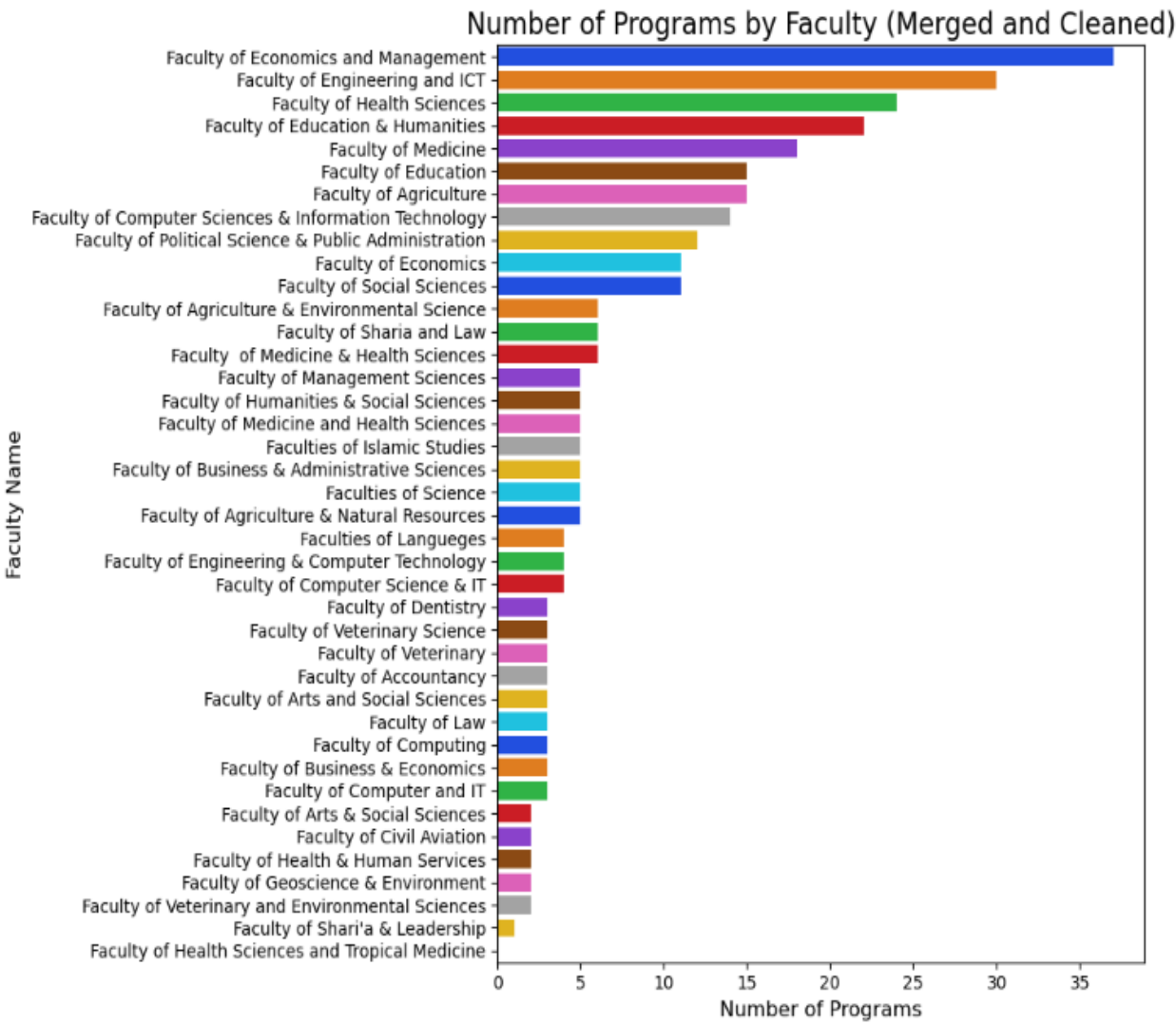


# Comprehensive Analysis: Insights into Program Duration and Tuition Fees Across Universities

This report provides an in-depth analysis of university programs with a focus on two key aspects: *Program Duration* and *Tuition Fees*. By examining the data across different faculties and universities, we uncover important trends and insights that can inform strategic decisions for both institutions and students.

