

Restaurant Perspectives on the Effects of Point-of-Sale Tip Recommendations on Consumer Patronage

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ABSTRACT

This research examines the effectiveness of point-of-sale gratuity recommendations in raising tips within the restaurant industry. Prior field experiments have yielded positive results regarding the impact of point-of-sale gratuity recommendations. However, these studies did not consider the restaurant industry, which is reliant on tips. To address this gap, I conducted a survey of restaurant managers to gauge their perceptions of this technology and compared their responses with prior field study results. Employing a survey approach mitigated resource constraints associated with field experiments. Building on the aforementioned studies, I hypothesized restaurant managers would exhibit positive attitudes toward the utilization of this technology. Survey data underwent chi-square tests of homogeneity to identify variations in responses across restaurant categories. However, limited response rates rendered the chi-square test results inconclusive and thus, not included in the final analysis. Nevertheless, the survey results strongly supported my hypotheses, suggesting that the adoption of point-of-sale gratuity recommendations effectively increases tips received in the restaurant industry. These findings offer insights for future researchers investigating tipping behavior in restaurants. Furthermore, restaurant owners can leverage these results to advocate for implementing point-of-sale tip recommendations, considering the backing from their managerial peers. As the hospitality sector continues to evolve, incorporating this technology can facilitate positive changes in tipping culture, benefiting both businesses and service staff. Future studies should build upon these findings to gain deeper insights into the dynamics of this technology in restaurant settings.

Literature Review

Although different researchers hold varying views on the origins of tipping, there is general consensus that the practice was brought to the United States from Europe during the 19th century (Azar, 2020). Ofer H. Azar, a researcher at Ben-Gurion University of the Negev in Israel, suggests that affluent American travelers who visited Europe during this time began tipping upon their return to demonstrate their familiarity with European customs. This trend soon caught on, and by 1895, the average tip in the United States was a generous 10 percent, compared to just 5 percent in European restaurants (Azar, 2020). Over time, tipping norms in the United States continued to evolve. As Peggy Post, a former director of the Emily Post Institute, notes in the 16th edition of Emily Post's *Etiquette*, "It wasn't long ago that 15 percent of the bill, excluding tax, was considered a generous tip in elegant restaurants. Now the figure is moving toward 20 percent for excellent service" (Post, 1997, as cited in Azar, 2020). Today, tipping remains far more common in the United States than in Europe, with many Europeans opting to simply round up the total cost of a meal rather than adding an additional 15-20 percent (Azar, 2020).

Around the beginning of the 21st century, many restaurants in the United States began experimenting with the practice of printing suggested tip amounts on receipts, which are referred to as "tipping/gratuity recommendations" or "default tips" (see Figure 1) (Karniouchina et al. 2008). In the study conducted by Kate Karniouchina and her team for the Cornell Hospitality Report, the use of gratuity recommendations

was found to increase the value of tips received in most situations, except in cases of exceptionally poor service. The authors suggested that the influence of service quality on tip size is minimal at best. Michael Lynn from the Cornell School of Hotel Management took a more moderate view on the subject, stating that patrons tend to reward better service with larger tips, but the relationship between tip size and service evaluations is weaker than commonly believed (2009). Both authors emphasized the importance of "social norms" and other psychological motivators as determining factors in gratuity amounts (Karniouchina et al. 2008; Lynn 2009). The idea of tipping as a social norm is crucial in explaining why people are willing to spend money on gratuity even when it's not mandatory. By using these social norms to their financial advantage, restaurants have effectively demonstrated the power of combining technology and consumer psychology through the utilization of sales receipt gratuity recommendations.

