

# The Effect of Two Types of Workload Assignment on Productivity, Performance, and Stress

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## ABSTRACT

The importance of employees within a firm has led to an increased need in maximizing performance and productivity, while also minimizing the stress levels of employees. This study provides insight into two types of workload assignment of (1) receiving a task *all at once*, or (2) receiving a task *broken up*. It investigates how matching subjects' workload assignment preference (WAP) can impact performance, productivity, and stress levels. The results showed that there was an even split in workload assignment preference across the population, and that employees who received a task based on their preferred type of workload assignment improved in performance and productivity, while having decreased stress levels. This shows that employees' workload assignment preference can be used to more properly assign tasks to each employee which can lead to increased performance and productivity, and decreased stress levels.

- H<sub>1</sub>:** Matching an individual's WAP has an influence on *performance*.
- H<sub>2</sub>:** Matching an individual's WAP preference has an influence on *productivity*.
- H<sub>3</sub>:** Matching an individual's WAP preference has an influence on *stress*.

## METHOD

To test these hypotheses, 96 students from a Midwestern university were recruited to participate in this study using the Koraleski Commerce and Applied Behavior Lab. In total, 48 male and 53 female subjects participated in this study, and one participant identified as non-binary.

1. Participants were first asked about a scenario in which they were to be assigned a project.
  - They had two options to choose from which indirectly asked them if they wanted to receive the project (1) all at once, or (2) broken up by week.
2. Participants were then randomly assigned to complete one of the following tasks:
  - (A) typing out a series of five paragraphs in five minutes.
  - (B) typing out a series of five paragraphs one at a time every one minute.
  - (C) alphabetizing five sets of ten words in five minutes.
  - (D) alphabetizing five sets of ten words one at a time every one minute.
3. They then completed a second task that was the opposite of the first task they did. For example, if a participant completed the typing task all at once first (A), they then did the alphabetizing task broken up (D).

Four Types of Task Options in Study

Task	Workload Assignment Type	
	All at Once	Broken Up
Typing	A	B
Alphabetizing	C	D

## RESEARCH

**Performance** was measured based on the alphabetizing and typing tasks described earlier. On the typing tasks, performance was measured based on the error rate calculated by summing the number of misspelled words, missing words, incorrect punctuation, missing punctuation, and incorrect capitalization. On the alphabetizing tasks, performance was also based on the error rate calculated by summing the number of words incorrectly alphabetized.

For the results of these two activities to be compared with each other, the results of each had to be placed on the same scale. To accomplish this, participants were placed on a standard competition ranking scale for each activity. Then the participants' rankings were split up into two categories: (1) ranking when the task was based on their actual workload assignment preference, and (2) ranking when task was based on the opposite of their actual workload assignment preference.

**Productivity** was measured on the typing task based on summing the total number of characters left once time ran out on the task. On the alphabetizing tasks, productivity was calculated by summing the number of words not yet alphabetized once time ran out on the task.

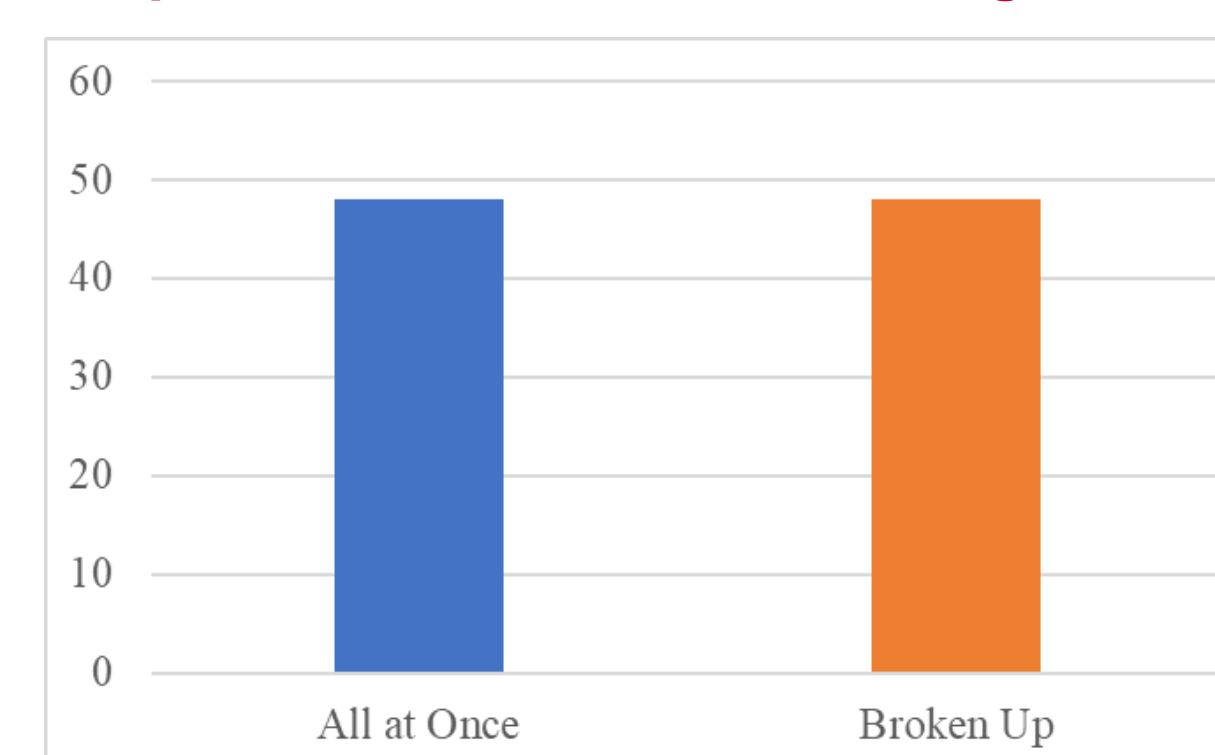
For the results of these two activities to be compared with each other, the results of each had to be placed on the same scale. To accomplish this, participants were again placed on a standard competition ranking scale the same way it was done to measure performance.

