



## Spring 2025 Sr. Design Project Spotlight

# Chick-fil-A

## Project Title: Labor Productivity and Break Compliance



Student team, from left: (seated) Chanakarn Boonmuen, Alyssa Fields, Yusuf Roshan, (standing) Joseph Hernandez  
Others standing are Chick-fil-A team members

### Scope of Project

This project is aimed at improving Chick-fil-A's labor scheduling process, specifically for the evening shift. The SJSU ISE team explored how to minimize Labor costs while complying with the California state Labor laws and maintaining excellent customer service. Additionally, the team is working to balance the assignment of 8-hour and 5.5-hour shifts among team members.

### Process Overview

To achieve these objectives, the SJSU ISE team has observed Chick-fil-A's operations, analyzed sales and labor data, and applied statistical methods to assess store performance. The key metrics collected from Chick-fil-A's IT systems included:

- Customer count per hour
- Sales data
- Employee productivity rates

### Measure Stage Findings

During the Measure Stage, the team conducted six key types of data analysis

- **Sales and Labor Correlation Analysis:** The team examined how factors such as the number of customers served, sandwiches and fries produced, and employee shifts, correlated to sales per hour and average Labor cost helping to identify relationships between staffing levels and production rates.

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## Chick-fil-A Sr. Design Project, cont.

- **Queue Analysis** showed low utilization of personnel (sometimes as low as 13.33%), and order queuing is as low as 0.824%. Therefore, team felt that the system is efficient and is capable of handling more transactions without a degradation in customer service.
- **Statistical Analysis** (Multifactor ANOVA) was conducted. The team found that both time of the day and day of the week seem to have a significant impact on the transaction volumes. However, the time of the day presents a slightly stronger impact.
- **Control Charts**, including I-MR and X-bar R charts, to analyze impact of over-scheduling and variability on the speed of service. Insights from these charts will help fine-tune planning for staffing demands.
- **Regression analysis** was used to improve the forecasting of staffing requirements. There is significant day-to-day variation in sales, with Saturdays being highest volume. The regression model provided a base in terms of improvement choices while staffing.
- **Pareto Analysis** indicated overscheduling and callouts to be the key areas for improvement. Under scheduling was not observed.

During the Improve Phase of the project, different strategies have been improvised to enhance the efficiency of scheduling, despite certain areas still required for improvement. It can be concluded that more data should be collected, especially callouts over an extended period. This will further improve the accuracy and reliability of upcoming analyses.

### Survey

We have just finished the Analyze phase. Nearly all the data that we need has been collected. The only data that is missing are surveys we sent out. As stated above, frequent callouts are an issue and the team is trying to determine why employees call out so frequently. We have sent a survey to the employees to determine if working conditions are causing the callouts.

**This project is due to be completed in May, 2025.**