Cloud Counselage

GIFT A CAREER FOUNDATION

PROJECT REPORT

Data Analytics

Data Driven Insights on Student Success Factors Analysis

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1 PROJECT DETAILS

Project Name	Data Driven Insights on Student Success Factors Analysis		
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Start Date	24-08-2024	**Completion Date**	04-10-2024

2 SUMMARY

This project aimed to analyze key factors influencing students career outcomes, including academic performance, economic background, Python programming experience and leadership skills. By studying the relationship between these variables, the goal was to gain insights into how they shape students expected salaries and overall career competence.

The project was necessary because in a competitive job market, millions of students apply for internships and jobs and recruiters spend minimal time reviewing resumes. Understanding the interplay between academic achievements, extracurricular activities, and economic factors can help both students and institutions optimize for better career outcomes. This project delivers data-driven insights that are crucial for improving student preparation and recruitment strategies.

The long-term benefits include empowering students to make informed decisions about skill-building, providing educational institutions with valuable insights for refining their training programs, and offering recruiters a better understanding of the factors that correlate with student potential. This alignment can improve student employability and bridge the gap between academic qualifications and industry expectations.

3 INTRODUCTION

3.1 Background

In today's highly competitive job market, millions of students apply for internships and full-time positions each year. However, the vast majority of resumes over 70% get rejected in the initial screening process. Recruiters typically spend only 2–3 minutes reviewing each resume, making it crucial for candidates to make a strong first impression.

Despite the importance of a well-crafted resume, many students struggle to align their academic performance, extracurricular participation, and career aspirations with the expectations of the job market. Additionally, there is limited insight into how factors such as a student's economic background, competence, and participation in career-related events influence their expected salary and overall success.

This project was initiated to address these gaps. By analyzing data from student interns, including their academic records, event participation, leadership skills, and family income, the project seeks to provide a clearer understanding of the factors that contribute to career success. This analysis is especially relevant in helping both students and educators prepare for the competitive job market by highlighting the key determinants of employability and expected salary outcomes.

3.2 Stakeholders

The key stakeholders in this project include :

1. **Students :** The primary beneficiaries of this project, students will gain insights into how their academic performance, extracurricular activities, leadership skills, and economic background can impact their future job prospects and salary expectations. This will enable them to better align their personal development and career aspirations with industry requirements.

2. **Educational Institutions :** Universities, colleges, and career counseling departments will benefit from understanding the factors that influence student employability. The findings can help them adjust their training programs, workshops, and guidance to better prepare students for the job market, focusing on areas such as skill development, academic performance, and industry-oriented activities.

3. **Recruiters and Employers :** Employers looking for talent can use these insights to refine their recruitment processes. By understanding the correlations between factors like GPA, leadership skills, and extracurricular activities, recruiters can identify students who are better prepared for industry roles and offer compensation packages that align with students' expectations.

3.3 Objectives

The project's primary objective is to identify the key factors that influence students' career achievements by analyzing their academic, economic, and extracurricular data. Specifically, the project seeks to:

1. **Analyze Patterns of Participation** :
    - Explore how students' participation in career-related events and activities, such as "Art of Resume Building," contributes to their overall development and career readiness.

2. **Examine the Impact of Income on Career Aspirations :**
    - Investigate how students' family income levels affect their expected salary and career goals, determining whether economic background plays a significant role in shaping their career expectations.

3. **Assess the Relationship Between Academic Performance and Expected Earnings :**
    - Study the correlation between students' academic standing (CGPA) and their expected salary, identifying how academic achievement influences career prospects and salary expectations.

4. **Explore the Role of Technical Skills and Leadership :**
    - Analyze how students' Python programming experience and leadership skills contribute to their projected career success and salary expectations.

4 METHODOLOGY

4.1 Considerations & Assumption

To ensure the successful delivery of the project, several key considerations and assumptions were made :

Data Availability: It was assumed that the dataset provided was complete and representative of the student population attending the events. Any missing or incomplete data could limit the depth of insights.

Homogeneity of Events: Since all students attended the same event ("Art of Resume Building"), it was assumed that event participation would not vary, which

meant the analysis focused more on personal and academic factors rather than the diversity of events.

Self-Reported Data: The data related to family income, leadership skills, and expected salary was self-reported by students. It was assumed that this information is accurate, but there might be cases of over- or under-reporting.

Generalization of Findings: The insights drawn from the analysis were based on a specific group of students and may not fully generalize across different demographics, regions, or event types.

Technical Skills Interpretation: Python programming experience was quantified in months, but no further details on proficiency level were provided, so it was assumed that students with more months of experience had greater competency.

4.2 Approach

The approach adopted for this project was a data driven analysis using structured steps to draw meaningful insights from the dataset:

Data Exploration & Cleaning: The dataset was first explored to understand the structure and ensure data integrity. Cleaning involved handling missing values and ensuring consistency across variables.

Correlation Analysis: The relationships between key variables (e.g., CGPA, family income, expected salary) were examined to identify any significant correlations that could provide insights into students' career expectations and achievements.