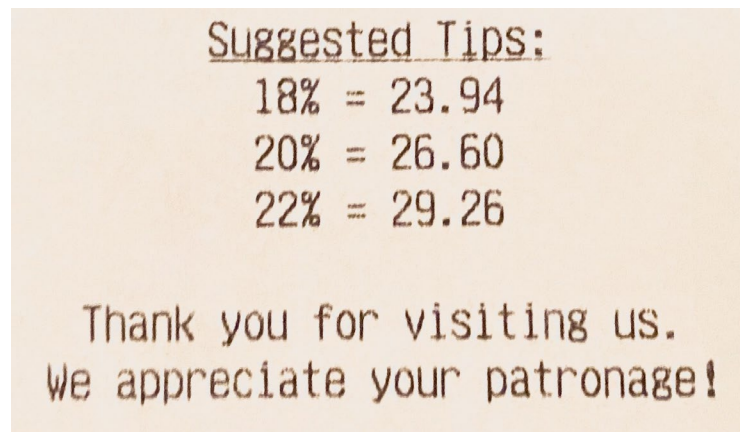


Figure 1. An example of gratuity recommendations, as presented on a sales receipt.

Today, gratuity social norms for financial gain are implemented not only through sales receipt gratuity recommendations but also through the use of tablets. These tablets can either be general-use devices such as Apple's iPad, which can be equipped with industry-designed applications like Square, or industry-specific ones like those produced by Presto (see Figure 2). These tablets are considered POS (or point-of-sale) systems, which are hardware/software that enables restaurants to make sales, accept payments, and check out customers.

Despite Lynn's argument in favor of technology-based gratuity recommendations, the increasing prevalence of such technologies has also led to a growing skepticism among consumers. As Levitz points out, many individuals feel pressured to make tipping decisions in real-time, often in front of the person who served them and other waiting customers (2018). According to Levitz, these devices often ask consumers to make tipping decisions on the spot, with the person who just served them and everyone else waiting in line watching on.

Levitz's research found that this puts many consumers in an uncomfortable or awkward position, as they feel pressured to leave tips even for service that appears undeserving of gratuity. Fueled by the ongoing debate, Damon Alexander and his team, which included Michael Lynn, published a study in 2020 studying consumer reactions to gratuity recommendations using these new systems. In said study, they manipulated the presence of the tipping recommendations and subsequently measured consumer response, interaction, and satisfaction. In line with previous findings, the study discovered that suggested gratuity sizes increased the amount and value of tips received, while having little to no impact on overall customer satisfaction. Given the perceived negative feedback to these new systems, the findings may be puzzling to other researchers in the field.



Figure 2. Demonstration of what most gratuity recommendations look like (Alexander et al., 2020).

Towards the end of Lynn's research paper, he cautions against generalizing his research findings, as it only collected data on an Internet app-based laundry delivery service (2020). Similarly, Haggag and Paci obtained comparable results, but their research was limited to New York Cab taxi rides (2014). Therefore, there is still a lack of data for different industries regarding consumer reactions to new technological innovations in gratuity recommendations. As such, I believe that my gap falls within the lack of data for differing industries with regards to consumer reaction to new technological innovations in gratuity recommendations. For my research, I decided to focus on the restaurant industry for a multitude of reasons, including the lack of abundant data with regards to consumer satisfaction in the area, as well as the potential costliness of purchasing and installing gratuity recommendation software. By extending the scope of existing theories to the restaurant industry, this research offers valuable insights to restaurant owners on the effectiveness of this technology when considering its purchase, which can lead to better-informed decisions. Moreover, if it's true that this technology is more effective in collecting tips, it could have a favorable impact on the livelihoods of millions of servers across the country, who often depend on tips as a significant portion of their earnings—as reported by the National Employment Law Project, the average share of hourly earnings that come from tips account for 58.5 percent of wait staff's earnings (Tung, 2018).

It is worth noting that several significant studies, including those conducted by Damon Alexander and his team, as well as Kareem Haggag and Giovanni Paci, employ expensive and time-consuming experimental methods. For example, Alexander's experiment studied 24,637 subjects over the course of two years. Additionally, these studies often affect the number of tips the restaurant studied receives, which makes the recruitment of these restaurants quite difficult. The benefits of these studies, however, is the fact that they can study a causal relationship. The nature of being a student researcher with a limited amount of time to conduct a study leads me to believe that an experiment of this nature will not be plausible. Due to the fact that my study will not be an experiment, it will not produce this causal relationship, and thus will serve as a testable prediction for future researchers that have the means to conduct an experiment on the restaurant industry. I will be comparing the results of my study to the results of these reputable experiments in order to determine the similarity of the results. As such, my research question will be "How do point-of-sale gratuity recommendation tipping patterns in restaurants compare to that of other tip-driven industries?" I have two hypotheses

that I believe can help answer this question, 1) respondents will indicate an increase in the values of tips received; and

2) respondents will indicate an increase in the number of tips received.

