

Analysis of the Economic Impact of Tips on Servers in the Restaurant Industry

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Abstract : Debate is ongoing about the impact of diners' tipping behavior on the restaurant industry. Some researchers have postulated that tipping is a social norm, with the amount of the tip closely related to the size of the bill. Others have suggested that since the size of tips is critical to servers' income, they act to financially motivate servers to provide good service. In our study of this issue, we analyzed financial data from the U.S. Census Bureau, the Bureau of Labor Statistics, and the National Restaurant Association (NRA). Data analysis indicated that the size of tips is financially critical to servers' income. Based on social exchange theory, in order to receive larger tips, servers try to provide better service. Some studies have postulated that since the size of tips is critical to servers' income, they function to improve service

Keywords: Tipping, restaurant, social norm, and social exchange theory

Introduction

Tipping is a long-time custom in the restaurant industry. Practically all diners take tipping for granted (Lynn, 2000), and the tip amount is typically steady due to standards for size and frequency. In the United States alone, tips totaled approximately \$26 billion annually (Azar, 2007). According to the National Restaurant Association (2005), total sales in the restaurant industry have been increasing steadily since the 1970s. Since tip size varies with restaurant sales, the extent of tip revenue has been growing side-by-side with the fast increase in restaurant sales. Clearly, the extent of tipping in the restaurant industry significantly affects customers, employers, and servers.

Previous studies have suggested two reasons for tipping: (1) social norm, and (2) appraisal of service quality. Many researchers have agreed that tipping is a social norm, with not leaving a tip widely acknowledged as being a social faux pas (Azar, 2004; Kerr, Domazlicky, Kerr, & Knittel, 2006; Seligman, 1998). The amount of tips as influenced by social norms relates to total bill size (Lin, 2007), and the relationship between service quality and tip size are not strongly significant (Kerr, Domazlicky, Kerr, & Knittel, 2006). Several researchers believe that the relationship between service quality and tip sizes is tenuous at best (Lynn, 2001). Second, other researchers have postulated that the size of the tips left by diners is influenced by their appraisal of service quality (Bodvarsson & Gibson,

1997; Lynn & McCall, 2000; Conlin, Lynn, & O'Donoghue, 2003). Lynn and McCall (2000) stated that diners consider equitable exchange relationships when making tipping decisions. Diners leave a larger tip when they receive good service; consequently, servers try to provide better service in order to receive a larger tip. This logic has one assumption: tips have a critical financial impact on servers. If the size of tips is small and makes very little difference in overall salary, there is little motivation to provide good service. In this case, it is difficult to say that there is a high correlation between service quality and size of tip. Integrating from previous studies, it is important to determine the financial impact of tips on servers in the restaurant industry. In other words, what is the proportion of tips in servers' overall wages?

This question can moderate two streams of tipping research. If tips' financial impact on servers is small enough to ignore, servers will not heavily rely on tips. Therefore, the relationship between service quality and size of tips is not strong. Consequently, diners' tipping behavior should be closer to the social norm. In contrast, if tips' financial impact on servers is large enough, the second stream of research is more favorable.

The purpose of this research was to investigate the financial impact of tips on servers in the restaurant industry.

Literature Review

Theoretical Background

Fernandez (2004) stated that tips play an important financial role in servers' pay, so low tipping can lead to a high turnover rate. Tips often represent 100% of servers' take-home salary because taxes reduce their hourly pay (Lynn, 2003). In this regard, tips are the primary incentive for servers to deliver quality service (Lynn, 2003). Therefore, in order to receive large tips, servers try to provide good service to diners.

The theoretical background of this rationale is social exchange theory (Blau, 1964). According to this theory, negotiated exchanges occur between parties. Social exchange theory suggests that all human relationships are formed by the use of a subjective cost-benefit analysis and a comparison of alternatives. In the restaurant industry, servers provide good service to diners and diners provide suitable reward via tips; in this way, a social exchange relationship exists. This

theoretical statement was empirically demonstrated by the following later studies.