Pattern Identification: The analysis then focused on identifying patterns in event participation, economic background, academic standing, and technical skills to understand how these factors influence students’ expected earnings and career paths.

Hypothesis-Driven Analysis: The analysis was guided by specific hypotheses, such as whether higher CGPA correlates with higher expected salary or if leadership skills play a role in shaping career aspirations.

4.3 Activities

The following activities were undertaken to deliver the project:

1. **Requirement Gathering**: The first step involved understanding the problem statement, defining objectives, and determining key areas of analysis (e.g., academic performance, expected salary, Python experience).
2. **Data Collection & Preparation**: Data was collected from event participants, and the dataset was then cleaned and prepared for analysis by addressing missing values, standardizing formats, and ensuring accuracy.
3. **Exploratory Data Analysis (EDA)**: An in-depth exploration of the dataset was conducted to understand trends, correlations, and potential outliers in the data.
4. **Analysis & Visualization**: Insights were drawn by analyzing correlations between variables like CGPA, family income, expected salary, and Python experience. Visualizations were created to clearly present findings and patterns in the data.
5. **Report Creation**: The results of the analysis were compiled into a comprehensive report, highlighting key insights and providing recommendations for students, institutions, and recruiters based on the findings.

5 TARGETTED V/S ACHIEVED OUTPUT

Targeted Output:

The project had the following key objectives outlined in the plan:

1. **Identify Key Factors Impacting Career Success**:
    - Explore the relationship between academic performance (CGPA), family income, leadership skills, Python programming experience, and expected salary.
2. **Provide Data-Driven Insights**:
    - Analyze patterns in event participation and student attributes to provide recommendations for students, educators, and recruiters.
3. **Visualize Key Trends**:
    - Create clear and actionable visualizations to showcase how different factors, such as academic standing and economic background, influence career expectations.

4. **Deliver Comprehensive Report**:
    - Provide a detailed report summarizing the findings, actionable insights, and conclusions, backed by data analysis.

Achieved Output:

1. **Identifying Key Factors**:
    - Successfully identified relationships between variables such as CGPA, family income, Python experience, and expected salary. The analysis revealed correlations and patterns that could help students and educators understand the elements influencing career success.
2. **Data-Driven Insights**:
    - Achieved the goal of generating data-driven insights, particularly around how academic performance, technical skills, and economic background impact salary expectations. These insights can inform future student preparation strategies.
3. **Visualizations**:
    - Successfully created visualizations that clearly depict trends, such as the relationship between CGPA and expected salary, the distribution of Python programming experience, and the impact of leadership skills on career aspirations.
4. **Comprehensive Report**:
    - Delivered a thorough report that covered all the objectives outlined. The report includes a summary of findings, insights, and conclusions, with clear visualizations to support the analysis.

Reasons for Deviation:

While the project was mostly aligned with the planned outputs, there were some minor deviations:

1. **Limited Dataset Scope**:
    - The dataset only included information from one event, "Art of Resume Building," which limited the variety of event participation patterns. A more diverse dataset with multiple events might have provided richer insights into student participation and skill development.
2. **Self-Reported Data**:
    - Some variables, such as family income and expected salary, were self-reported by students. This could have led to potential inaccuracies or

inconsistencies, which may have influenced the analysis. More accurate data could refine the insights further.

3. **Limited Diversity in Technical Skills**:
    - The dataset provided limited information on technical skills, focusing primarily on Python experience. Including other technical competencies (e.g., Java, SQL) could have given a more comprehensive view of how various technical skills affect career outcomes.

Lessons Learned:

1. **Data Diversity**:
    - In future projects, ensuring that the dataset captures a broader range of events and skills would provide a more holistic view of the factors influencing student career success.
2. **Data Accuracy**:
    - Self-reported data can introduce biases, so for future projects, it would be beneficial to use validated data sources to minimize inaccuracies.
3. **Enhanced Variable Scope**:
    - Including more variables related to technical skills, internship experience, and extracurricular activities could provide deeper insights into how students can improve their employability.

6 CONCLUSION

The insights derived from this project provide significant value to various stakeholders, including students, educational institutions, recruiters, and career development platforms. By analyzing the relationships between academic performance, economic background, technical skills, and expected salary, the project highlights critical factors that influence students' career success.

For students, the findings serve as a guide to understanding which areas to focus on for improving their employability and meeting industry expectations. Knowledge of how their CGPA, event participation, and technical skills can impact their career prospects empowers students to make informed decisions about their academic and extracurricular involvement.

Educational institutions can leverage the insights to refine their curriculum and career counseling services, aligning their programs with the skills and experiences that are most valued in the job market. This alignment can help better prepare students for future employment opportunities and improve overall graduation outcomes.

For recruiters and employers, the project provides valuable data that can inform their hiring processes. By understanding the correlation between academic and extracurricular achievements and potential job performance, they can enhance their recruitment strategies to identify candidates who are better suited for specific roles.