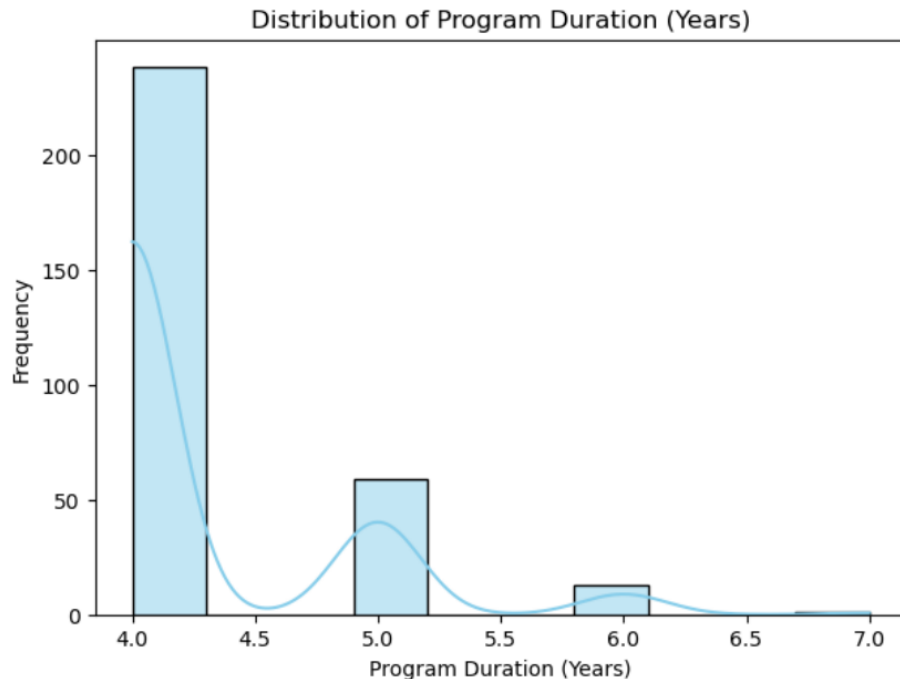
## 1. Number of Programs by Faculty

- The bar chart reveals that the *Faculty of Economics and Management* and the *Faculty of Engineering and ICT* offer the largest number of programs, signaling high demand for fields related to economics, management, and technology. Meanwhile, faculties like *Health Sciences* and *Education* also show strong offerings.
- Key Insight:** Faculties with the highest number of programs are likely responding to market demand for skills in business, management, and technology. Universities can leverage this information to further expand offerings in these high-demand areas while considering innovation in less represented fields.



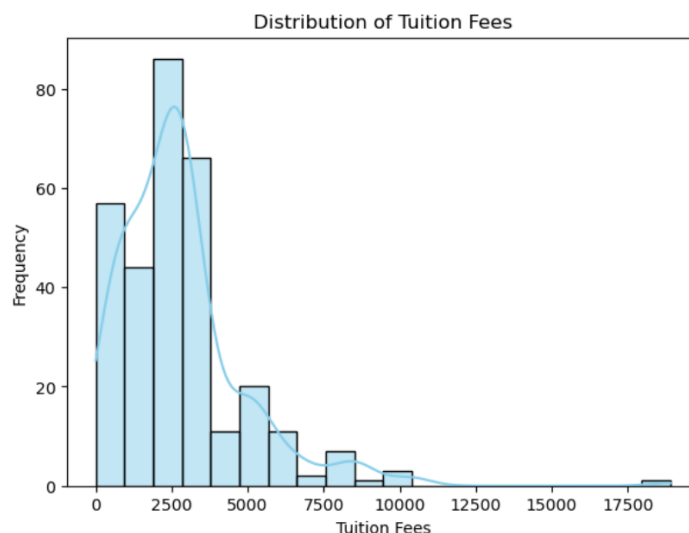
## 2. Distribution of Program Duration

- The histogram demonstrates that most programs last **4 years**, with a few extending to **5 or 6 years**. Only a small fraction of programs exceed these durations, which could be in more specialized fields like *medicine* or *engineering*.
- **Key Insight:** Universities should continue to focus on the typical 4-year structure for most programs, while ensuring that longer programs provide additional value, such as certifications or specialized qualifications, to justify their extended duration.



