Belt or String, Which Is Better?

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We wanted to determine whether belt-driven linear slides or string-driven linear slides were faster with various rpm motors. This would help in our primary goal of having the most efficient linear slide system for our competition robot for the First Tech Challenge (FTC). In order to do this we got a four-stage string-driven linear slide kit and a four-stage belt-driven linear slide kit from GoBilda. We then built each system and used alligator clips to power them using a 12-volt battery. Each system had a claw attached to it in order to grab and hold onto cones. We then timed how long each system took to fully extend with a cone. We then repeated this step using a 312, 435, and 1150 rpm motor. During our testing, we thought that there would be little to no difference in the speeds of the linear slides but in the end, the belt-driven slides were faster than the string-driven slides by a fair amount.

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