Method

Procedure

A survey was distributed to restaurants that utilize gratuity recommendations via point-of-sale technology across Nassau County, New York. These surveys were distributed by hand in order to maximize the response rate in a given period of time. Workers of managerial positions were targeted for the survey since they are likely to be well informed on the operations of the restaurant. This decision was based on research conducted by management professors Cynthia S. Cocyota and David A. Harrison of the University of Texas at Arlington and the University of Texas at Austin, respectively. According to them, "Management researchers commonly rely on executives to be special types of 'key informants' regarding critical organizational processes. These executives, as representatives of their firms, possess knowledge about internal and external issues of the organization and have similar duties and responsibilities, regardless of the size or scope of the organization" (2006). Additionally, this group was chosen based on the fact that workers of management occupations are more likely to serve longer tenure (U.S. Bureau of Labor Statistics, 2022). Lastly, the survey was restricted to ages 18 and over to restrict the potential need for parental consent.

Measures

The first part of the survey was labeled as "Demographic Inquiry," and it consisted of five open-ended questions and one multiple-choice question. The first two open-ended questions requested the name and address of the restaurant where the participant worked. These questions were included to facilitate the organization of data by assigning all subsequent responses to a specific name and address. The multiple-choice question asked the participant to identify their restaurant among eight categories. This question was included to help categorize respondents into different groups within the restaurant industry. The following three open-ended questions asked the participant about their tenure at their current restaurant, their tenure in their current position, and the label of their position. These questions were included to establish the legitimacy of the respondent; if the participant had worked as a manager for less than six months or had a position other than a manager or an equivalent/higher position, their response was considered void. The following section, labeled "Study Viability Screening," served a similar purpose of ensuring that the respondent was suitable for the survey. It contained a yes/no question that asked whether the respondent's restaurant utilized pre-set tip recommendations. The question was accompanied by an image of the recommendations to ensure that respondents were aware of the technology that the survey was inquiring about. The next section, labeled "Technological Inquiry," aimed to classify the participant's involvement with the technology. This section consisted of one multiple-choice question and one open-ended question. The multiple-choice question asked the respondent which service they use that provides the pre-set tip recommendations, with eight options available, and an open-ended box for services not provided. The subsequent open-ended question asked the restaurant how long they had been using the technology, and responses of less than six months were considered void to ensure the quality of responses.

The following section, titled "Opinions on Technology," contained three multiple-choice questions, two yes/no questions, and two ten-point interval questions. These questions aimed to identify the respondent's views on tip recommendation technology. The three multiple-choice questions only included the options of "increase" and "decrease," and asked if the respondent had observed an increase or decrease in consumer tipping values, an in-

crease or decrease in "0%" or "\$0" values, and an increase or decrease in the efficiency of collecting tips. The two ten-point interval questions were formatted differently based on the type of question being asked. One of the questions asked respondents to rate their experience with the tip recommendation technology, with one labeled as "poor" and ten labeled as "great." The other question asked respondents to rate the extent to which they credited the technology with increasing tipping values, with one labeled as "insignificant" and ten labeled as "significant." The two yes/no questions asked if the respondent believed that the implementation of the technology had any net effect on the number of tips received and if they would recommend the implementation of the technology to other restaurants. The final section, labeled "Personal Opinion," contained one question which asked the respondent for their personal opinion on whether preset tipping values lead to an increase or decrease in tipping values.

Planned Analyses

To further analyze of the results, chi-square tests of homogeneity were conducted on applicable questions (see Figure 3). This was done as it could help determine if there is a specific category of restaurants that holds a significantly different opinion compared to the other category.

