

## The Relationship between Food and Labor Expense, Profit Margin, and Customer Satisfaction within University Union Foodservice Operations in Korea

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**ABSTRACT** The purpose of this study was to develop an effective cost control model for university foodservice operations by analyzing student satisfaction, as well as foodservice income statements for operational characteristics. The specific objectives were to examine the satisfaction of students for various foodservice quality dimensions, to determine the financial activities performed in foodservice operations by operational type, to examine their income statement data, and lastly, to compare the student satisfaction for foodservice quality with the financial data of the income statements. A total of 545 students from one university answered a satisfaction survey. The one-year income statements of three union foodservices (self-operated, small-scale contracted, and large-scale contracted) at the same university were analyzed. The results showed that the self-operated union foodservice had lower student satisfaction scores and higher food and labor cost ratios. The small-scale contract management foodservice data indicated the highest student satisfaction scores and the lowest food and labor cost ratios. The large-scale contract management foodservice data showed medium scores when comparing the three union foodservice operations. Overall, by comparing the satisfaction scores and operational profits, the small-scale union foodservices showed the highest satisfaction scores and profit.

**KEYWORDS:** *satisfaction, income statement, profit, cost control, union foodservices*

### INTRODUCTION

Today, even an institutional foodservice needs a substantial amount of capital to finance its operations, and current foodservice managers recognize the importance of financial management for sound operating decisions (1). The greatest challenge to college and university foodservice managers is controlling increased food and labor costs within a fixed budget (2). College and university foodservice directors have to address the following issues: competition, fiscal accountability, student expectations, nutritional guidelines, and government intervention (3). However, through the 1990s, college and university foodservice entities competed with off-campus operations (4). Recently, many students are requiring take-out and event menus (5). Also, many foodservice operations in Korea have changed their management type from self-operated to contract management (6).

The main roles of foodservice managers encompass two factors: providing the necessary profits for organizations, and providing the right quality for customer satisfaction. Foodservice directors working in the student market continue to face the responsibility of doing more with less (7).

The purpose of this study was to develop an effective cost control model for university foodservices by analyzing student satisfaction as well as foodservice income statements for operational characteristics. The specific objectives were to examine the satisfaction of students for various foodservice quality dimensions, to determine the financial activities performed within foodservice operations by operational type, to examine their income statement data, and finally, to compare the student satisfaction for foodservice quality with the financial data of the income statements.

### MEHTODS

The literature was reviewed to identify student satisfaction data for college and university foodservice operations, as well as operational data. For the quality dimensions, six-hundred students within one university were asked to complete a survey using a questionnaire developed for this

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**Table 1.** Relation of foodservice quality factors and students' satisfaction by operational type

| Union foodservices | Factors | Foodservice quality | Convenience     | Approaching | Satisfaction ranks |
|--------------------|---------|---------------------|-----------------|-------------|--------------------|
| A                  |         | -                   | + <sup>1)</sup> | +           | 3                  |
| B                  |         | +                   | +               | -           | 1                  |
| C                  |         | ±                   | +               | ±           | 2                  |

<sup>1)</sup>+: high satisfaction, -: low satisfaction, ±: medium satisfaction

research. For the operational dimensions, the one-year income statements of three union foodservices (self-operated, small-scale contracted, and large-scale contracted) at the same university were analyzed. The SPSS program was used for the data analysis.

## RESULTS AND DISCUSSION

A total of 545 university students responded to the satisfaction survey. The results indicate that approximately 79% of the responding students used union foodservices for lunch, due to their convenience, price, and sanitation. Factor analysis showed differentiation among three factors: foodservice quality, convenience, and accessibility. Through linear regression analysis, these three factors were found to have significant impacts on the customer satisfaction within

the operations, in the order of: B (small-scale contracted) > C (large-scale contracted) > A (self-operated) (Table 1).

Table 2 shows the results for the operational management practices by management type. The self-operated foodservice (A) and small-scale contract foodservice (B) provided meals at breakfast, lunch, and dinner, but no snacks. The large-scale contract management foodservice (C) offered all meals except breakfast. At lunch time, the self-operated foodservice (A) had the highest student numbers with the lowest average customer check.

Table 3 shows the cost control practices performed by the foodservice managers according to operational management type. The self-operated foodservice (A) manager considered food cost control first, but the contract management foodservice (B,C) managers considered it last. The reason for this is that the food cost was decided by the contract management companies for B and C, rather than the center managers. For food cost control, the self-operated foodservice (A) manager primarily used lower priced foods, whereas the contract foodservice (B,C) managers controlled inventory first. For labor cost control, the self-operated (A) and large-scale contract foodservice (C) managers first increased the proportion of part-time employees. However, the small-scale contract foodservice (B) manager primarily used more machines.