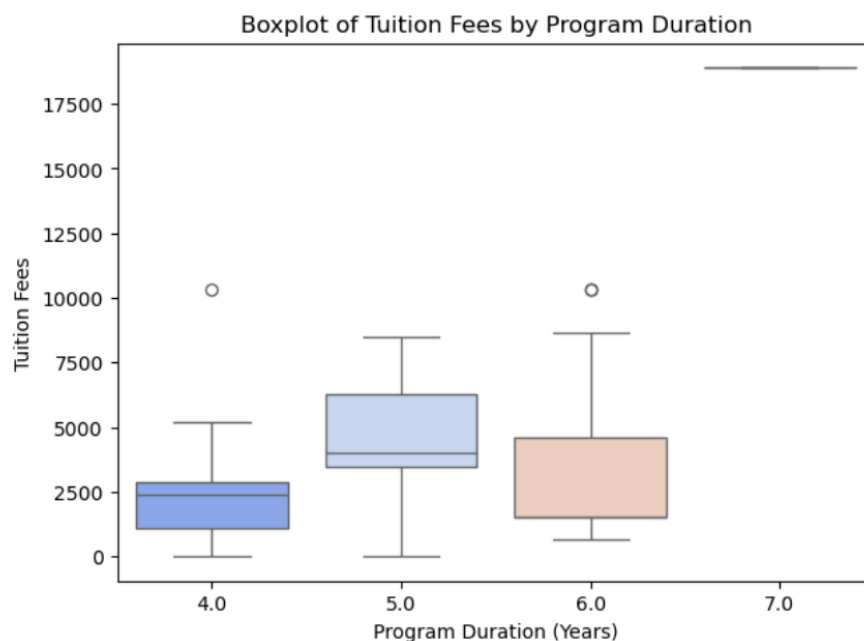
## 3. Distribution of Tuition Fees

- This distribution highlights that the majority of tuition fees range between **\$1,500 and \$3,450**, with a few outliers charging significantly higher fees, up to **\$18,900**. The presence of outliers suggests that certain programs—likely in specialized or elite fields—demand much higher tuition.
- **Key Insight:** While most programs fall within an affordable range, high-fee outliers could reflect programs with premium features. Universities offering such high-cost programs should ensure that these offerings include clear differentiators like exclusive resources, high employability, or advanced credentials.



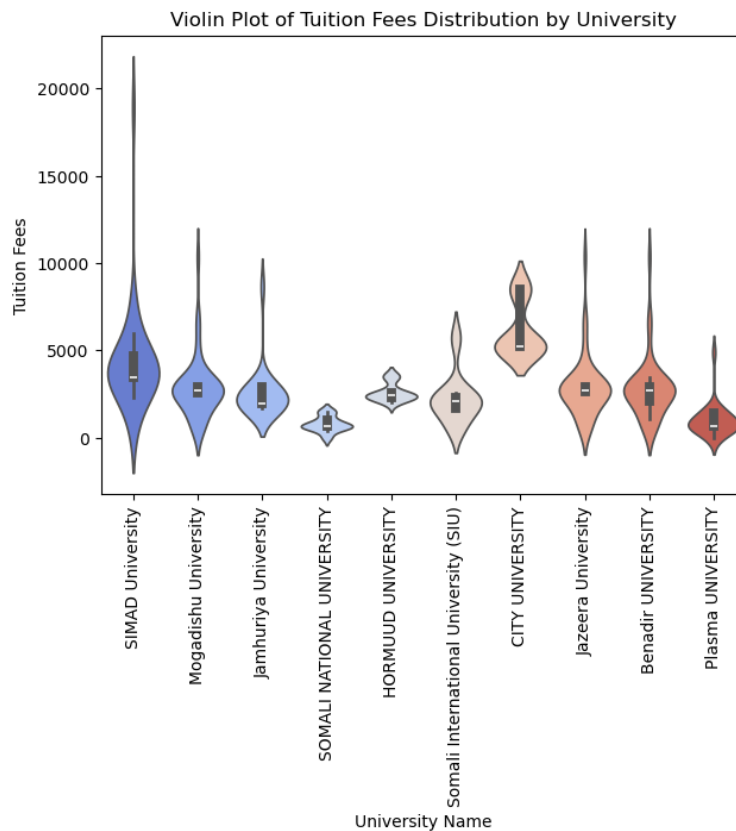
#### 4. Boxplot of Tuition Fees by Program Duration