Speer (1997) stated that a large number of diners in the United States leave tips in order to reward servers for good service. In the restaurant industry, there are negotiated exchanges between service providers and diners: the servers provide good service, and the diners pay the proper amount of tips (Bodvarsson & Gibson, 1997; Lynn & McCall, 2000; Conlin, Lynn, & O'Donoghue, 2003). Noll and Arnold's 2004 study showed that tips are an important part of the server's pay, as well as an important financial motivation. For example, servers' responses to a survey revealed that they believe that African Americans do not tip as much as do white Americans, and this pre-perception causes servers to convey negative attitudes and poor service to the former group of customers. Lynn and Haysbert (2003) also stated that many waiters and waitresses deliver poor service to ethnic minorities because they believe that the ethnic minorities are poor tippers. From an economic perspective, the servers' poor service and attitude towards African Americans and other ethnic minorities may be considered rational because the servers as an economic subject cannot maximize their gains from these particular racial and ethnic groups. These studies provide circumstantial evidence that servers are motivated to earn larger tips because tips are financially important portions of their salaries. Consequently, this economic motive makes servers act in a particular way.

Baaren (2005) mentioned that tips are an important part of servers' pay, so he investigated ways to increase tips. His study found that repetition is a good method of increasing tip size. When servers repeated customers' orders verbatim, customers left bigger tips because diners believed that the servers were behaving more prosocially. Also, diners felt they were engaging in a positive interaction. In other words, diners believed they received better service. Strohmetz and Rind (2001) investigated methods to increase servers' financial satisfaction using tips. They concluded that providing suggestions to diners regarding levels and size of tips stabilized the amounts received, thereby increasing servers' financial satisfaction.

Many researchers have tried to explain why people leave tips and to investigate the financial impact of tips on servers. However, most studies have focused on a few cases or a limited number of samples in the restaurant industry. No previous study has analyzed the entire restaurant industry based on objective data gained from public organizations. Therefore this study sought to explore the economic impact of tipping on servers using macro-industry data.

Research Questions

Tips have a huge impact on servers because almost all servers depend on tips to supplement their income (Noll & Arnold, 2004). However, what financial impact do tips have on servers? Some researchers conducted interviews or distributed questionnaires on annual average tip size in the industry, but no previous study has used macro-industry data to show the impact of tips on servers. Therefore, this study examined every available bit of statistical data in order to estimate the impact of tips on servers more objectively and to answer the research questions: what financial impact does the tip have on the server?

Methodology

This study used the historical research method to examine and interpret data from previous studies in this subject area. This secondary data were gathered to estimate the tip's economic impact on servers and to discuss its psychological impact. The primary data were collected from government archives and other restaurant organizations, such as the U.S. Census Bureau, the Bureau of Labor Statistics, the National Restaurant Association (NRA) and other government agencies. Other secondary data were derived from restaurant industry statistics, such as total sales, number of employees, average hourly wage rate, and occupation classification in the restaurant industry.

In collecting data, efforts were made to select those related only to the restaurant industry where tipping is frequent and the effect of tipping can be traced clearly to certain occupations, such as wait-staffs and bartenders.

Results

Total Sales

The data for sales in the full-service restaurants and bars/taverns were collected mainly from the *Statistical Abstract of the U.S. Census Bureau* from 1990 to 2004. Accurate sales data were important to this study because they provided the basis for measuring the exact amount of tips for each group, and allowed determination of the tip's effect on the server's annual income.

Number of Employees and Wage Level

The data were taken from the National Industry-Specific Occupational

Employment and Wage Estimates of the Bureau of Labor Statistics.

Table 1 offers a summary of the number of wait staffs employed by full-service restaurants and bars/taverns and their respective wages.

Table 1. Employment and Wage Overview

	FULL SERVICE RESTAURANT				BARS AND TAVERNS			
	WAITERS / WAITRESSES		BARTENDERS		WAITERS / WAITRESSES		BARTENDERS	
	NUMBERS	ANNUAL WAGES	NUMBERS	ANNUAL WAGES	NUMBERS	ANNUAL WAGES	NUMBERS	ANNUAL WAGES
1999*	1,363,702	13,220	151,522	14,320	71,461	13,220	116,937	14,320
2000*	1,402,920	13,270	155,880	14,110	72,380	13,270	86,040	14,110
2001*	1,426,680	15,110	158,520	16,370	73,700	15,110	120,600	16,370
2002	1,455,900	15,590	160,420	17,230	85,440	14,530	140,710	15,910
2003	1,533,700	15,690	169,430	17,460	78,860	14,630	153,450	15,810