**Table 2.** Operational management practices of union foodservices

| Union foodservices                   | Item      | A B C           |       |       |
|--------------------------------------|-----------|-----------------|-------|-------|
|                                      |           | A               | B     | C     |
| Providing meal time                  | Breakfast | ● <sup>1)</sup> | ●     | ○     |
|                                      | Lunch     | ●               | ●     | ●     |
|                                      | Dinner    | ●               | ●     | ●     |
|                                      | Snacks    | ○               | ○     | ●     |
| No. of menus                         | Breakfast | 3               | 1     | -     |
|                                      | Lunch     | 3               | 2     | 2     |
|                                      | Dinner    | 2               | 2     | 1     |
|                                      | Snacks    | -               | -     | 3     |
| No. of side-menus (including kimchi) | Breakfast | 2               | 3     | -     |
|                                      | Lunch     | 2               | 3     | 3     |
|                                      | Dinner    | 2               | 3     | 3     |
|                                      | Snacks    | -               | -     | 1     |
| No. of using students                | Breakfast | 500             | 95    | -     |
|                                      | Lunch     | 2,000           | 875   | 800   |
|                                      | Dinner    | 500             | 605   | 200   |
|                                      | Snacks    | -               | -     | 60    |
| Average customer check (won)         | Breakfast | 1,000           | 1,500 | -     |
|                                      | Lunch     | 1,250           | 2,000 | 1,500 |
|                                      | Dinner    | 1,250           | 1,800 | 1,500 |
|                                      | Snacks    | -               | -     | 1,300 |

<sup>1)</sup>●: Yes ○: No

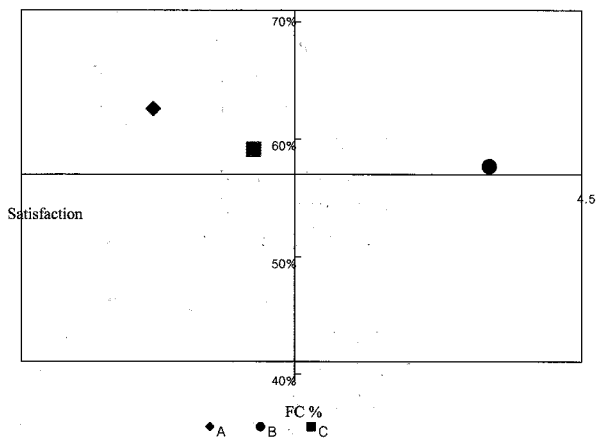
**Table 3.** Ranks of considering factors for cost control

| Union foodservices         | Item                        | A B C |   |   |
|----------------------------|-----------------------------|-------|---|---|
|                            |                             | A     | B | C |
| Cost control factors       | Food cost control           | 1     | 4 | 4 |
|                            | Labor cost control          | 2     | 1 | 3 |
|                            | Operating cost control      | 3     | 3 | 2 |
|                            | Energy cost control         | 4     | 2 | 1 |
| Food cost control factors  | Use substitute foods        | 2     | 5 | 5 |
|                            | Use lower priced foods      | 1     | 2 | 4 |
|                            | Reduce garnishes            | 5     | 4 | 3 |
|                            | Inventory control           | 3     | 1 | 1 |
|                            | Reduce portion amounts      | 6     | 6 | 6 |
|                            | Reduce waste amounts        | 4     | 3 | 2 |
| Labor cost control factors | Increase part-timer         | 1     | 4 | 1 |
|                            | Use more machines           | 3     | 1 | 4 |
|                            | Simplify production works   | 2     | 2 | 2 |
|                            | Use more pre-prepared foods | 4     | 3 | 3 |

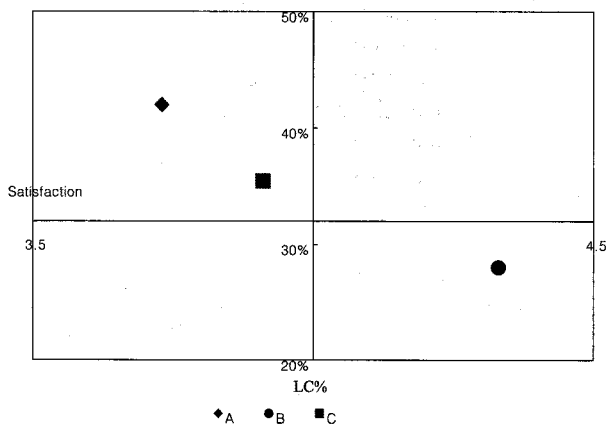
**Table 4.** Cost ratios by union foodservices

| Costratios (%) <sup>1)</sup> | Union foodservices |      |       |
|------------------------------|--------------------|------|-------|
|                              | A                  | B    | C     |
| Food costs                   | 63.0               | 58.0 | 59.0  |
| Labor costs                  | 42.0               | 28.0 | 35.0  |
| Operating costs              | 5.0                | 18.0 | 17.0  |
| Profits                      | -9.0               | -4.0 | -11.0 |