- On a scale of 1-10, how would you rate your experience with this technology?
- Since implementing this technology, has your restaurant seen an increase or decrease in consumer tipping values?
- Since implementing this technology, has your restaurant experienced an increase or decrease in "0%" or "\$0" tipping values?
- Since implementing this technology, has your restaurant experienced an increase or decrease of efficiency in collecting tips?
- Do you think the implementation of this technology had any net effect on the number of tips your restaurant received?
- On a scale of 1 to 10, how much credit would you give to your technology in regard to increasing tipping values?
- Would you recommend the implementation of this technology to other restaurants?
- Do you believe preset tipping values lead to an increase or decrease in tipping values?

Figure 3. Questions of Interest for Chi-Square Test of Homogeneity

Tests were conducted using Minitab® Statistical Software 21.4.0.0. Minitab is a widely recognized statistical software that is frequently utilized in statistical courses at universities as well as in professional settings such as government, business, and industry (Alin, 2010). Altogether, eight chi-square tests of homogeneity were conducted, each containing categorical variables related to the type of restaurant inquired. The purpose of these categories was to classify survey respondents into different sectors of the restaurant industry. To aid respondents in selecting the category that best described their restaurant, examples of restaurants in each category were provided.

Two distinct hypotheses were used to conduct the tests in the most efficient manner (see Figure 4). A significance level of $\alpha = .05$ was used, as it is the most commonly accepted in social science research studies (Moore et al., 2012). Minitab's feature of calculating a categorical variable's contribution to the chi-square statistics was utilized; with this feature, it becomes possible to identify the categorical variable that deviates the most from the distribution, offering a clearer perspective on the responses obtained for various restaurant types. By combining the data gathered from the questionnaire with chi-square tests of homogeneity, it becomes possible to conduct a comprehensive analysis of the restaurant industry as a whole, as well as specific sectors within it.

For questions with “Yes” and “No” responses:

H₀: There is no difference in the distribution of “Yes” responses in the three restaurant categories

H_a: There is a difference in the distribution of “Yes” responses in the three restaurant categories

For questions on an interval scale of one to ten:

H₀: There is no difference in the distribution of numerical responses in the three restaurant categories

H_a: There is a difference in the distribution of numerical responses in the three restaurant categories

Figure 4. Hypotheses for chi-square test of homogeneity

Results

Survey:

The survey yielded results from 31 restaurants that equip point-of-sale gratuity recommendation technologies. These restaurants were all located within Nassau County, an inner suburban county located on Long Island, immediately to the east of New York City. The restaurants surveyed (n=31) were “Café/Beverage” shops (n=8), “Fast Casual” restaurants (n=11), and “Casual” restaurants (n=12) (Figure 5). The managers surveyed had worked at their current restaurant for around 5.38 years (Figure 6), in addition to working in a managerial position for an average of 5.07 years (Figure 7).

