**What is the Engineering Majors Survey?**

**2.7**

**UNIVERSITIES**

**7,197**

**ENGINEERING STUDENTS**

The Engineering Majors Survey is a longitudinal research project looking at which educational environments/ experiences influence engineering students’ innovation and entrepreneurial interests, abilities, and achievements.

**Focal Respondents**

Respondents indicated pursuing one of 39 unique engineering majors. A total of 2,500 respondents were pursuing concentrations within those majors. Respondents were also asked to write-in any minors or certificates pursued in order to generate a complete picture of students’ academic programs.

**Percentage of respondents pursuing a certificate, minor, or concentration**

Among these certificates, minors, and concentrations, we identified those that are related to business. A total of 486 engineering students (6.8% of the sample) were participating in business concentrations, minors, or certificates.

**Business program participation by engineering major**

The most popular fields of study within the flagged programs are business (20.2%), economics (17.3%), business administration (14.8%), and management (11.3%).

**Extracurricular Involvement**

**Leading or starting clubs and organizations**

<table>
<thead>
<tr>
<th>Business Flagged</th>
<th>Not Flagged</th>
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<tbody>
<tr>
<td>Number of students that led a student organization</td>
<td>Number of students that started or co-founded a student club or other student group on campus</td>
</tr>
<tr>
<td>171</td>
<td>1577</td>
</tr>
<tr>
<td>36.90%</td>
<td>25.10%</td>
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<tr>
<td>&lt; .001</td>
<td>&lt; .001</td>
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**Participation in clubs and organizations**

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<tr>
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<tbody>
<tr>
<td>Number of students that participated in a business or entrepreneurship club</td>
<td>Number of students that participated in a community service-based club</td>
</tr>
<tr>
<td>89</td>
<td>136</td>
</tr>
<tr>
<td>19.20%</td>
<td>29.40%</td>
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<td>.001</td>
<td>0.006</td>
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</table>

**Breakdown of Business Programs**

Concentrations, minors, and certificates were grouped into the following business-related areas based on write-in popularity:

- Technology
- Supply Chain Management
- Operations
- Business Administration
- Management
- Leadership
- Analytics
- Finance
- Global Business
- Entrepreneurship
- Construction Management
- Environment
- Economics
- Human Resources
- Management
- Supply Chain
- Management
- Business
- Engineering
- Aerospace
- Chemical
- Civil
- Electrical
- Materials
- Mechanical
- Electrical
- Mechanical
- Other Engineering

**Career Goals**

The Career Goals-Innovative Work scale is composed of six items asking how important it is for the respondent to be involved in the following job or work activities in the first five years after graduation.

1. Searching out new technologies, processes, techniques, and/or product ideas
2. Generating creative ideas
3. Promoting and championing ideas to others
4. Investigating and securing resources needed to implement new ideas
5. Developing plans and schedules for the implementation of new ideas
6. Selling a product or service in the marketplace

<table>
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<tr>
<th>Business Flagged</th>
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<tbody>
<tr>
<td>Career Goals-Innovative Work</td>
<td>Mean</td>
</tr>
<tr>
<td>Mean</td>
<td>2.7</td>
</tr>
<tr>
<td>SD</td>
<td>2.5</td>
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<tr>
<td>0.8</td>
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<td>p-value</td>
<td>0.001</td>
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The scale ranges from 0 (Not important) to 4 (Extremely important). Exploratory factor analysis results suggest that the six items loaded on one factor. The scale of Career Goals-Innovative Work was calculated by taking the average of the six items.

**Discussion**

The findings suggest that engineering students participating in Innovation & Entrepreneurship programs—business-focused programs in particular—in fact are more inclined than are other engineering students to found, lead, and participate in clubs and organizations, as well as pursue post-graduation careers characterized by a high degree of innovative behaviors. Although the absolute percentage of engineering students enrolled in business-related minors, concentrations, and certificates is small, these findings are suggestive in terms of the potential impact of such programs on student development.

**Acknowledgements**

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