My First LaTeX Document

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1 Sociology?

Why would you ever study sociology?

- I have no idea
- Do you?

Why would you ever study mathematics?

1. What is mathematics?
2. Mathe...what??

1.1 Tables and Figures

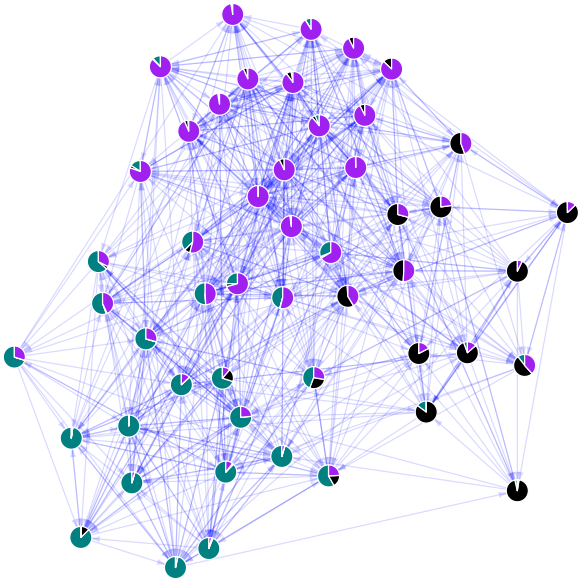
Table 1 shows some fancy regression results. Nothing is significantly different from zero.

Table 1: Fancy Regression Results

coef.	s.e.	p
Why	would	you
ever	study	sociology?

Network plots like those in Figure 1 look super fancy, but are often misleading.

Figure 1: Some Fancy Network



2 Conclusion

The expected value of a continuous random variable X is $E[X] = \int_{-\infty}^{\infty} x f_X(x) dx$, given that it admits a density function f_X. Suppose X has a standard normal distribution. Then it's density function is given as

$$f_X(x; \mu, \sigma^2) = \frac{1}{\sqrt{2\pi\sigma^2}} e^{-\frac{1}{2\sigma^2}(x-\mu)^2}. \tag{1}$$

The expected value of the OLS estimator is

$$\begin{aligned} E[\hat{\beta}] &= E[(X'X)X'y] \\ &= (X'X)X'E[X\beta + \epsilon] \\ &= (X'X)X'X\beta + E[\epsilon] \\ &= \beta. \end{aligned}$$

Hence, it is unbiased.

Good luck with LaTeX!