

# Workers are less productive and make more typos in the afternoon—especially on Fridays

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If there's one thing most office workers can agree on, it's that they tend to feel less productive toward the end of the day and the end of each work week. Now, a team of researchers at Texas A&M University has

found objective evidence of this phenomenon in action.

A recent interdisciplinary study at the Texas A&M School of Public Health used a novel method of data collection to show that employees really are less active and more prone to mistakes on afternoons and Fridays, with Friday afternoon representing the lowest point of worker productivity.

The study, published in a recent issue of *PLOS ONE*, was authored by Drs. Taehyun Roh and Nishat Tasnim Hasan from the Department of Epidemiology and Biostatistics, along with Drs. Chukwuemeka Esomonu, Joseph Hendricks and Mark Benden from the Department of Environmental and Occupational Health, and graduate student Anisha Aggarwal from the Department of Health Behavior.

The researchers looked at the computer usage metrics of 789 in-office employees at a large energy company in Texas over a two-year period—January 1, 2017, to December 31, 2018.

"Most [studies of worker productivity](#) use employee self-reports, supervisory evaluations or wearable technology, but these can be subjective and invasive," said Benden, professor and head of the Department of Environmental and Occupational Health. "Instead, we used computer usage metrics—things like typing speed, typing errors and mouse activity—to get objective, noninvasive data on computer work patterns."

The team then compared computer usage patterns across different days of the week and times of the day to see what kinds of patterns emerged.

"We found that [computer use](#) increased during the week, then dropped significantly on Fridays," said Roh, assistant professor in the Department of Epidemiology and Biostatistics. "People typed more words and had

more mouse movement, mouse clicks and scrolls every day from Monday through Thursday, then less of this activity on Friday."

In addition, Roh said, computer use decreased every afternoon, and especially on Friday afternoons.

"Employees were less active in the afternoons and made more typos in the afternoons—especially on Fridays," he said. "This aligns with [similar findings](#) that the number of tasks workers complete increases steadily from Monday through Wednesday, then decreases on Thursday and Friday."

What is the takeaway for employers? To start, flexible work arrangements, such as hybrid work or a four-day work week, may lead to happier and more productive employees.

As of May 2023, about [60 percent of full-time, paid workers](#) in the United States worked entirely on-site. The remainder either worked remotely or had a hybrid arrangement that involved a combination of remote and on-site work. In addition, many employees have a compressed workweek in which they work longer hours, but on fewer days.

"[Other studies](#) have found that those who work from home or work fewer days have less stress from commuting, workplace politics and other factors, and thus have more [job satisfaction](#)," Benden said. "[These arrangements](#) give workers more time with their families and thus reduce work-family conflicts, and also give them more time for exercise and leisure activities, which have been shown to improve both physical and mental health."

Not only that, but flexible work arrangements could boost the bottom line in other ways, such as reductions in electricity use, carbon footprint

and [carbon dioxide emissions](#).

"And now," Benden said, "the findings from our study can further help [business leaders](#) as they identify strategies to optimize work performance and workplace sustainability."

**More information:** Taehyun Roh et al, Examining workweek variations in computer usage patterns: An application of ergonomic monitoring software, *PLOS ONE* (2023). [DOI: 10.1371/journal.pone.0287976](#)

Provided by Texas A&M University

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