(Data Source: Bureau of Labor Statistics, *National Industry-Specific Occupational Employment and Wage Estimates*)

For the purpose of this study, the aggregate data were examined with respect to restaurant categories, such as full-service restaurants, and bars/taverns, and further separated into data pertaining to waiters/waitresses and bartenders, so that the entire amount of the tip was distributed among employees. With regard to the aggregate occupation data available, the occupations of wait staffs and bartenders were selected from the list of occupations and data from the National Industry-Specific Occupational Employment and Wage Estimates, since these occupations directly benefit from the receipt of tips.

The data about industry employment and wages are available from 1999 to 2003 from the database for the National Industry-Specific Occupational Employment and Wage Estimates. Data from the year 2002 on were classified using a new classification system—the North American Industry Classification System (NAICS)—and provide an exact match between each type of business and its employment and wages.

Between 1999 and 2001, the relevant data were classified by Standard

Industry Classification (SIC) code. This classification was a more general one than the NAICS—neither included classifications such as full-service restaurants, limited service restaurants, special service restaurants, and bars /taverns, nor provided information on the distribution of tips because employment and wage data were not available for each group. As a result, the data for occupation and wages from 1999 to 2001 had to be estimated and adjusted to answer the question posed in this study—the new classification system would have resulted in time-series breaks.

The data prior to 1999 could not be used for this investigation because it described only the “eating and drinking places” components of the restaurant and bar industry. The data for 2002 and 2003 were more accurate and were examined in detail to determine industry trends. The data for 2004 were not yet available.

Estimation of Average Hourly Wage Rate

The data for average hourly wage level of wait staffs and bartenders were collected from the National Industry-Specific Occupational Employment and Wage Estimates of the Bureau of Labor Statistics. The data for hourly wage rate for full-service restaurants and drinking places from 1999 to 2003 are summarized in Table 2.

Table 2. Average Hourly Wage Rate

	EATING & DRINKING PLACES			
	WAITER / WAITRESS		BARTENDER	
	FULL-SERVICE RESTAURANT	DRINKING PLACES	FULL-SERVICE RESTAURANT	DRINKING PLACES
1999	6.36		6.98	
2000	6.98		7.70	
2001	7.26		7.87	
2002	7.49	6.99	8.28	7.65
2003	7.55	7.04	8.39	7.60

(Data Source: Bureau of Labor Statistics, *National Industry-Specific Occupational Employment and Wage Estimates*)

In Table 2, hourly wage data from 1999 to 2001 were available only for one category: eating and drinking places. From 2002 on, data were available for each group for hourly wage levels of waiters/waitresses and bartenders in full-service restaurants and drinking places.

Estimation of Tips

Total tips received by each type of group was computed by multiplying 10% and 15% into the total for sales in each year. For the purpose of this study, tip size was calculated as 10% and 15% of total bill amount to determine the impact of tipping on a server's annual income. The average tip was 15%. As shown in Table 3, tip amount increased as industry sales increased. Since the National Restaurant Association has forecasted that sales in the restaurant industry will increase continuously, the trend will most likely continue beyond 2005.