**Stress** was measured on three occasions during the study. The first measurement was to gauge a participant's base stress levels as an individual comparison standard. The second time stress was measured was conducted after the first task, and the third time stress was measured was conducted after the second task.

Combining the results from the second and third measures of stress, two data sets were created for (1) stress levels when the task was based on participants' actual workload assignment preferences, and (2) stress levels when the task was based on the opposite of participants' actual workload assignment preferences. In the test, the base stress levels were compared with (1) stress levels when the task was based on participants' actual preferences.

## RESULTS

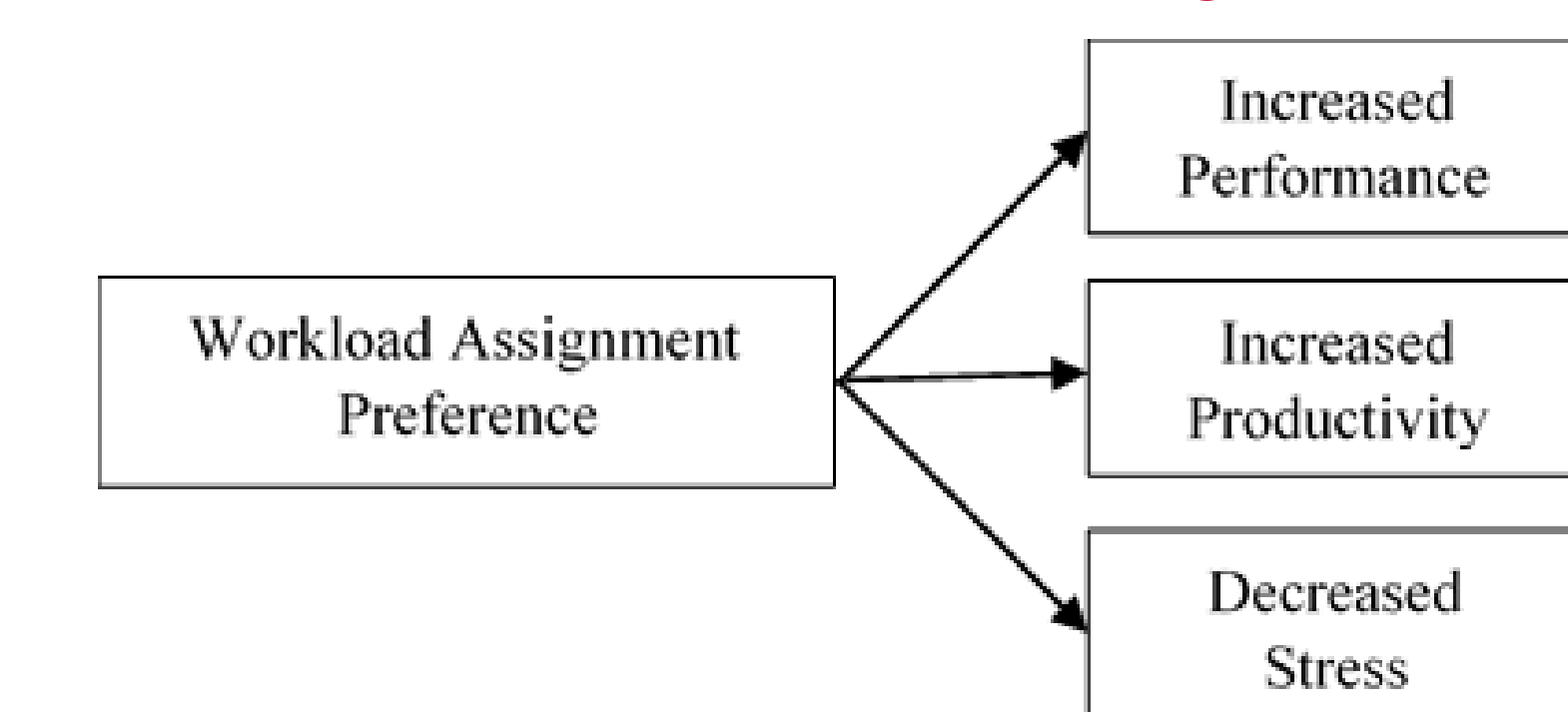
Population Split in Actual Workload Assignment Preference



There was an even split in the population for workload assignment preference (48 all at once and 48 broken up). Knowing that the population has different workload assignment preferences makes the outcomes of performance, productivity, and stress even more important.

## RESULTS

Population Split in Actual Workload Assignment Preference



- When participants received a task based on their workload assignment preference:
- There was an increase in performance of 11.5 units on average.
  - There was an increase in productivity of 7 units on average.
  - There was a decrease in stress for 48% of participants (25% saw no change in stress levels from starting stress levels).

- H<sub>1</sub> is supported:** Matching an individual's WAP showed an influence on *performance*.
- H<sub>2</sub> is supported:** Matching an individual's WAP showed an influence on *productivity*.
- H<sub>3</sub> is supported:** Matching an individual's WAP showed an influence on *stress*.

## CONCLUSION & FUTURE DIRECTIONS

**Employees who receive a task based on their preferred type of workload assignment improved in performance and productivity, while having decreased stress levels.**

Future research:

- Actual physiological responses to tasks should be measured based on workload assignment preference for more accurate results on stress levels.
- The effect of workload assignment preference on job satisfaction and employee motivation should be studied.

## REFERENCES

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