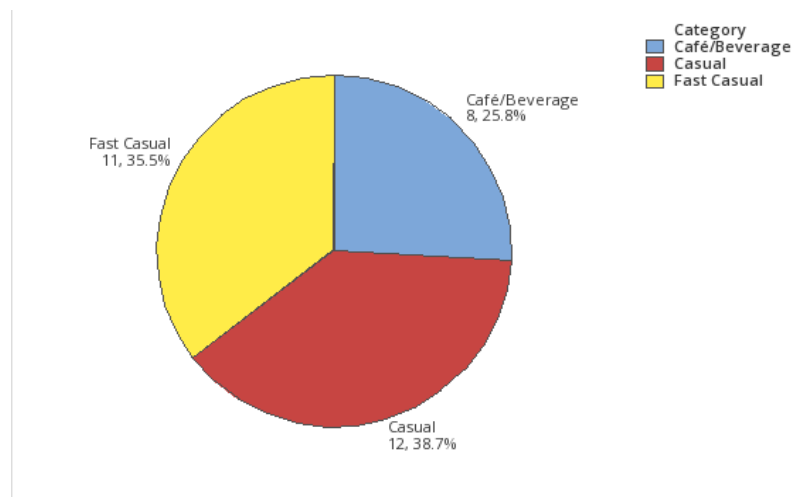


Figure 5. Restaurant Category

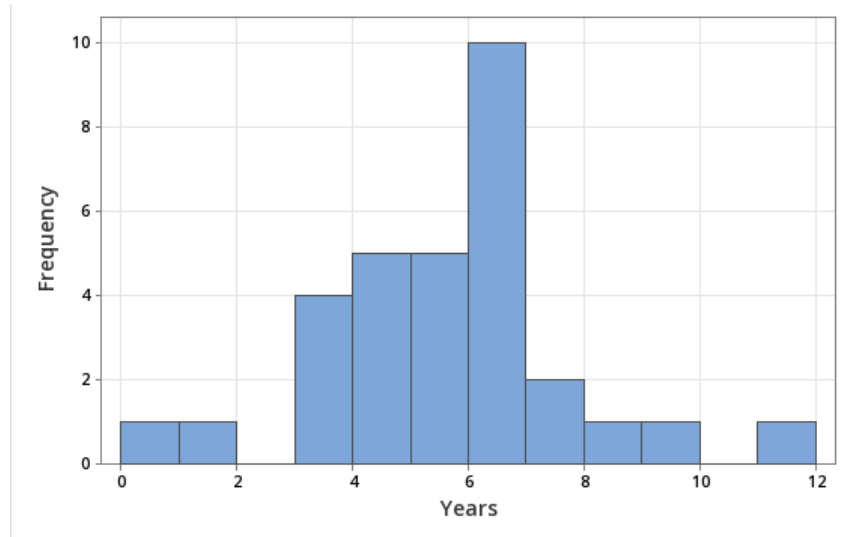


Figure 6. Tenure at Restaurant

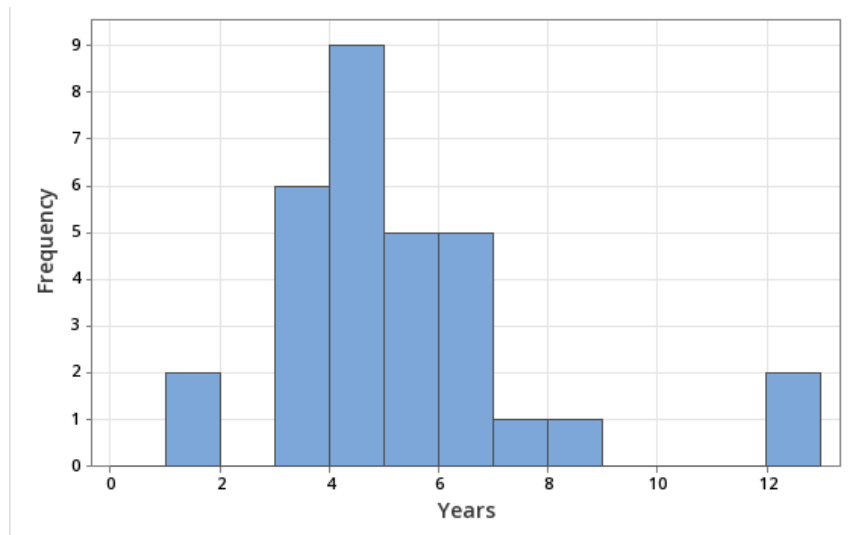


Figure 7. Tenure in Current Position

Out of those surveyed (n=31), around 58% of respondents (n=18), when asked which service they used for the POS gratuity recommendations, chose the service Toast. Other services included Presto and Verifone at around 9.7% (n=3), Ziosk, Square, and Revel Systems at around 6.5% (n=2), and Clover at around 3.2% (n=1) (Figure 8). The average time utilizing their respective service was just about 2 years (Figure 9).

