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The Economic Behavior of Restaurant Tipping: The Effect of Tipping on Profit

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ABSTRACT
This paper explores the potential motivations behind restaurant tipping and its effect on profit. The analysis discovers several reasons that motivate people to tip in a restaurant, including exemplary service quality, future service, and social norms. Initially, tipping was used to encourage service quality, but it shifted to become the desire to conform to the social norm. Customers aim to prevent embarrassment and unfairness that may result from not tipping or lacking empathy for the worker. A survey was conducted with 40 Louisville customers and 16 Louisville servers soliciting their opinion about their tipping behavior. The quantitative study results show that 50% of the sample is tipping to reward the excellent service, and 22.5% is tipping due to social expectations.

The paper also discusses the similarities between the Pay What You Want pricing method and tipping customs, focusing on customers' incentives to protect their self-image. The study found that the customers prefer tipping over the increase in menu price or service cost due to their desire to decide on the quality of the service they received. On the other hand, restaurant owners are incentivized to have a tipping policy to lower operational costs.

Finally, the analysis finds the profitability relationship in a monopolistic market regarding tipping. The profit comparison has determined that tips significantly affect the profitability of the monopolist firm when there are differences between the consumer segments’ demand functions and their propensities to tip. This paper does not focus on the restaurants that add a fixed gratuity to the bills of large parties.

INTRODUCTION
Tipping, on most occasions, is a voluntary payment for the service provided. The food industry is the primary source of US tipping. Its annual tips approximately reach $47 billion (Azar, 2011). The Treasury Inspector for Tax Administration (2018) estimated a total of $44 billions of individual tip income in 2006 in the United States (including unreported tips, and not only in the food industry). Over 2.6 million servers and 610,00 bartenders in the US mostly have a lower minimum wage, as low as $2.13 per hour, resulting in lower-income and making the tips a very high part of their income.

In this paper, I discuss potential reasons for customer tipping behavior and survey public opinion on tipping. Similarities between Pay What You Want Pricing and tipping are explored. Finally, I discuss the effect of tipping on a restaurant’s profit.

THE PSYCHOLOGY BEHIND TIPPING
Individuals tip for various reasons. For example, encouraging better service on their next visit, rewarding their server for good service quality, feeling good when tipping, and conforming to the social norms. Some studies have found that people are happier when spending money on others than on themselves; ultimately, this generosity comes from their feelings of empathy and compassion.

Some people tip to assure good service in the future; however, this only applies to customers who plan to return to the place. Therefore, this justification may not be enough to justify the primary motivation for tipping. According to the Kahneman, Knetsch, and Thaler telephone poll, respondents believe that the proper tip for a $10 bill is the same whether the restaurant is one they frequent or one they would never visit again (1986). Those tipping to receive better service in the future have their interests in mind and make decisions under these interests, including social approval.

Some people believe the word "Tips" stands for "To Insure Prompt Service"; therefore, they use tipping as a measure of service quality. According to the research conducted by the Economic Development Committee for the Hotel and Catering Industry, 53% of customers give tips to express their appreciation for good service and cooking (1970). Beyond the influence of bill size on tips, the quality of service has a considerable impact on tips, implying that
PAY WHAT YOU WANT AND TIPPING

In Pay What You Want (PWYW) price setting, a customer decides on the price paid or pays nothing at all (see, e.g., Kim et al., 2009; Chao et al., 2019). PWYW disrupts the traditional pricing structure in which the seller controls the price setting. This price setting is typically used to describe goods and services for private consumption. PWYW can be profitable when some consumers behave reasonably and choose not to pay zero dollars. According to research, people have two incentives for paying for their consumption: strategic and social. Customers' self-interest and economic interests are captured by strategic motivation. Social preferences look at how consumers care about others and how restaurants may stay profitable by relying solely on social preferences for payment. Studies show that when buyers and sellers interact face-to-face, buyers will not free-ride and pay a positive price. Based on the experimental data, customers have incentives to protect their self-image regarding fairness. To protect it, they prefer to forego purchasing from the firm using PWYW pricing in favor of the restaurant that uses a declared fixed price (Chao et al., 2019). People feel bad when they violate the norms, and if they purchase the product or service, they often pay a "fair" price that does not hurt their self-image (Gneezy et al., 2012).

