



Statistics How To

Dependent Events and Independent Events

When two events are dependent events, one event influences the probability of another event. A dependent event is an event that **relies on another event** to happen first. Dependent events in probability are no different from dependent events in real life: If you want to attend a concert, it might depend on whether you get overtime at work; if you want to visit family out of the country next month, it depends on whether you can get a passport in time. More formally, we say that when two events are dependent, the occurrence of one event influences the *probability* of another event.

Simple examples of dependent events:

- Not paying your power bill on time and having your power cut off.
- Being the first person to enter a movie theater and finding a good seat.
- Buying a lottery ticket every day for 100 days and winning the lottery.
The more tickets you buy, the greater your odds of winning.

What is an Independent Event?

An independent event is an event that has no connection to another event's chances of happening (or not happening). In other words, the event has no effect on the probability of another event occurring.

Independent events in probability are no different from independent events in real life. Where you work (usually) has no effect on what color car you drive. Buying a lottery ticket has no effect on having a child with blue eyes.

When two events are independent, one event does not influence the probability of another event.

Simple examples of *independent* events:

- Owning a dog and having an aunt named Matilda.
- Taking a cab home and finding your favorite movie on cable.
- Buying a lottery ticket and finding a penny on the floor (your odds of finding a penny does not depend on your having bought a lottery ticket).

Stephanie Glen. "Dependent Events and Independent Events" From **StatisticsHowTo.com**: Elementary Statistics for the rest of us!

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