

Example report on synthetic data

This synthetic dataset represents responses to a survey to assess the current needs and use of statisticians and software engineers across the university. As to date, 27 participants have responded representing affiliations with 21 schools or centers across the university.

With regards to statistical needs, respondents indicated that they needed assistance with 9 areas of statistics. The following table displays these areas along with the number of respondents who indicated this need.

Table 1: Statistical Methodology in Need

Statistical Methodology	N
Data Visualization	11
Preparing The Raw Data For Analysis	10
Model Interpretation	9
Preparation Of Statistical Grant Materials	9
Coding/Software Help	5
Model Selection And Specification	4
Research Design	4
Other	1
Simulation	1

A similar investigation of needs pertaining to Software Engineering was conducted. Respondents indicated that they needed assistance with 8 areas of software engineering. The following table displays these areas along with the number of respondents who indicated this need.

Table 2: Software Engineering in Need

Software Engineering	N
Containerization And Cloud Computing	9
Mechanical Turk	9
Python Or R Package Building	7
Database	5
Software Refactoring	5
Web Development	5
Web Front-end	4
Spark & Hadoop	1

The following table displays the severity of needs for statistical and software help. As shown below, 5 respondents indicated that statistical help was a critical need. Similarly, 7 indicated that software help was a critical need.

Table 3: Severity of Needs

	Statistical Methodology	Software Engineering
Critical to research	5	7
Greatly help	12	11
Moderately help	10	7
Slightly help	12	13
Not at all	11	5
Unspecified	7	5

In order to better understand the extent of these needs, respondents were asked to indicate the number of full time equivalent (FTE) personnel that they could potentially currently support, and the number they needed to satisfy their research needs across their projects. The following table presents the research needs we observed. We observed that among our sample of 27 respondents, a total of 60.9% of needs were currently met for statistical methodology, and a total of 90.6% of needs were currently met for software engineering.

Table 4: Gap Between Statistical FTE Needed and FTE Potentially Supported

	Needed	Potentially Supported	Gap	% Potentially Supported
Statistical Methodology	16.00	9.75	6.25	60.9%
Software Engineering	13.25	12.00	1.25	90.6%

The following two tables display respondents opinions on their ability to support their statistical methodology needs through their grants, and whether they would feel comfortable contracting statistical services from a university pool. Of 27 participants in the survey, 16 indicated that they needed help supporting or locating skilled individuals to meet their statistical needs, and 12 indicated that they needed help supporting or locating skilled individuals to meet their software needs.

Table 5: Supporting Needs Through Grants

	Statistical Methodology	Software Engineering
I don't need to hire anyone to help with statistical methodology	3	2
It is usually possible for me to hire the personnel needed to satisfy my needs through grants on my own.	4	9
I would usually be able to support the level of effort that I need through grants, but it is difficult to hire skilled people given the duration of contracts and/or level of effort I require.	7	5
Usually I can only partially support the level of effort that I need through grants (even if hiring wasn't an obstacle).	6	4
It is unlikely that I could support any of my needs through grants.	3	3

Similarly, 15 respondents indicated interest in contracting a statistical methodologist through a university pool, and 13 respondents indicated interest in contracting a software engineer through a university pool.

Table 6: Contracting Services from a University Pool

	Statistical Methodology	Software Engineering
I do not need any of these services.	3	3
I am skeptical of an arrangement where I didn't hire the person myself.	5	7
I would consider contracting such services as long as there is someone that is a good fit for my needs.	12	8
I would be happy to contract these services through a university pool.	3	5

When asked about how they currently access statistical methodology or software engineering help, 8 respondents indicated that they currently seek statistical consultation from outside the university. The places from where these consultations were solicited included NYU's competitors (e.g., Harvard, Illinois, Columbia) as well as online and consulting companies. With regards to software engineering, respondents indicated that they currently seek consultation from outside the university. The places from where these consultations were solicited included hiring independent developers.

Furthermore, 12 respondents indicated that the reason they needed help with statistical methodology was to implement innovative methods that could help push forward their research in ways they currently were unable to do themselves. 12 respondents indicated that the reason they needed help with software engineering was to implement innovative methods that could help push forward their research in ways they currently were unable to do themselves.

Testimonials

"This is a decoy comment."