In many cases, consumers have at least some influences in determining the amount of money paid to the firm. One purchasing behavior that closely resembles PWYW is tipping. Tipping behavior varies greatly among customers, from leaving no tip to leaving a tip that exceeds the purchase price. People pick how much to pay in a PWYW situation based on prior experience. Learning how much others paid is more effective for inexperienced customers than experienced ones. In restaurant tipping, similar to PWYW, people know about the restaurant's culture and decide how much to tip. For instance, tipping in Japan can be considered rude in many situations. Even in the United States, people do not tip the same way everywhere; for example, when eating at McDonald's, people do not leave a tip; at Starbucks, they occasionally do, and at fine restaurants, they usually do.

Survey – Evidence from Louisville

I developed a survey in December 2021 through June 2022 and asked for a random sample of customers in Louisville. In total, 40 residents responded to the survey, and the result is summarized and discussed in this section. The questionnaire included the following questions (see Appendix 1):

1. How old are you?
2. Do you believe you have a stable income?
3. Do you think you should tip your server?
4. Do you usually tip your server?
5. Why do you tip?
6. How much do you usually tip?
7. Do you usually consider the recommended tipping amount on your bill?
8. Do you think giving tips equates to a charity donation?
9. Do you think restaurants will make a profit if you tip the server?
10. Would it be better if restaurants increased the menu price instead of asking for tips? (In this case, the server would get an hourly wage)
11. If not, why?

Each question had multiple choices so that people could select the best response from their point of view. Samples were aged widely from under 18 to over 40, and 55% believed they had a stable income. Results are listed in Table 1.

### Table 1: Customer’s Survey Observation Summary

<table>
<thead>
<tr>
<th>Questions / Answers</th>
<th>Yes</th>
<th>Sometimes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you think you should tip your server?</td>
<td>90%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Do you usually tip your server?</td>
<td>90%</td>
<td>7.5%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Do you usually consider the recommended tipping amount on your bill?</td>
<td>55%</td>
<td>30%</td>
<td>15%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Questions / Answers</th>
<th>Yes</th>
<th>Sometimes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you think giving tips equates to a charity donation?</td>
<td>17.5%</td>
<td>82.5%</td>
<td></td>
</tr>
<tr>
<td>Do you think restaurants will make a profit if you tip the server?</td>
<td>20%</td>
<td>80%</td>
<td></td>
</tr>
<tr>
<td>Would it be better if restaurants increased the menu price instead of asking for tips?</td>
<td>30%</td>
<td>70%</td>
<td></td>
</tr>
</tbody>
</table>

*It is essential to mention that the sample size was small, and the participants were primarily college students aged 19 to 24 (50 percent of the samples).

Survey results with a wide range of ages show that most people believe restaurant tipping is necessary and have different reasons to justify it (see Table 2). The amount of observations tipping varies from 1% to more than 20% of the bill amount. Even though half of the samples were college students and only 55% believed to have a stable income, 90% considered tipping their server on most occasions. This can be justified by the study of Manstead on social class, which claimed that relative to higher-class people, lower-class people are more generous, support charity to a greater extent, and are more likely to help a person in distress (2018).

Many articles recommend a tip of 15-20% at sit-down restaurants, and survey result also shows that recommended tip on the bill can affect the amount one decides to tip, as 55% of the samples consider it.

The results in Table 2 also show that 50% is tipping to reward good service and 22.5% due to the social expectation. In addition, most believe restaurants will not profit from the tipping policy and prefer to tip instead of higher menu prices because they enjoy the liberty of deciding how much their server will be tipped depending on the service quality (42.5%).

