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Research on the Relationship Between Customer Satisfaction and Compensation Plan in U.S Airline Industry

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ABSTRACT
Preceding analyses of the effect of customer satisfaction, a specific aspect of nonfinancial measures, have suggested a positive relationship between customer satisfaction and financial performance of a company, while the effect of the investments of companies on customer satisfaction remain veiled. In order to seek the relationships between several types of investments and customer satisfaction, this paper combines data gathering of customer satisfaction, along with those expenses and compensation plans that may influence the level of customer satisfaction, from several airlines of the United States, and the analysis of data is based on mathematical modeling. Research shows that direct investment on customer service has a significant relationship with customer satisfaction. However, indirect investments, the compensation plans, can significantly influence customer satisfaction only if compensation plans are enjoyed by executives. The incentive plan facing employees does not have significantly correlation with customer satisfaction. These relationships may be considered in future studies of overinvestment or underinvestment on customer satisfaction, or in the practice of company operation.

Keywords: *Customer satisfaction, Compensation plan, Incentive plan, Airline industry*

1. INTRODUCTION

Many firms including those in the Fortune 500 (Stivers et al. 1998) view nonfinancial measures, such as customer satisfaction, as being important[1]. This importance is due to nonfinancial performance measures having been shown to be useful indicators for future financial performance in a short period of time (Behn and Riley 1999) [2] and the value of the firm in the long run (Riley et al. 2003) [3]. Since these nonfinancial performance metrics are tied to the achievements of firms' strategic goals, in order to improve the nonfinancial metrics, except from direct investment, compensation plans are also quite common. On one hand, the boards of companies are willing to encourage top executives, by implementing CEO compensation that includes nonfinancial performance measures, on the other hand, some companies also take general staffs' effects into consideration, encouraging them to focus on nonfinancial performance by introducing incentive plan which facing all employees.

Are all compensation plans work? Using time-series data from several airline companies that implemented an incentive system based on nonfinancial performance measures, this study provides empirical evidence on one research question: What kind of compensation plan have positive influence on companies' nonfinancial performance? CEO compensation for executives, incentive plan facing general staffs, or both?

After controlling for fixed effect, we report noteworthy results below:

CEO compensation has positive influence on companies' nonfinancial performance while incentive plan not. In other word, there are existing different feedbacks on the motivation of employees at different levels when facing the problem of improving companies' nonfinancial performance.

The paper organizes the rest of the article as follows. Next, by doing the literature review, the theoretical framework for the study and develops the key hypotheses is provided. After describing the data, the research provides the analysis and results of the study. For the last part, a discussion of the results and their managerial implications and offer some concluding remarks are illustrated.

2. LITERATURE REVIEW

Nonfinancial performance measures tied to business targets are intangible assets in companies and act as a road map guiding companies to achieve higher level of financial performance. With nonfinancial performance measurements, investors can have a better sense of the company's overall performance, since nonfinancial indicators usually reflect realms of intangible value (Ittner and Larcker 2003) [4]. Also, nonfinancial performance measurements can be valuable for detecting fraud risk because it is difficult to conceal the manipulation of nonfinancial performance measurements, since the verification of nonfinancial performance is often straightforward (Brazel et al 2009) [5]. According to Stivers et al (1998), a poll was conducted and 92.9% respondents rated customer satisfaction highly important. That's why customer satisfaction is a research object that related to nonfinancial performance measurements in this paper.

The research of Banker et al (2000) analyzes field-based data from 18 managed properties of a hotel chain that revised its old managerial incentive compensation plan based mainly on financial measures to a new plan that includes nonfinancial performance measurements [6]. The research concludes that customer satisfaction associated more with long-term rather than immediate financial performance. Nonfinancial performance measurements, like customer satisfaction, appear to be useful in predicting quarterly revenues, expenses, and operating income (Behn & Riley 1999). Customer satisfaction is one of the leading indicators of customer purchase behavior, growth in the number of customers, and accounting performance (Ittner and Larcker 1998b) [7]. With all that said, customer satisfaction is a significant nonfinancial factor for the development of the company.

Based on the importance of customer satisfaction, the boards intend to implement compensation plan include customer satisfaction to encourage managers to satisfy customers. Prior papers have shown that companies had motivated CEOs to satisfy customers by carrying out compensation plans. For example, in hotel industry, nonfinancial performance improves following the implementation of the compensation plan which includes customer satisfaction, since CEOs are more likely to get higher compensation with better nonfinancial performance (Banker et al 2000). According to Basurov et al (2014), A CEO's total compensation package consists of several parts: base salary, bonus, stock option grants and restricted stock grants [8]. The objective of incentive payment, which includes bonus, stock options and restricted stock grants, is to tie the CEOs' interests to long-term shareholders' wealth and the strategies to achieve this.

