

Turnover's Relationships with Sales, Tips and Service
Across Restaurants in a Chain

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ABSTRACT

This study used restaurant level data from a casual-dining restaurant chain in the Midwestern United States to examine turnover's relationships with sales, tips and service. Turnover was negatively correlated with sales and service among high volume restaurants but not among low volume restaurants. Interestingly, the opposite pattern was observed for turnovers' relationship with tip percentages – turnover was negatively correlated with tip percentages among low volume restaurants but not among high volume restaurants. Plausible explanations for these findings are discussed along with their practical implications.

Turnover's Relationships with Sales, Tips and Service Across Restaurants in a Chain

Turnover rates in the U.S. restaurant industry often exceed 90% per year (National Restaurant Association and Deloitte and Touche, 2001; Woods and Macaulay, 1989). Such high levels of turnover impose both direct and indirect costs on businesses. Direct costs include the time and money needed to find, hire and train replacement workers. Indirect costs include reductions in productivity and service caused by understaffing during the time it takes to find replacement workers and by the inexperience of new workers once they are found and hired (Woods and Macaulay, 1989).

Given the prevalence and costs of turnover, executives and managers in the restaurant industry would benefit from a better understanding of this phenomenon. Specifically, a better understanding of the factors that increase or decrease the costs of turnover would help practitioners make decisions about how much priority to give this problem. In addition, a better understanding of the causes of turnover would help practitioners take appropriate actions to reduce turnover at their restaurants.

Hospitality researchers have studied both the causes and costs of turnover. However, much of this hospitality research has involved surveys of executives', managers', and/or departing employees' opinions about these issues (e.g., Hinkin and Tracey, 2000; Hogan, 1992; Pizam and Thornburg, 2000; Rowley and Purcell, 2001; Woods and Macaulay, 1989). Such surveys (though a useful source of ideas to test further) are not a reliable guide to the truth. A better approach is to directly assess the

relationships between turnover and those variables thought to be its antecedents and consequences (see Boles, Ross and Johnson, 1995; Simons and Hinkin, 2001). This latter approach is taken in the study reported below.

This study uses restaurant level data from a casual-dining restaurant chain to test ideas about the effects of sales, tips and their interaction on turnover. Previous research suggests that dissatisfaction with compensation is a major cause of turnover (Boles, et al., 1995; Pizam and Thornburg, 2000; Woods and Macaulay, 1989). Since the incomes of tipped employees increase with both sales and tip percentages, turnover should be lower in restaurants with large sales and tip percentages than in restaurants with small sales and tip percentages. Less clear is the likely effect of the interaction between these variables on turnover. If employees are income maximizers, then tip percentages may have a stronger effect on turnover as sales go up. This follows because tip percentages and sales combine multiplicatively to affect tip income. However, if employees are income satisficers, then tip percentages may have a weaker effect on turnover as sales go up. This follows because a reasonable income can be obtained with low tip percentages as long as sales are high.

This study also tests ideas about the effects of turnover, and its interaction with sales, on service. Service levels should be lower among restaurants with high turnover than among restaurants with low turnover for reasons described above. This negative turnover effect on service may be stronger when sales are high, because temporary understaffing is more serious, and training new hires is more difficult, in a busy restaurant than in a slow one. On the other hand, turnover could have a weaker (not stronger) effect on

service when sales are high, because new hires may be motivated to learn more quickly in a busy restaurant than in a slow one.

METHOD

The Chief Operations Officer at a casual-dining restaurant chain in the Midwestern United States provided data about each of 59 restaurants in the chain. The variables in this data set are described below.

Sales. Annual sales for the fiscal year 2001 were provided for each restaurant. According to the C.O.O., the sales “volumes of the stores vary mostly with demand, not capacity.” Thus, this variable was interpreted as a measure of restaurant busyness.

Service. The average of ratings that mystery shoppers gave each restaurant over the year 2001 was also provided. Mystery shoppers rate each store’s in-house dining experience three times a quarter and rate each store’s carryout twice a year. The in-house dining experience is rated on a 100-point scale with “10 points for the door, 10 points for the bar, 35 for the server, 25 for food, 20 for facility and restrooms.” Unfortunately, the chain was able to provide only the total score average and not the average for each component score. The C.O.O. explained that the company stopped breaking down the total score because “the overwhelming majority of problems were server related.” Thus, this variable was interpreted as primarily reflecting restaurant differences in server performance.

Turnover. The 2001 annual rate of total employee turnover at each restaurant was provided. This turnover rate was calculated by dividing the total number of employee terminations in a year by the number of employees at the start of the year.

Tip Percentage. The total charge tips and charges with tips at each restaurant for 2001 was provided. This information was used to calculate each restaurant's charge tip percentage.

RESULTS

The descriptive statistics for the study variables are presented in Table 1. There are two things worth noting about these statistics. First, there is substantial variability in all of the variables except tip percentages. This means that the correlations between these variables will not be strongly attenuated by restriction of range. Second, several of the variables have multiple observations with values over 2.5 standard deviations from the mean. These significant outliers can unduly influence parametric statistical tests, so the data was analyzed using Spearman's rank-order correlation coefficient.