### Table 2: Reasons Given for Tipping

Furthermore, to gather more information about tipping, a survey with six questions was conducted and filled out by 16 servers from different restaurants in Louisville (see Appendix 2). The questions were as follows:

1. How old are you?
2. Do you think you should always be tipped?
3. Do you prefer being tipped or getting an hourly wage?
4. Are you asked to give any portion of your tips to other staff members?
5. If yes, how much are you asked to give away?
6. Do you think restaurants make a profit out of your tips?

Most of the samples were aged between 19-24 (68.8%), and the results are listed in Table 3.

### Table 3: Server’s Survey Observation Summary

<table>
<thead>
<tr>
<th>Questions / Answers</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you think you should always be tipped?</td>
<td>81.3%</td>
<td>18.8%</td>
</tr>
<tr>
<td>Are you asked to give any</td>
<td>87.5%</td>
<td>12.5%</td>
</tr>
</tbody>
</table>
Survey results with a wide range of ages from 16 to over 40 show that most servers believe they deserve to be tipped and prefer to have both an hourly wage and tips. The result also shows that most servers were asked to give more than 10% of their tips to other staff members. Based on this evidence, the majority of the people do not believe that restaurants make a profit from the tipping policy. However, in the sixth section, I will discuss the counterargument.

**Parties Incentives for Tipping**

According to Azar, tipping is a social norm that increases social welfare (2005a). In other words, implementing a tipping policy will give social benefits to people. Azar's model assumed that the server's utility is standard and includes the earnings from the tip and cost of effort, depending on the service quality. On the other hand, the customer's utility is less standard because it involves psychological utility, a social norm, and the cost of tipping. The customer's utility function in Azar (2005a) is:

\[
(1) \ u (s, t, b) = -b (1 + t) + f (t - n(s)) + G (s, b)
\]

Where "s" stands for service quality, "t" stands for tip percentage, "b" stands for bill size, and "n(s)" stands for the social norm function indicating how much should be tipped for each service quality. The first term, "-b (1 + t)," captures the cost of dining and leaving a tip. The last term, "G (s, b)," refers to the utility of the dining experience, which is determined by service quality and the quantity and quality of food purchased, which are captured by the bill size. The function "f" captures psychological utility from feelings and depends on the difference between the amount tipped (t) and the norm for how much to tip for the service quality received. Azar concluded that tipping could indeed improve service quality and social welfare. Since service quality and profitability have a direct relationship (Zeithaml, 2000), tipping can improve social welfare and service quality, increasing the restaurant's profitability.

According to the Louisville survey, most people prefer tipping to service charges that are not based on service quality because they want to decide what they pay for the service they receive (45.2% of the samples). Also, many wish to express their gratuity (25.8% of the samples). On the other hand, restaurants also have reasons to prefer tipping to a higher-priced service charge.

First, most customers prefer tipping, and since it is a competitive environment between firms, most restaurants prefer the tipping policy. Also, customers have psychological biases in the perception of prices, which emphasizes the menu prices more than the additional costs. To shift to a no-tips policy, a restaurant would have to increase its menu price by upwards of 20% (Robert, 2021). As a result, higher menu prices or service fees would make the restaurants less attractive and more expensive, ultimately resulting in readopting the tipping policy. For example, Danny Meyer, owner of Union Square Hospitality Group in New York City, who pioneered the no-tipping policy in his restaurant back in 2015, reintroduced tipping with advocacy as his restaurant reopened in the summer of 2020 (Yagona, 2020). One of the challenges many restaurants that adopt a no-tipping policy faced was finding the right price that comforts the customers and the servers (Bowen, 2020). Therefore, society would be better off with tipping versus a higher set menu price.

In addition, tipping would also result in less monitoring and supervision because consumers are more aware of service quality and can decide how much to pay. Only the servers who had previously earned fewer tips would be better off if the restaurant adopted a no-tipping policy and decided to pay their employees an average wage. The servers which previously earned more tips may decide to leave and work at a competitive restaurant that accepts tips to earn more money. Thus, the restaurant's move to higher prices results in the self-selection of the poorer servers to continue working and the better servers to leave (Azar, 2020).

