

# A Study on Replenishment Policies for Two-echelon Inventory Systems with Deteriorating Items

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## ABSTRACT

The TFT-LCD industry is capital and technology-intensive, and it faces a fast-changing environment. As a result, 24-hour, continuous manufacturing process is usually adopted. Affected by the recent financial tsunami, the case company is confronted by the problem of excess manpower and decided to adjust the shift pattern. It is known that rotating work shift usually causes employee adaptation difficulty, physically and psychologically, and leads to work dissatisfaction and life adaptation problems. This research studies how the change of shift pattern from “three on, one off” to “two on, two off” affects work adaptation and performance of shift operators.

In the conducted survey, 375 copies of questionnaires were issued. 315 copies were collected as valid, which gives a valid response rate of 91.83%. Independent samples t-test, single factor variation analysis, and multiple hierarchical regression analysis were performed. Major findings are shown as follows:

1. There is a significant difference in individual properties with respect to work adaptation after shift work change.
2. There is no significant difference in individual properties with respect to work performance after shift work change.
3. There is a positive correlation between work adaptation and performance after shift work change. In addition, work adaptation has higher predictive power to performance. Therefore, improving work adaptation of operators after shift work change is top priority.

Keyword: Shift Work, Work Adaptation, Job Performance, TFT-LCD factory