Insert Table 1 about here

Spearman rank order correlations between turnover rates and the other study variables were calculated for the entire sample of 59 restaurants, for those 29 restaurants with below median sales, and for those 30 restaurants with above median sales (see Table 2). As expected, restaurants with higher sales experienced lower turnover rates (Spearman $r = -.30$, $n = 59$, one-tailed $p < .011$). This makes sense because restaurants with higher sales offer larger tip incomes to servers. Interestingly, the negative relationship between these variables held among high volume restaurants (Spearman $r = -.40$, $n = 30$, one-tailed $p < .015$), but not among low volume restaurants (Spearman $r = -$

.05, $n = 29$, one-tailed $p < .40$). Perhaps servers in low volume restaurants look at tip percentages rather than sales as the major determinant of their tip incomes.

Surprisingly, restaurants with higher tip percentages did not experience lower turnover rates in the sample as a whole (Spearman $r = -.14$, $n = 59$, one-tailed $p < .16$) or in the sample of high volume restaurants (Spearman $r = .11$, $n = 30$, $p > .50$). However, among low volume restaurants, higher tip percentages were associated with lower turnover rates (Spearman $r = -.36$, $n = 29$, one-tailed $p < .027$). This pattern of results makes sense if servers are income satisficers, because higher tip percentages are necessary for a satisfactory tip income at low volume restaurants, but not at high volume ones.

Insert Table 2 about here

Finally, restaurants with higher turnover rates delivered lower service levels both in the whole sample (Spearman $r = -.34$, $n = 59$, one-tailed $p < .005$) and among high volume restaurants (Spearman $r = -.44$, $n = 30$, one-tailed $p < .008$). However, this relationship did not hold among low volume restaurants (Spearman $r = -.04$, $n = 29$, one-tailed $p < .42$). These findings are consistent with the idea that temporary under-staffing is more serious, and training new hires is more difficult, in a busy restaurant than in a slow one.

DISCUSSION

This study found that turnover declined as sales increased among high volume restaurants but not among low volume restaurants. Interestingly, the opposite pattern was

observed for the effects of tip percentages on turnover – turnover declined as tip percentages increased among low volume restaurants but not among high volume restaurants. Since server income increases with both sales and tip percentages, this conflicting pattern of results is puzzling. Perhaps servers in high volume restaurants focus on sales as the major determinant of their tip incomes while servers in low volume restaurants focus on tip percentages as the major determinant of their tip incomes. If so, then these results are consistent with perceived income effects on turnover.

The negative relationship between turnover and sales suggests that one key to reducing turnover may be more effective marketing. The negative relationship between turnover and tip percentages (among low volume restaurants) suggest that another key to reducing turnover may be to increase servers' tip percentages. Lynn (1996) identified several tactics servers can use to increase their tip percentages – such as smiling, touching customers, squatting down next to the table, writing and drawing on the check, and using tip trays with credit card logos. Managers at low volume restaurants should consider training their servers to do these things.

This study also found that service levels declined as turnover increased among high volume restaurants but not among low volume restaurants. This finding is consistent with the idea that temporary under-staffing is more serious, and training new hires is more difficult, in a busy restaurant than in a slow one. They also suggest that managers at high volume restaurants should give turnover a higher priority than managers at low volume restaurants.

The effect sizes in this study were modest – accounting for only 9 to 19% of the variability in turnover and service. However, these effect sizes may have been reduced by

the broad nature of our measures. More precise measures of server turnover (rather than turnover in all positions) and of service quality (rather than quality of the total dining experience) should produce even stronger effects.

Making inferences about individual level processes from restaurant level data is perilous as is drawing causal inferences from correlational data. Thus, while the interpretations of the study results advanced above are plausible, they should be regarded as tentative pending further study. This study's data is an important supplement to previous surveys of opinions about the causes and costs of turnover, but more research is needed to further our understanding of this phenomenon.

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Table 1. Descriptive statistics for the variables in this study (n = 59).

Variable	Mean	Standard Deviation	Median	Minimum	Maximum	No. of Outliers ^a
Sales	\$2,355,648	\$536,646	\$2,267,213	\$1,190,896	\$3,939,803	2
Service	84.58	3.90	84.33	76.42	93.13	0
Turnover	112.32%	45.59%	97.18%	42.53%	263.04%	2
Tip	19.52%	.58%	19.52%	17.66%	20.83%	2

^a observations over 2.5 standard deviations from the mean

Table 2. Spearman r between turnover rates and other study variables.

Variable	All Restaurants (n = 59)	Low-Volume Restaurants (n = 29)	High-Volume Restaurants (n = 30)
Sales	-.30**	-.01	-.40**
Tip	-.14	-.36*	.11
Service	-.34***	-.04	-.44**

* one-tailed $p < .027$, ** one-tailed $p < .015$, *** one-tailed $p < .005$