- This boxplot indicates that longer programs (e.g., **5 to 7 years**) tend to have significantly higher tuition fees, with some outliers showing extreme costs. Conversely, **4-year programs** tend to have a more consistent and lower range of fees.
- **Key Insight:** There is a clear upward trend in tuition fees for longer programs. Institutions could offer financial aid packages or payment plans for students in extended-duration programs, especially in fields like *medicine* or *engineering*, to alleviate financial burden and attract top talent.



#### 5. Violin Plot of Tuition Fees Distribution by University

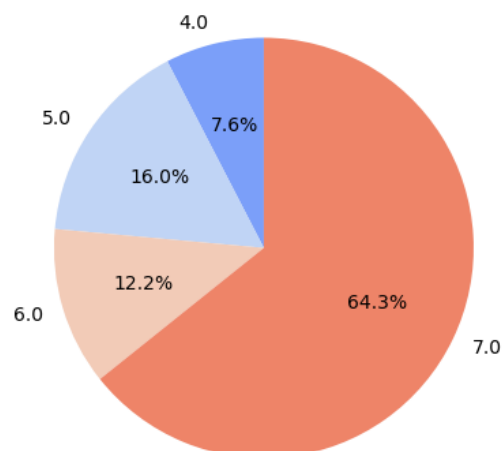
- The violin plot reveals substantial variation in tuition fees between universities. *SIMAD University* shows the broadest range of fees, with several high-end programs, while others, like *Mogadishu University* and *Jamhuriya University*, offer more consistent and affordable fee structures.
- **Key Insight:** Universities with a broad range of tuition fees, like *SIMAD*, might attract a more diverse student population, offering both affordable and high-end programs. Marketing strategies should highlight this versatility to appeal to a wider audience, from cost-conscious students to those seeking premium educational experiences.



## 6. Proportion of Tuition Fees by Program Duration

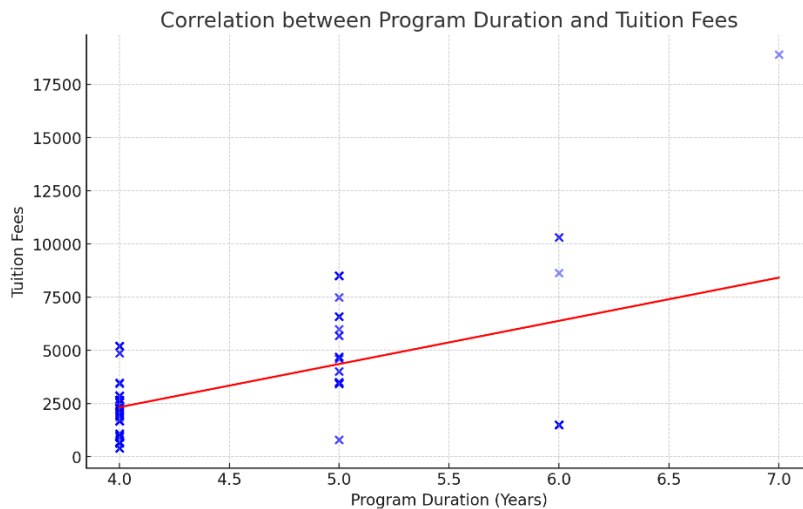
- The pie chart shows that **64.3%** of tuition fees come from **7-year programs**, despite these programs being relatively few in number. Meanwhile, **4-year programs**—which dominate in terms of frequency—contribute a much smaller portion of overall tuition income.
- Key Insight:** Long-duration programs contribute disproportionately to tuition revenue. Universities could explore expanding these higher-revenue programs while also enhancing accessibility to shorter programs to maintain a balanced portfolio of offerings.