Table 3. Estimation of Tips

	FULL SERVICE RESTAURANT			BARS AND TAVERNS		
	SALES	10% TIPS	15% TIPS	SALES	10% TIPS	15% TIPS
1990	77,811,000,000	7,781,100,000	11,671,650,000	9,533,000,000	953,300,000	1,429,950,000
1991	78,355,000,000	7,835,500,000	11,753,250,000	9,442,000,000	944,200,000	1,416,300,000
1992	83,561,000,000	8,356,100,000	12,534,150,000	10,203,000,000	1,020,300,000	1,530,450,000
1993	87,011,000,000	8,701,100,000	13,051,650,000	10,162,000,000	1,016,200,000	1,524,300,000
1994	91,457,000,000	9,145,700,000	13,718,550,000	9,928,000,000	992,800,000	1,489,200,000
1995	96,396,000,000	9,639,600,000	14,459,400,000	9,946,000,000	994,600,000	1,492,200,000
1996	100,830,000,000	10,083,000,000	15,124,500,000	10,276,000,000	1,027,600,000	1,541,400,000
1997	110,276,000,000	11,027,600,000	16,541,400,000	11,066,000,000	1,106,600,000	1,659,900,000
1998	117,774,000,000	11,777,400,000	17,668,100,000	11,498,000,000	1,149,800,000	1,724,700,000
1999	125,430,000,000	12,543,000,000	18,814,500,000	11,912,000,000	1,191,200,000	1,786,800,000
2000	133,834,000,000	13,383,400,000	20,075,100,000	12,413,000,000	1,241,300,000	1,861,950,000
2001	139,990,000,000	13,999,000,000	20,998,500,000	12,673,000,000	1,267,300,000	1,900,950,000
2002	146,149,000,000	14,614,900,000	21,922,350,000	13,270,000,000	1,327,000,000	1,990,500,000
2003	150,976,000,000	15,097,600,000	22,646,400,000	13,418,000,000	1,341,800,000	2,012,700,000
2004	157,921,000,000	15,792,100,000	23,688,150,000	13,848,000,000	1,384,800,000	2,077,200,000

(Data Source: U.S. Census Bureau, *the Statistical Abstract of the United States*)

Data Analysis

Data analysis was divided into two parts—analyses for full-service restaurants, and for bars and taverns—in order to see how tip size affects each employee’s income level. Of employees in each group, waiters/waitresses and bartenders are considered the main recipients of tips, and the tip’s impact on annual income is analyzed using measured numbers. Therefore, the analysis of the tip’s impact on employees in full-service restaurants and bars/taverns at different tipping rates is shown by way of tables and charts (see Appendix). Emphasis was placed on the tip’s impact on the server’s annual income level with the change in the tipping rate.

Full-Service Restaurant

Assuming that there is no tip-pooling with non-tipped workers, and that annual wages do not include the tip as a part of the wage, the analysis showed that the tip’s economic impact on the waiter/waitress and the bartender is apparently huge when the wage level of the server is taken into consideration.

At a 10% tipping rate, tips average about 37.6% of real income for waiters/waitresses for 1999–2003. When this rate is increased to 15%, tips average about 47.4% in the same period. Clearly, then, tips do have a significant impact on the economic means of servers even in the worst-case scenario of a 10% tipping rate. These figures are summarized in Table 4:

Table 4. Impact of Tips on Waiters/Waitresses, Different Tipping Rates

	10% TIPPING				15% TIPPING			
	TIP PER EMPLOYEES	ANNUAL WAGES	REAL INCOME	TIP/REAL INCOME	TIP PER EMPLOYEES	ANNUAL WAGES	REAL INCOME	TIP/REAL INCOME
1999	8,278	13,220	21,498	39%	12,417	13,220	25,637	48%
2000	8,586	13,270	21,855	39%	12,879	13,270	26,149	49%
2001	8,831	15,110	23,941	37%	13,247	15,110	28,357	47%
2002	9,042	15,590	24,632	37%	13,563	15,590	29,153	47%
2003	8,865	15,690	24,555	36%	13,297	15,690	28,987	46%

With regard to bartenders, tips average about 35.6% of their income at a tipping rate of 10%. Again, when this rate increases to 15%, tips contribute 45.2%

to total income in the period under investigation, as shown in Table 5.

Table 5. Impact of Tips on Bartenders, Different Tipping Rates

	10% TIPPING				15% TIPPING			
	TIP PER EMPLOYEES	ANNUAL WAGES	REAL INCOME	TIP/REAL INCOME	TIP PER EMPLOYEES	ANNUAL WAGES	REAL INCOME	TIP/REAL INCOME
1999	8,278	14,320	22,598	37%	12,417	14,320	26,737	46%
2000	8,586	14,110	22,696	38%	12,879	14,110	26,989	48%
2001	8,831	16,370	25,201	35%	13,247	16,370	29,617	45%
2002	9,042	17,230	26,272	34%	13,563	17,230	30,793	44%
2003	8,865	17,460	26,325	34%	13,297	17,460	30,757	43%

Drinking Places

Assuming that tip pooling does not occur with non-tipped workers, and that annual wages do not include tips, the tip's impact on servers in the drinking places follows the same pattern as that in full-service restaurants; tips account for a greater percentage of servers' real income as the tipping rate increases (Table 6). Also, the ratio of tips in real income is almost 10% lower than in full-service restaurants.