Finally, based on the assumption that the restaurant already existed, any policy change would incur various costs, some of which may be unanticipated, such as printing new menus. Weekend shifts, which are popular among tipping servers due to increased tip income, could become unappealing due to more work for the same compensation under fixed rates, perhaps making it difficult to find servers for these busy times (Azar, 2020). Considering all the motivations, restaurants, customers, and servers are incentivized to facilitate tipping, which explains why it is still a widespread phenomenon and a social norm.

### 6. Effect of Tipping on Restaurant’s Profit

In the last section, I concluded that all parties are incentivized to keep tipping customs. This section uses Schwartz's (1997) demand-supply model to describe how market equilibrium is affected by the customer's tipping behavior. Assume a monopoly firm restaurant that faces a demand composed of two homogenous market segments, denoted by 1 and 2. The segment differs in their willingness to pay. Assume customers of segment two also have a stronger WTP. The demand functions of both segments are linear as follows:

\[
(2)\ D_1: \ P_1 = a_1 - b_1 Q_1 \\
(3)\ D_2: \ P_2 = a_2 - b_2 Q_2
\]
Q1 and Q2 denote the quantity demanded by segments 1 and 2, respectively. P1 and P2 denote the price paid by segments 1 and 2, respectively, and b1 and b2 denote the slope of demand curves D1 and D2 (where a1>a2). An aggregated market demand is given by:

\[
Q = Q_1 + Q_2 = \frac{a_1b_1 + a_2b_1 - p(b_1 + b_2)}{b_1 + b_2} \quad \text{P} \leq a_1
\]

\[
Q = Q_2 = \frac{a_2 - P_2}{b_2} \quad \text{P} \geq a_1
\]

Total cost, TC, is given by:

\[
(5) \text{TC} = F + VQ^2
\]

Where "F" denotes the fixed cost, and "V" represents the variable cost. In the first scenario, assume that customers will not tip. A monopolistic restaurant cannot tell the consumers apart since there is no exogenous signal of each demand function. Furthermore, even if the groups were distinguishable in a restaurant setting, setting a different price for each consumer segment would be difficult and most likely illegal. Since price discrimination is impossible, the monopolist sets the marginal cost, MC, equal to the total marginal revenue, MR.

MC is the cost of additional units, and MR is the revenue from selling additional units. In this case, MR is the horizontal sum of the marginal revenue curves of segments 1 and 2. Thus, to maximize profits, the restaurant sells either:

\[
(6) Q^*_b = \frac{a_2}{2(V+b_2)}
\]

Or

\[
(7) Q^*_b = \frac{a_1b_2 + a_2b_1}{b_1 + b_2} / [2(V + b_1 + b_2)]
\]

In the second scenario, assume both segments tip the same amount; therefore, the demand functions of the basic model are no longer adequate and must be modified to reflect the tips. From the customer's perspective, the cost of an item comprises the item’s menu price and the expected tip. For example, when an item on the menu is priced at $10, the customer’s perceived price is $11 (P = $10 + 10% tip). Thus, modify the demand curves (4) and (5) as follows:

\[
(8) P_1 = \frac{a_1 - b_1 Q_1}{1 + T_1}
\]

\[
(9) P_2 = \frac{a_2 - b_2 Q_2}{1 + T_2}
\]

Where \(T_1, T_2 \leq 0\) and usually \(T_1, T_2 < 1\). When both segments tip the same, \(T = T_1 = T_2\), the new aggregate demand function, D, is given by:

\[
(10) D:\ \left\{ \begin{array}{l}
Q = Q_1 + Q_2 = \frac{a_1b_1 + a_2b_1 - p(b_1 + b_2)(1 + T)}{b_1 + b_2} \quad \text{P} \leq a_1 \\
Q = Q_2 = \frac{a_2 - P_2 (1 + T)}{b_2} \quad \text{P} \geq a_1
\end{array} \right.
\]

*See Schwartz’s research for details.

