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Learn By Doing Activity

Scenario: New Software Versions

A local internet service provider (ISP) created two new versions of its software, with alternative ways of implementing a new feature. To find the product that would lead to the highest satisfaction among customers, the ISP conducted an experiment comparing users' preferences for the two new versions versus the existing software.

The ISP ideally wants to find out which of the three software products causes the highest user satisfaction. It has identified three major potential lurking variables that might affect user satisfaction—gender, age, and hours per week of computer use.

The dataset contains the values of the three possible lurking variables:

- age: in years
- gender: female or male
- comp: hours per week of computer use

The ISP randomly selects 450 subjects and assigns them to treatment groups, one for each of the three versions of the ISP's software.

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1/1 point (graded)

Suppose that instead of randomly assigning treatments, the software users could choose one of the three themselves (thus making this an observational study instead of an experiment).

Which is the most worrisome lurking variable if older users tend to choose the existing software and to have a high level of satisfaction with any product?

☒ age ✓

☐ gender

☐ comp

Answer

Correct:

Indeed, in this scenario we'll never be able to know whether the high level of satisfaction with the current product is because users really like it, or because of the age of those who choose to use it, because older people will tend to choose it, and they usually have a high level of satisfaction of any product.

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Which is the most worrisome lurking variable if one new software has a very technical-sounding name, which often appeals to males, and males tend to have a high level of satisfaction with any product.

☐ age

☒ gender ✓

☐ comp

Answer

Correct:

Indeed, in this scenario, we'll never be able to know whether the high level of satisfaction with the new software is because users really like it, or because of the gender of those who choose to use it, because males will tend to use this software due to its very technical name, and males also usually have high levels of satisfaction.

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Which is the most worrisome lurking variable if people who spend the most time at the computer are likely to choose the new software with a very technical-sounding name, and they tend to have a low level of satisfaction with any product?

☐ age

☐ gender

☒ comp ✓

Answer

Correct:

Indeed, in this scenario, we'll never know whether the low level of satisfaction with this new software is because users really did not like it, or because those who choose it spend a lot of time on the computer, because people who tend to spend a lot of time on the computer will tend to choose this software due to its name, and those people also tend to have low levels of satisfaction.

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