Proportion of Tuition Fees by Program Duration



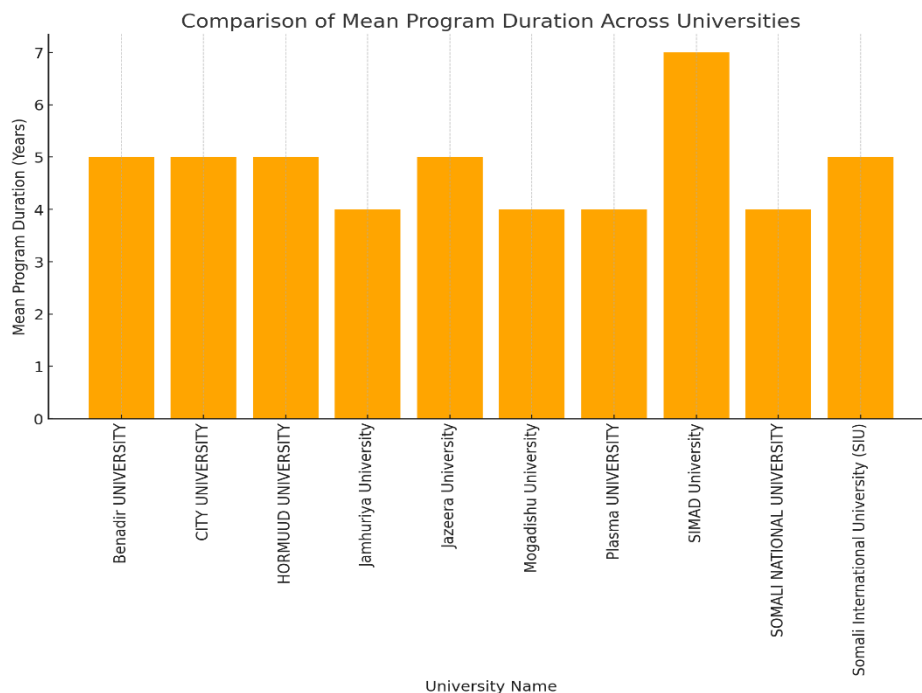
## 7. Correlation Between Program Duration and Tuition Fees

- The scatter plot confirms a positive correlation between program duration and tuition fees, with fees increasing as programs get longer. This trend is expected, as extended programs generally require more resources and time from both students and faculty.
- Key Insight:** Prospective students and universities alike should be aware that while longer programs come with higher costs, they often result in more specialized degrees, which can lead to greater long-term career benefits. Highlighting this return on investment in university marketing could appeal to students looking for long-term career advancement.