In this scenario, the server’s payroll is adjusted to reflect their income from tips in the long term. In other words, the higher the tip, the lower the salary. Therefore, lowering the salary would reduce restaurant operating costs. The adjusted total cost is given by:

\[
(11) \text{TC} = F + VQ^2 - TPQ
\]

Where TPQ is the amount of tips the server receives. Hence, to maximize profit, the restaurant sells either:

\[
(12) Q^*_a = \frac{a_2}{2(V+b_2)}
\]

Or

\[
(13) Q^*_b = \frac{a_1b_2 + a_2b_1}{b_1 + b_2} / [2(V + b_1 + b_2)]
\]

Note that both quantities \(Q^*_a\) and \(Q^*_b\) are identical to those sold by the monopolistic firms in equilibrium without tips. When the restaurant is too small to control market prices, the restaurant equates supply and demand (Schwartz, 1997). Therefore, the new \(Q^*\) is:

\[
(14) Q^* = \frac{a_2}{2(V+b_2(1+2T))} \quad \text{Q} \leq \frac{a_2 - a_1}{b_2}
\]

In the third scenario, assume that the segments differ in their propensity to tip. Suppose that the stronger segment, 2, is also a better tipper. To simplify the mathematical representation, assume that segment one never tips and that, on average, segment 2 adds a tip of \(T \cdot 2\%\) to the stated price. The demand functions of segments 1 and 2 are given by equations (3) and (9).

\[
(15) D:\ \left\{ \begin{array}{l}
Q = Q_1 + Q_2 = \frac{a_1b_1 + a_2b_1 - P(b_1 + b_2)(1 + T_2)}{b_1 + b_2} \quad \text{P} \leq a_1 \\
Q = Q_2 = \frac{a_2 - P_2 (1 + T_2)}{b_2} \quad \text{P} \geq a_1
\end{array} \right.
\]

Total cost:

\[
(16) \text{TC} = F + VQ^2 - T_2 PQ_2
\]

To maximize profits, the restaurant sells either:

\[
(17) Q^*_a = \frac{a_2}{2(V+b_2)}
\]

Or

\[
(18) Q^*_b = \frac{a_1b_2 + a_2b_1}{b_1 + b_2} / [2(V + b_1 + b_2)(1 + T_2)]
\]

The profit comparison has determined that tips significantly affect the profitability of the monopolist firm when there are differences between the consumer.
segments' demand functions and their propensities to tip. When both segments tip the same amount, the monopolist firm’s profit is not affected by the tip’s size. On the other hand, when the segments differ in their propensity to tip, the firm’s probability depends on the portion of demand. When both segments have the same demand, the more significant the difference between the segments’ tipping, the lower the profit; in this case, it is recommended to abolish tipping. If the segment’s demand differs, higher profits are attainable when the stronger segment is a better tipper. The stronger the demand gap, the greater the profit can be achieved. This scenario recommends determining the difference between the maximized profits tips.

**CONCLUSION**

Every year, people tip billions of dollars in restaurants, both frequent diners and those who would never dine there again. The initial motivation for tipping was to be considered for future service, express gratitude for compassion, and impress others (Azar, 2007). As tipping becomes more popular in the United States, the motivations for tipping are likely to move toward those associated with tipping as a social norm, such as feelings of embarrassment, guilt, and unfairness that individuals feel when they do not tip where the custom is expected. The Louisville customer survey result shows that people believe they must tip and usually do it for different reasons. The Louisville server survey result also shows that servers believe they always deserve to be tipped. The observations also show that majority of the people do not believe that restaurants make a profit from the tipping policy.

In a PWYW circumstance, people decide how much to pay depending on their previous experience. Inexperienced customers benefit more from learning how much other people paid than experienced customers. Tipping, according to Azar, could boost service quality and social welfare. Since tipping relates to service quality and profitability (Zeithaml, 2000), it can promote social welfare and service quality while enhancing the restaurant’s profitability.