<sup>1)</sup>Periods: 2000-2001



**Fig. 1.** Relation of students' satisfaction and food cost percentage.

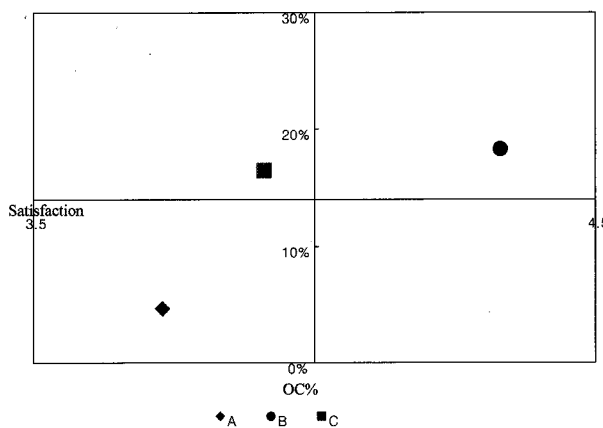


**Fig. 2.** Relation of students' satisfaction and labor cost percentage.

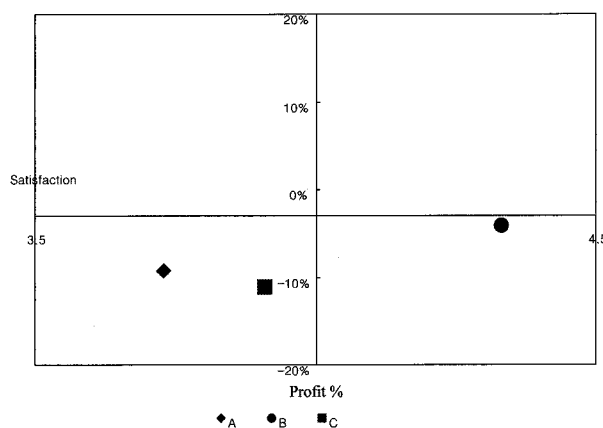
Regardless of the operational management type, all the foodservice managers considered work simplification secondly, using a work analysis.

According to the income statement analysis (Table 4), the self-operated foodservice (A) had the highest food cost and labor cost percentages. The large-scale contract management foodservice (C) had the lowest operating cost percentages and profits.

To determine the relationship between the quality and operational dimensions (Fig. 1 thru Fig. 4), the student



**Fig. 3.** Relation of students' satisfaction and operating cost percentage.



**Fig. 4.** Relation of students' satisfaction and profit percentage.

satisfaction and financial data were analyzed. The self-operated foodservice (A) had lower student satisfaction, higher food and labor cost ratios, a lower operating cost ratio, and lower profits. The small-scale contract management foodservice (B) had higher student satisfaction, higher food and operating cost ratios, a lower labor cost ratio, and lower profits. The large-scale contract management foodservice (C) had lower student satisfaction; higher food, labor, and operating cost ratios; and lower profits.

Based on the data, it is recommended that the self-operated foodservice manager focus on reducing the food and labor cost ratios to improve profits. The small-scale contract foodservice manager should attempt to decrease the labor cost and operating cost ratios to improve profits. Lastly, the large-scale contract foodservice manager should primarily focus on increasing student satisfaction to improve profits and the cost ratio.

### CONCLUSION

The results of this research indicate that the self-operated union foodservice had lower student satisfaction scores and

higher food and labor cost ratios. The small-scale contract management foodservice had the highest student satisfaction scores and the lowest food and labor cost ratios. The large-scale contract management foodservice had medium scores when comparing the three foodservice operations. Finally, by comparing the satisfaction scores and operational profits, the small-scale union foodservice showed the highest satisfaction scores and profit.

The factors that influence the effective cost control of university union foodservice operations include the characteristics of the university, student satisfaction, labor cost control techniques, food cost control techniques, and the dietitian manager's financial management competency. Therefore, these results suggest that cost control helps operations achieve profits and provide good quality service to students.

This study could be used to compare the cost management roles of business managers and foodservice directors. A future study will examine the differences and possible ways to improve the cost control management models of college and university foodservices.

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