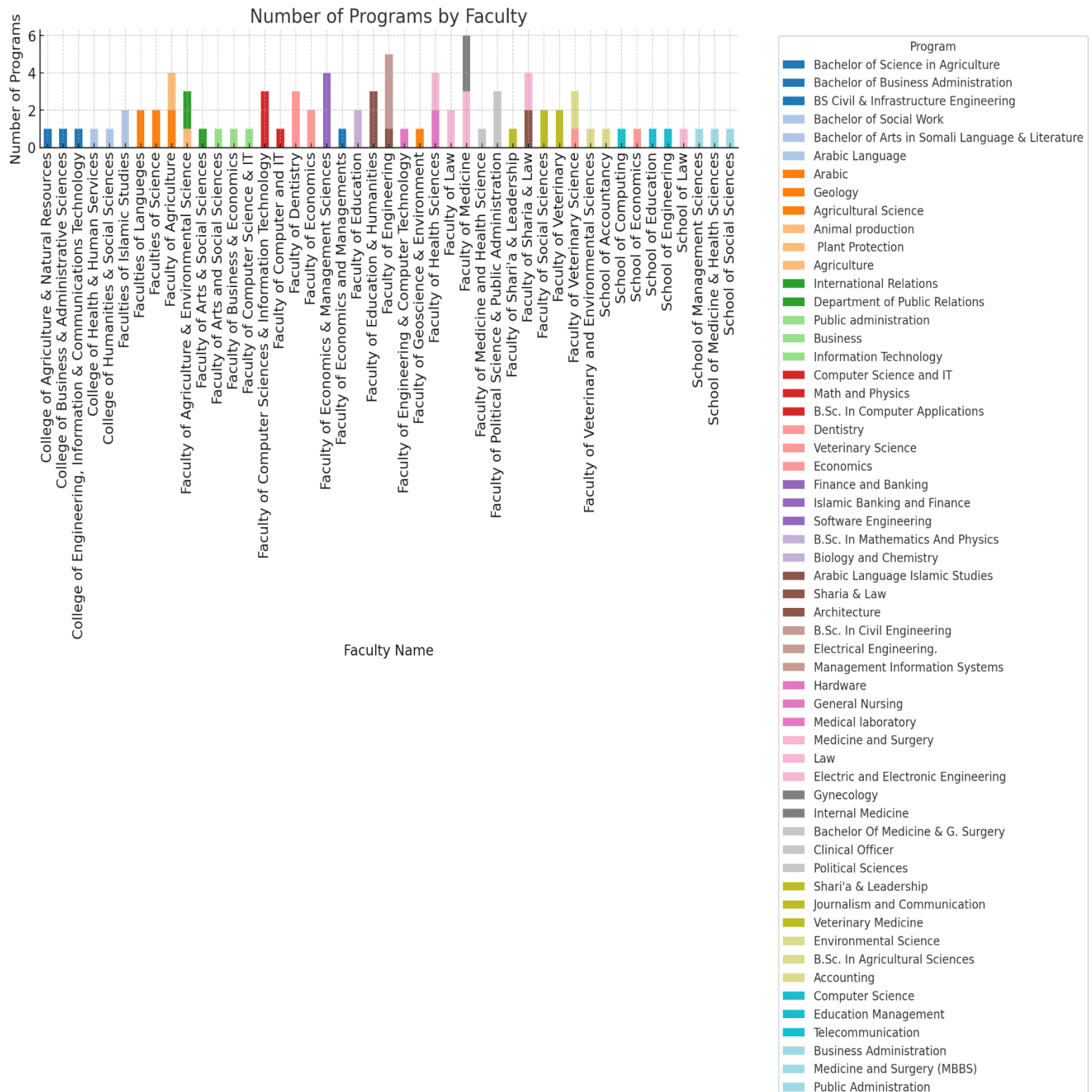
## 8. Comparison of Mean Program Duration Across Universities

- This bar chart illustrates that *SIMAD University* offers the longest programs on average, exceeding **7 years**, while universities like *Plasma* and *Mogadishu* hover around **4-5 years**.
- Key Insight:** The variation in program durations across universities suggests different institutional strategies and areas of focus. Institutions with longer program durations may be specializing in fields that require deeper academic investment, such as medical or advanced technical fields, while others focus on more streamlined, undergraduate-focused curricula.



## 9. Detailed Breakdown of Programs by Faculty

- A detailed breakdown of programs across faculties underscores the dominance of fields like *Engineering*, *ICT*, and *Business*, while niche areas such as *Islamic Studies* or *Languages* offer fewer programs.
- Key Insight:** While large faculties like *Economics* and *ICT* command the majority of program offerings, niche faculties provide opportunities for specialization and unique educational experiences. Universities should maintain a balance between expanding popular programs and supporting niche fields that could offer future growth opportunities.



## Final Insights:

This analysis highlights key trends in both program duration and tuition fees across universities. The findings suggest that:

1. **Economics, Business, and ICT** programs dominate, reflecting market demand.
2. Most programs last **4 years**, but specialized fields with longer durations drive higher tuition fees.
3. Universities with broad tuition ranges attract diverse student populations and can position themselves as flexible institutions catering to both budget-conscious and premium-seeking students.
4. A positive correlation exists between program length and cost, but students in longer programs might achieve higher career returns, making the higher investment worthwhile.

**For universities**, these insights can drive more informed decisions regarding program expansion, fee structuring, and financial aid policies. **For students**, understanding these trends can help guide more strategic decisions when choosing programs that align with both their career ambitions and financial resources.