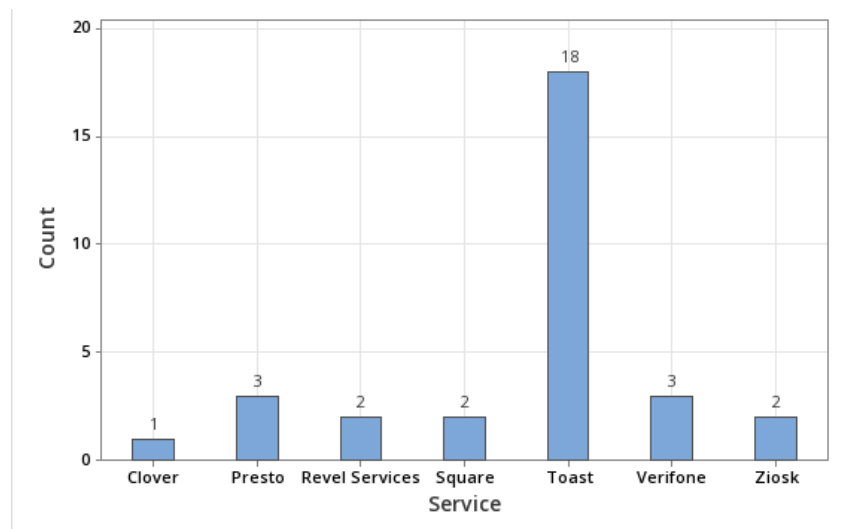


Figure 8. Name of Equipped Technology

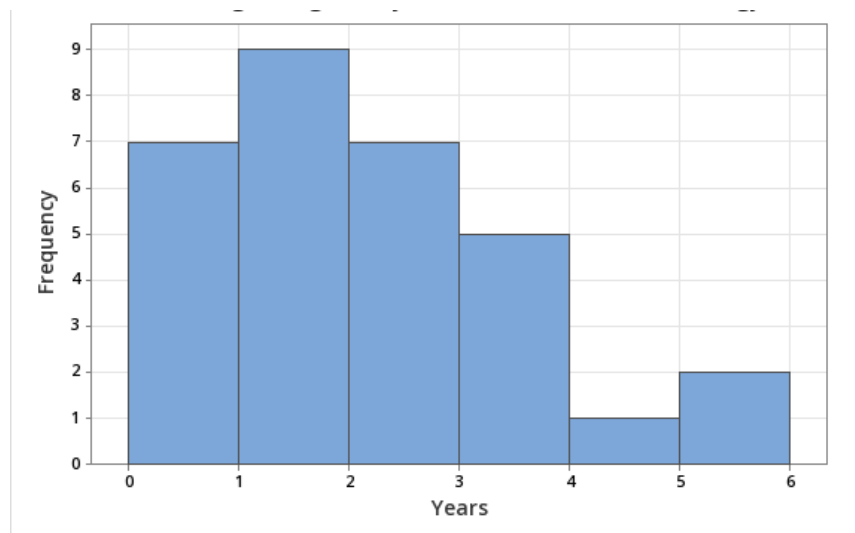


Figure 9. Name of Equipped Technology

When asked to rate their experiences with this technology, the restaurant managers responded with an average of 7.936 out of ten, signaling a significant show of positive recognition (Figure 8). The following question asked respondents if they have seen an increase or decrease in tipping values with the technology, which a sizable 84% (n=26) stated resulted in an increase (Figure 10). A question later in the survey asking respondents to evaluate

the amount of credit they would give to the technology for increasing tipping values received an average rating of around 7.065 out of ten (Figure 11).