Table 6. Impact of Tips on Waiters/Waitresses, Different Tipping Rates

	10% TIPPING				15% TIPPING			
	TIP PER EMPLOYEES	ANNUAL WAGES	REAL INCOME	TIP/REAL INCOME	TIP PER EMPLOYEES	ANNUAL WAGES	REAL INCOME	TIP/REAL INCOME
1999	6,323	13,220	19,543	32%	9,484	13,220	22,704	42%
2000	7,836	13,270	21,106	37%	11,753	13,270	25,023	47%
2001	6,522	15,110	21,632	30%	9,784	15,110	24,894	39%
2002	5,868	14,530	20,398	29%	8,802	14,530	23,332	38%
2003	5,776	14,630	20,406	28%	8,664	14,630	23,294	37%

With regard to bartenders who worked at drinking places during the period under investigation, tips averaged about 29.8% of income at the 10% tipping rate and 38.6% at the 15% tipping rate. Table 7 shows the figures for the individual years and at different tipping rates.

Table 7. Impact of Tips on Bartenders, Different Tipping Rates

	10% TIPPING				15% TIPPING			
	TIP PER EMPLOYEES	ANNUAL WAGES	REAL INCOME	TIP/REAL INCOME	TIP PER EMPLOYEES	ANNUAL WAGES	REAL INCOME	TIP/REAL INCOME
1999	6,323	14,320	20,643	31%	9,484	14,320	23,804	40%
2000	7,836	14,110	21,946	36%	11,753	14,110	25,863	45%
2001	6,522	16,370	22,892	28%	9,784	16,370	26,154	37%
2002	5,868	15,910	21,778	27%	8,802	15,910	24,712	36%
2003	5,776	15,810	21,586	27%	8,664	15,810	24,474	35%

Discussion

The Economic Impact of Tips on the Server

Many research papers have been written on customers' tipping behaviors and efforts to discover economic reasons for them. However, an actual determination of the economic motives of servers in regard to tipping has not received much attention from researchers. Large numbers of employees, full- and part-time, in the restaurant industry depend on tips as a major component of their income (Noll & Arnold, 2004). In many cases, tips usually account for a considerable percentage of income. It is useful, then, to quantify this percentage in order to determine tips' effects on servers in the restaurant industry. The analysis showed that tips play a critical role in the server's real income in each type of group, and that the impact increases as the tipping rate increases. The following discussion contains inferences that can be drawn from the data in Tables 1-7.

First, when the tipping rate is 10%, tips account for 34-39% of real income for full-time restaurant employees, and the percentage jumps to 43-49% when the tipping rate is 15%, which amounts to almost half of their real income. In the case of bars and taverns, tips' contribution to real income is 27-37% at a 10% tipping rate, and 35-47% at a 15% tipping rate, indicating slightly lower percent-

ages than in full-service restaurants. This fact implies that tipping plays a greater role at full-service restaurants, probably because of the nature of the service provided and the value of the individual customer's order, which combine to affect tip calculation by diners. In bars and taverns where the size of the individual order is smaller, the value of the tip and its frequency decrease. Therefore, tips' impact on servers in full-service restaurants is greater than that on servers in bars/taverns.

Second, the tip accounts for a considerable part of the employee's real income level in dining establishments such that the greater the role, the greater the increase in the tipping rate. This means that tipping has been positioned as the main and critical component of many workers' income, and that its economic impact becomes more significant for employers as the hourly wage rate has increased, but at a slow pace.

In addition, most tipped employees are part-time workers, and their hourly wage has not increased dramatically since 1998. According to the Job Bank (2008), median hourly earnings of wait staffs were \$6.80 with the middle 50% earning between \$6.13 and \$8.00, the lowest 10% earning less than \$5.70, and the highest 10% earning more than \$11.00/hour. "For most wait staffs, higher incomes are primarily the result of receiving more in tips rather than higher hourly wages" (Job Bank, 2008). Therefore, tips have been positioned as an important source of additional income. As a result, they provide a strong economic motive for every tipped part-time worker in both full-service restaurants and bars/taverns.

