly larger portion of insurance policyholders than males.
6. **Regional Differences:** Ohio leads in terms of the number of policies opened per year, with a total of 353 policies.

# Implementation plan

1. **Target the 31-40 Age Group**: This age group has the highest average claim amount per policy, suggesting they are more likely to utilize their insurance. Tailor products that cater to the specific needs of this demographic.
2. **Cater to Married Individuals**: As ‘married’ individuals make up the largest portion of claims, offering family packages or benefits for married couples could be an effective strategy.
3. **Consider Gender-Specific Policies**: With females representing a slightly larger portion of policyholders, consider creating policies that cater to women’s specific needs.
4. **Regional Marketing**: Since Ohio has the highest number of policies opened per year, it could be beneficial to increase marketing efforts in this region. Understanding the specific needs and preferences of this region could help in creating more targeted and effective marketing campaigns.
5. **Long-Term Contracts**: With an average contract duration of 17.02 years, we can consider offering benefits or discounts for long-term contracts to attract more customers.

# Future suggestions that could be implemented.

1. **Predictive Modeling**: We can use the data to build a predictive model that forecasts future claims based on factors such as focus area, age group, family situation, gender, and region. This can help in risk assessment and pricing of the policies.
2. **Customer Segmentation**: The data allows for detailed customer segmentation. For example, you can segment customers based on their age, gender, family situation, and focus area of their policies. This can help in targeted marketing and product development.
3. **Churn Analysis**: By analyzing the average contract years, you can predict which customers are likely to renew their policies and which ones are at risk of churn. This can help in developing strategies to retain customers.
4. **Trend Analysis**: The data on the total number of policies under various focus areas and the states that open the most policies per year can be used to identify trends and patterns. This can inform strategic planning and decision making.
5. **Association Rules**: You can use association rule mining to discover interesting relationships between different variables. For example, is there a relationship between the level of education and the number of claims? Or between the state and the focus area of the policies?
6. **Anomaly Detection**: You can use the data to detect anomalies, such as unusually high claims from a particular demographic or region. This can help in fraud detection and risk management.