Restaurants, customers, and servers are incentivized to use a tipping policy, which can explain why it is still a widespread phenomenon and a social norm. The profit comparison has determined that tips significantly affect the profitability of the monopolist firm when there are differences between the consumer segments’ demand functions and their propensities to tip. The firm’s profit is unaffected by tip size when both segments tip the same amount. When the segments’ propensity to tip differs, the portion of demand determines the firm’s profitability. When both segments have the same demand, the more significant the tipping gap between them, the smaller the profit.

It is difficult to make general inferences based on this paper's limited sample size and a selected market. While tipping in restaurants is more common, tips for riding taxis, hotels, valet parking, and other situations are frequently given. Many tour operators in Europe use the PWYW pricing strategy and give the consumers complete discretion to pay whatever they want for a self-assembled tourism package. Studies indicate that PWYW leads to higher tips (Stangl et al., 2016). Individuals lack information to judge what is fair and would be willing to pay more (Greiff et al., 2013). Norms influence human behavior, and a growing literature in economics studies the role of the norm. Future studies exploring tipping in such sectors could provide a better understanding in varied settings.
survey. The results have been analyzed in the fourth section of the paper.

**APPROACH SCRIPT:**
"Hello, my name is Golnoush Esmaeily, and I am working on an Economic research paper, "The Economic Behavior of Restaurant Tipping: The Effect of Social Norms on Profit." Your responses are greatly appreciated and will help with my research. Thank you so much for taking the time to answer these questions!"

**INTERVIEW QUESTIONS:**
1. How old are you?
   - 18 or less
   - 19-24
   - 25-40
   - 40+
2. Do you believe you have a stable income?
   - Yes
   - No
3. Do you think you should tip your server?
   - Yes
   - No
4. Do you usually tip your server?
   - Yes
   - No
   - Sometimes
5. Why do you tip?
   - I feel guilty if I don’t tip
   - I feel good when I tip
   - It expected of me
   - To encourage a better service in future
   - Good service quality
6. How much do you usually tip?
   - I don’t usually tip
   - 1-10% of the bill
   - 10-20% of the bill
   - More than 20%
7. Do you usually consider the recommended tipping amount on your bill?
   - Yes
   - No
   - Sometimes
8. Do you think giving tips equates to a charity donation?
   - Yes
   - No
9. Do you think restaurants will make a profit if you tip the server?
   - Yes
   - No
10. Would it be better for restaurants to increase the menu price instead of asking

**REFERENCES**


**APPENDIX 1**

**CUSTOMER QUESTIONNAIRES**
This survey was prepared and conducted from December 2021 - to June 2022 through Google Form and sent to the samples via link. In total, 40 Louisville residents of various ages answered this
for tips? (In this case, the server would get an hourly wage)
  o Yes
  o No
11. If not, why?
  o I enjoy the liberty of deciding how much my server will be tipped depending on the service quality.
  o Tips would go directly to the server.
  o I want to show the server my gratitude.
12. Any comments regarding these questions?

APPENDIX 2
Server Questionaries
This survey was prepared and conducted from December 2021 - to June 2022 through Google Form and sent to the samples via link. In total, 16 Louisville servers of various ages answered this survey. The results have been analyzed in the fourth section of the paper.

APPROACH SCRIPT:
"Hello, my name is Golnoush Esmaeily, and I am working on an Economic research paper, "The Economic Behavior of Restaurant Tipping: The Effect of Social Norms on Profit." Your responses are greatly appreciated and will help with my research. Thank you so much for taking the take to answer these questions!"

INTERVIEW QUESTIONS:
1. How old are you?
   o 16-18
   o 19-24
   o 25-40
   o 40+
2. Do you think you should always be tipped?
   o Yes
   o No
3. Do you prefer being tipped or getting hourly wage?
   o Being tipped
   o Hourly wage
   o Both
4. Are you asked to give any portion of your tips to other staff members?
   o Yes
   o No
5. If yes, how much are you asked to give away?
   o 1-10%
   o 11-20%
   o 21-30%
   o More than 30%
6. Do you think restaurants make a profit out of your tip?
   o Yes
   o No