Even though companies implement compensation plan to encourage CEOs to satisfy customers, top managers do not get appropriate payment based on their contribution to customer satisfaction. Most boards are short-sighted and underappreciate CEOs' contribution to the customer satisfaction (Huang & Trusov 2020) [9]. On the other hand, if boards give more incentive strategies on it, CEOs will strive for better customer satisfaction and the strategic goal will be translated down to employees (McNair et al 1990) [10], and thus spending time and capital on customer satisfaction.

Although motiving CEOs to attach importance on customer satisfaction should lead to improvements in related metrics, it is not clear whether these investments are cost-beneficial. Ittner and Larcker (2003) analyze the relations between customer satisfaction measures and future financial performance. In their study, they find that after reaching a certain level, customer satisfaction remains stable, and there are diminishing returns at relatively high satisfaction levels. Similarly, Ho et al (2006) finds that the relationship between revenue and customer satisfaction is increasing and convex [11]. Therefore, the research question occurs: What kind of compensation plan have positive influence on companies' nonfinancial performance? CEO compensation for executives, incentive plan facing general staffs, or both?

This research focuses on airline industry. Since large proportion of business in airline industry is from repeat customers, customer satisfaction is a crucial aspect in airline industry. In airline industry nonfinancial performance is associated with financial performance and it is a useful indicator in predicting future financial performance in short-term (Behn and Riley 1999). This study was extended in the next few years. In airline insustry, nonfinancial performance, such as customer satisfaction, is useful in predicting the value of firms in the long term(Riley et al 2003). Therefore, nonfinancial performance is valued by firms, and managers in this industry think highly of customer satisfaction.

To seek relevance between the compensation plan, and ultimate profitability, our research builds the following logic chain. Banker et al. (2000) reveals that the financial compensation plan which includes non-financial performance measures results in improvements on level of customer satisfaction. Meanwhile, CEOs tend to invest more for higher pay package on increasing customer satisfaction, which consequently leads to either a forthcoming loss, or profit, according to Huang & Trusov (2020). In addition, the strategic goal of customer satisfaction will be translated down to employees (McNair et al 1990). Thus, the first hypothesis should be that:

Incentive plans based on customer satisfaction may ensure a constant growth of profitability if the manager's investment is below a certain level.

3. MODEL AND VARIABLE DESIGNS

3.1 Compensation Plan Model

We examine the H1 by using the following regression model:

$$\text{Customer Satisfaction Index} = \alpha_0 + \alpha_1 \text{CusExp} + \alpha_2 \text{EmpWages} + \alpha_3 \text{IncenPlan} + \alpha_4 \text{CEOCompen} + \varepsilon$$

3.2 Variables Developments

3.2.1 Dependent Variable - CSI

Customer satisfaction is defined as meeting customer expectations (McNair et al 1990). For customer satisfaction index (CSI), the American Customer Satisfaction Index (ACSI) is used. The ACSI develops a cause-effect model to calculate customer satisfaction, including customer expectations, perceived quality, and perceived value, customer complaints and customer loyalty which includes customer retention and price tolerance.

3.2.2Independent Variables

CusExp is the ratio of investment in customer to total operating expense. The assumption of our research is that the investment in customer satisfaction can be quantified by related expenses in financial statements. We choose costs related to customers' intuitionistic feelings, such as maintenance of cabin environment, services directly occurred on customers, as the indictors of the investment in customer services. These events can reflect customers' very intuitionistic feelings which influence customer satisfaction, and thus the expenses coming from these events are considered to be proper indicators of investment on customer satisfaction.

EmpWages measures the total wages paid to employees and acts as a control variable. Operating expenses may increase over time because of inflation. Therefore, to control changes on operating expense due to inflation, we use EmpWages as a control variable.

IncenPlan is a dummy variable that starts equaling 1 if the firm implements a new incentive plan includes customer satisfaction. **CEOCompen** is a dummy variable that starts equaling 1 if the customer satisfaction is mentioned in the executive compensation.

For the United airlines, in 2000, some changes were made to compensation program, and these changes included customer satisfaction. Therefore, these two dummy variables from the year of 2000 are equaled 1.

For the Southwest airlines, the managers received bonus because an implementation of a new Customer boarding method which reduced waiting time and increased customer satisfaction(Behn and Riley 1999) in 2007. The Compensation Committee took into account the executive contributions to the customer service in 2009. Therefore, IncenPlan from the year of 2009 and CEOCompen from the year of 2007 are equaled 1

For the American airlines, the 2008 annual incentive plan mentions the payment of awards in the event certain financial and/or customer service metrics are satisfied. Therefore, these two dummy variables from the year of 2008 are equaled 1.

For the Delta airlines, operational goals were met related to on-time flight arrivals, flight completion factor and customer satisfaction/baggage handling in 2008, and thus these two dummy variables from the year of 2008 are equaled 1.

