# Multiple Choice Question Analysis

To determine which option does NOT affect the ability to generalize survey results to all dormitory students, I need to evaluate each option in terms of sampling methodology and potential biases.

## Option (A): Five thousand students live in dormitories on campus. A random sample of only 500 were sent the survey.

This factor does NOT affect generalizability. The sample size of 500 from a population of 5,000 represents 10% of the dormitory population, which is a substantial proportion. More importantly, the key phrase here is "random sample," which indicates proper probability sampling. With random sampling, we can make valid statistical inferences about the population regardless of the specific sample size (though larger samples provide more precision). As long as the sample was truly randomly selected, this approach maintains external validity.

## Option (B): The survey was sent to only first-year students.

This significantly affects generalizability. Sampling only first-year students introduces coverage bias, as it systematically excludes sophomores, juniors, seniors, and graduate students who may have different room preferences based on their experiences and stage in college life. This creates a non-representative sample that cannot be generalized to the entire dormitory population.

## Option (C): Of the 500 students who were sent the survey, only 160 responded.

This affects generalizability due to nonresponse bias. The 32% response rate (160/500) means that 68% of the sampled students did not provide their preferences. If students who responded differ systematically from those who didn't (e.g., those with stronger opinions about housing might be more likely to respond), the results will be biased and not generalizable to all dormitory students.

## Option (D): Of the 500 students who were sent the survey, only 160 responded.

This is identical to option (C), which appears to be a duplicate option in the question.

## Conclusion:

The answer is (A) - the fact that only 500 out of 5,000 dormitory students were sampled does NOT affect generalizability, provided that the sample was truly random. All other options introduce potential biases that would prevent generalizing results to the entire dormitory student population.