

Are We Sending The Signals Right? Boundary Conditions Of Workload Signaling In Warehouse Operations

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The effects of organizational workload on individual work speed have been receiving considerable attention in the Behavioral Operations Management literature. Still, there remains limited understanding of the role of workload signaling in such operational contexts. Drawing on Goal-Setting Theory and Signaling Theory, we develop relevant hypotheses for warehouse order-picking environments. To test these, we conducted a field experiment involving 449 order pickers across two grocery retail warehouses (one treatment, one control) and 4,568,444 picks. Using a mixed-effects econometric model with a difference-in-differences design, we estimate the effects of alternative workload signaling configurations. Results show that workload signaling moderates the relationship between remaining workload and work speed, with the strength of this effect contingent on signaling frequency and individual baseline productivity. Infrequent signaling (e.g., once or twice per shift) weakens the alignment between workload and speed, whereas frequent signaling strengthens it. Moreover, signaling effects are positive for lower-performing workers but negative (i.e., dysfunctional) for higher-performing workers, who already regulate their work speed effectively. These findings delineate boundary conditions for effective workload signaling and offer guidance for managers seeking to design signaling regimes that leverage workload dynamics in labor-intensive warehouse operations while mitigating unintended consequences.