In conclusion, this study suggests that the size of tips is a financially critical part of a server's income. According to social exchange theory, servers seek to provide better service in order to receive more tips. Many studies postulate that tipping behavior is close to being a social norm. According to macro-restaurant industry data analysis, however, tips should be regarded as a reward for good service and indicates an appraisal of service by diners.

Limitations

In analyzing the data, this study makes some important assumptions. The first assumption is that tip pooling does not include other non-tipped workers, and that employees' annual wages do not include tips. If these assumptions had not been made, then the numbers shown in Tables 1-7 would have been different. Furthermore, for the purpose of this study, wait staffs and bartenders were considered the direct recipients of tips. The reality, however, is that many different types of employees receive tips in different occupations. Thus, the numbers shown in

the analyses could be higher than the real ones. Despite this minor difference between real and estimated numbers, this study provided invaluable insight into the impact of tip size on the server's real income level as the tipping rate increases.

References

- Azar, O. H. (2004). The history of tipping – From sixteenth-century England to United States in the 1910s, *The Journal of Social-Economics*, 33(6), 745-764.
- Azar, O. H. (2007). The Social Norm of Tipping: A Review, *Journal of Applied Social Psychology*, 37(2), 380-402.
- Baaren, R. B. (2005). The Parrot Effect: How to Increase Tip Size, *Cornell Hotel and Restaurant Administration Quarterly*, 46(1), 79-84
- Blau, P. (1964). *Exchange and power in social life*. New York, NY: Wiley.
- Bodvarsson, O. B. & Gibson, W. A. (1997). Economics and restaurant gratuities: Determining tip rates, *American Journal of Economics and Sociology*, 56(2), 187-203.
- Conlin, M., M. Lynn, & O'Donoghue, T. (2003). The norm of restaurant tipping, *Journal of Economic Behavior and Organization*, 52(3), 297-321.
- Fernandez, G. A. (2004). The Tipping Point-Gratuities, Culture, and Politics, *Cornell Hotel and Restaurant Administration Quarterly*, 45(1), 48-51.
- Job Bank USA (2008). Salary, Wages, Pay: Food and Beverage Serving and Related Workers. Retrieved September 28, 2008 from http://www.jobbankusa.com/career_employment/food_beverage_serving_related_workers/salary_wages_pay.html
- Kerr, P., Domazlicky, B., Kerr, A., & Knittel, J. (2006) An objective measure of service and its effect on tipping, *Journal of Economics*, 32(2), 61-69.
- Lin, T. (2007). Economic Behavior of Restaurant Tipping, *Economics Bulletin*, 4(2), 1-10.
- Lynn, M. (2000). The Relationship Between Tipping and Service Quality: A Comment on Bodvarsson and Gibson's Article, *The Social Science Journal*, 37(1), 131-135.
- Lynn, M. (2001). Restaurant Tipping and Service Quality: A Tenuous Relationship. *Cornell Hotel and Restaurant Administration Quarterly*, 42(1), 14-20.
- Lynn, M. (2003) Tip Levels and Service: An update, Extension, and Reconciliation. *Cornell Hotel and Restaurant Administration Quarterly*, 44 (5/6), 139-148.
- Lynn, M., & McCall, M. (2000). Gratitude and Gratuity: A Meta-Analysis of Research on the Service-Tipping Relationship, *Journal of Socio-Economics*, 29(2), 203-214.
- Lynn, M., & Haysbert, C.T (2003). Ethnic Differences in Tipping: Evidence, Explanations, and Implications, *Journal of Applied Social Psychology*, 33(8), 1747-1772.
- National Restaurant Association (2005). Industry at a glance. Retrieved on May 3, 2005. from http://www.restaurant.org/research/ind_glance.cfm.
- Noll, E. D., & Arnold, S. (2004). Racial Differences in Restaurant Tipping. *Cornell Hotel and Restaurant Administration Quarterly*, 35(1), 23-29.
- Seligman, D. (1998). Why do you leave tips? *Forbes*, 14(December), 138-140.
- Speer, T. (1997). The Give and Take of Tipping. *American Demographics*, 19(20), 51-54.
- Strohmetz, D. B., & Rind, B. (2001). The Impact of Tipping Recommendations on Tip Levels. *Cornell Hotel and Restaurant Administration Quarterly*, 42(3), 71-73.

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