4. DATA SOURCE

The data represents the investment cost that relates to customer satisfaction like passenger service fee, aircraft fuel fee, and passenger commissions and other fees from year 2000 to 2020 of Delta Airline, American Airline, Southwest Airline and United Airline. These data is collected from the annual filings (10-K) from the official website of the four airline companies. Incentive plans and compensation plans of these four companies are gathered from annual meeting reports (DEF-14A) in the website of EDGAR (sec.gov). The customer satisfaction index is from ASCI.

4.1 Description Summary

Table 1 details the Customer Expense, Customer Satisfaction, Employee Wages, Incentive Plan and CEO Compensation of the four companies with means, standard deviation, minima, and maxima. The CusExp is less than half of the operating expense. On average, the companies change their IncenPlan and CEOCompen frequently, but not every single year.

Table 1. Descriptive statistics

	N	Mean	SD	Min	Max
CusExp	84	0.437	0.165	0.128	0.651
CusSat	84	68.179	7.168	56	81
EmpWages	84	6729.643	2717.706	1302	12609
IncenPlan	84	0.702	0.46	0	1
CEOCompen	84	0.667	0.474	0	1

5. MODEL RESULTS AND ANALYSIS

5.1 Compensation Plan Model Results

Results from estimating customer satisfaction are presented in Table 2. As predicted, the coefficient of CusExp is 27.050 and is significant at the 0.01 levels. Therefore, changes in customer expenses have a significant positive effect on changes in customer satisfaction suggesting that as the percentage of direct investment in customer service increases, customer satisfaction rate increases as well. Similarly, changes in CEO compensation also have a significant positive effect on changes in customer satisfaction, indicating that the incentive mechanism for executives effectively improves nonfinancial performance of the company. In contrast, changes in incentive plan which is facing to general staffs are negatively correlated with changes in customer satisfaction, which is significant at the 0.01 levels. This finding suggests that in terms of customer satisfaction, the investment in employees is not getting the desired output. The adjusted R2 and F statistic for the model are 0.40 and 24.36, respectively, indicating that the model appears to reasonably explain changes in customer satisfaction as proxied by directed investment toward customer service and incentive mechanism for employees at different level.

Since model 1 is the original model, in model 2, we eliminate the influence of control variable and do the regression again, verifying if the result is robust. As described in Table 2 under the Model 2 caption, the result is exactly the same as model 1, proving the robustness of our model.

Table 2. Customer Satisfaction Model Regression of Variables on Customer Service Investment

Variable	CusSat	
	Model 1	Model 2
CusExp	27.050*** (3.989)	26.718*** (4.059)
IncenPlan	-6.297*** (1.323)	-5.750*** (1.248)
CEOCompen	12.123*** (1.349)	12.174*** (1.387)
EmpWages	.0002 (.0002)	
_cons	51.128*** (2.561)	52.426*** (2.363)

Notes. ***, **, * indicate significance at the 0.01, 0.05 and 0.10 levels.

5.2 Compensation Plan Model Analysis

Since nonfinancial performance having been shown to be useful indicators for future financial performance and long-term value of the company, it's necessary to improve nonfinancial performance metrics, such as customer satisfaction. One way is direct investment, which is expenses on customer service, while companies can also promote the metric indirectly by setting compensation plan.

Primarily, the regression result shows that customer expenses, such as food service, are the direct investment which can exactly improve customer satisfaction in a quite short time. In other word, it is one of the key factors for having better nonfinancial performance.

What's more, the incentive mechanism is also useful in improving customer satisfaction to some extent. However, the regression result suggests that the CEO compensation for executives is effective, while incentive plan for general staffs not. From economic perspective, this also makes sense. Generally, executives, like CEO, is relatively easier to improve customer satisfaction since their positions give them more right to make some critical decision which is benefit for companies' nonfinancial performance. However, in order to give customers better experience, the general staff can do nothing but change themselves, like providing warm and attentive service. But changes in a small number of employees have little effect on companies' nonfinancial performance. What's worse, because too much capital is being invested in incentive plan, there may exist underinvestment in customer expenses, which reduce customer satisfaction on the contrary. Therefore, CEO compensation can help the company improve customer satisfaction, while incentive plan cannot.

6. CONCLUSIONS

The direct investments, customer expenses, able to improve the customer satisfaction in a short period, is the key determinant on customer satisfaction because they are literally directly related to every, and even the most trivial aspect of customers' experience. At the same time, incentive mechanism can to some degrees have a positive effect on customer satisfaction improvement, on which the implementation of CEO compensation plans work well. Surprisingly, the incentive plans for employees at lower position, however, have little influence on customer satisfaction.

The focus of current studies is based more on the relationships between customer satisfaction and financial performance, or other causes that can be brought by the changing of level of customer satisfaction, while few have tried to find the causal links between ways or investment that can cause the changing of customer satisfaction. We provide ground for that not all the current measures considered useful by companies are feasible on improving customer satisfaction, but still, whether the satisfaction improvement resulting from the feasible ways can truly increase profitability stays unproven. Consequently, we anticipate our results may help those further studies of overinvestment in customer satisfaction.

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