Optimal Staffing Model for NAVSUP Warehouse Operations

NAVAL POSTGRADUATE SCHOOL

Abstract

Our research explores the development of a staffing model for Naval Supply Systems Command (NAVSUP) warehouse operations. NAVSUP currently lacks formalized manpower staffing standards for key warehouse functions and instead relies on staffing decisions based on annual financial constraints, which results in ad hoc, potentially sub-optimal staffing levels. Our study develops a staffing model based on workload analyses and time studies for key warehouse operations such as receiving, stowing, picking, packing, shipping, and inventory management with the aim to establish clear workload standards and accurate staffing projections. The model can be used to refine current staffing practices at NAVSUP Fleet Logistics Centers (FLCs) as well as to identify opportunities for technology integration. Our research enables NAVSUP to establish accurate staffing levels to meet operational demands, improve efficiency, and support decision-making for future warehouse operations.

Methods

Data Collection via Time Study → Performance Normalization → Throughput Integration → Workload Calculation → Staffing Requirement

- **Scope**: Four core warehouse functions—Receipt to Stow, Issue, Inventory, and Small Parcel Label Creation using FACTS—observed at **NAVSUP FLC Lemoore.**

- **Time Study**: Observed and timed tasks under ideal operating conditions to generate data.

- **Performance Normalization**: Applied performance ratings (skill, effort) using the Westinghouse method.

- **Throughput Integration**: CY24 monthly line-item data from NAVSUP FLC HQ used to determine task frequency.

- **Workload & Staffing**: Calculated total workload per process, divided by adjusted available labor hours (based on a 60% utilization rate) to estimate staff requirements.

Results & Recommendations

Based on data collection and approach used, we estimated staff requirements, and formulated recommendations.

NAVSUP
NAVAL SUPPLY SYSTEMS COMMAND
FLEET LOGISTICS CENTER
SAN DIEGO

Minimum Required Staff (NAVSUP FLC Lemoore)

Issue + Receipt to Stow	7
Inventory Count	1
Inventory Management	1
Small Parcel Label Creation	1

Recommendation	Purpose/Impact
Replicate study at other FLCs	Validate scalability
Standardize SOPs	Enable consistent implementation
Integrate motion studies	Optimize workflow
Shift to dynamic modeling	Predict staffing under variable demand

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