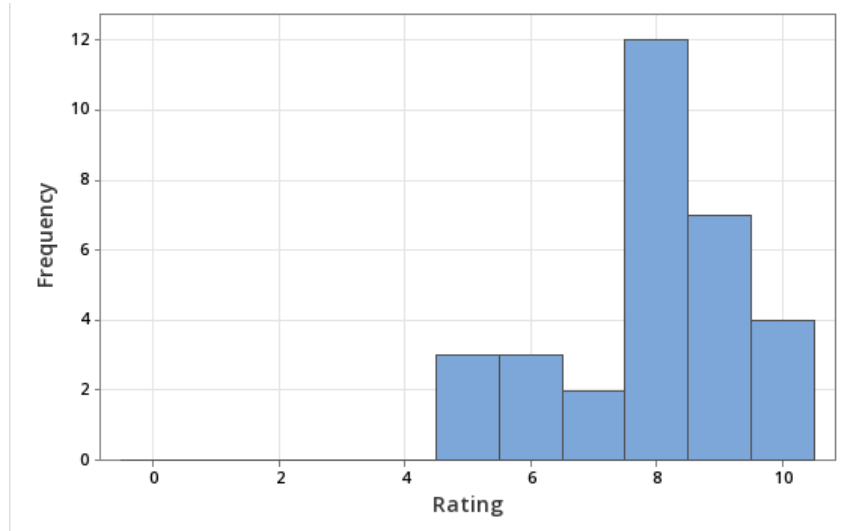


Figure 10. Interval rating on experience with technology

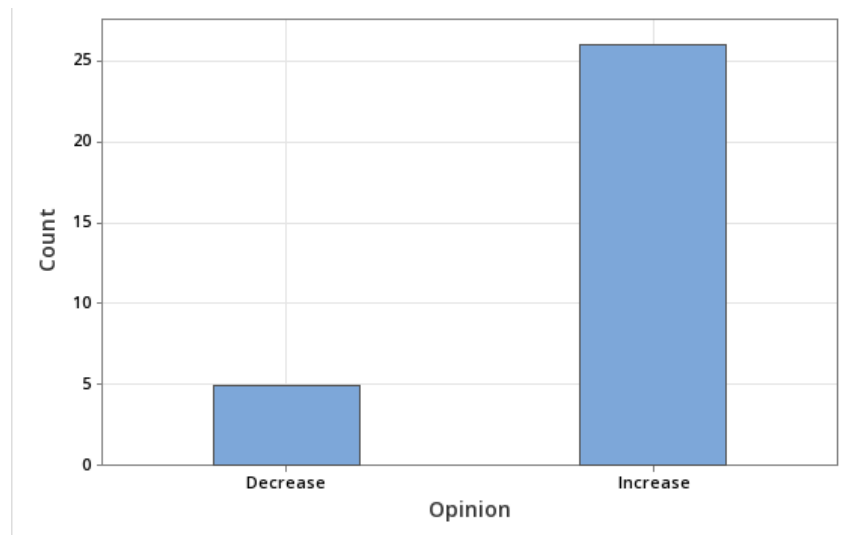


Figure 11. Opinion on Point-of-Sale Gratuity Recommendation's Effect on Tips Received

When asked if they had seen an increase in the appearance of "\$0" or "0%" tipping values, a split was observed, with around 48.4% responding yes (n=15) while 42% responded no (n=13). In this question, 9.7% (n=3) of respondents withheld their answer by choosing the "I'm not sure / Prefer not to answer" answer selection (Figure

12). Slightly over 90% of respondents (n=28) agreed that the utilization of this technology has made the process of collecting tips at their restaurant more efficient (Figure 13).

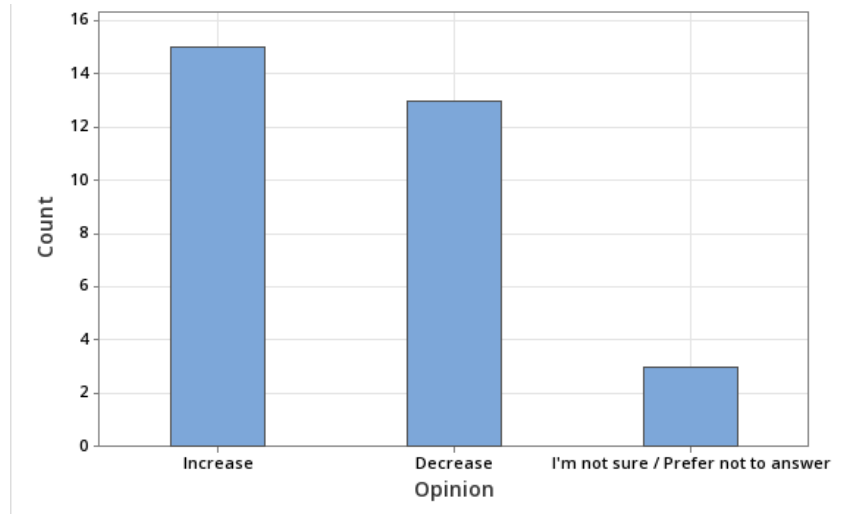


Figure 12. Opinion on Point-of-Sale Gratuity Recommendation's Effect on Null Tips

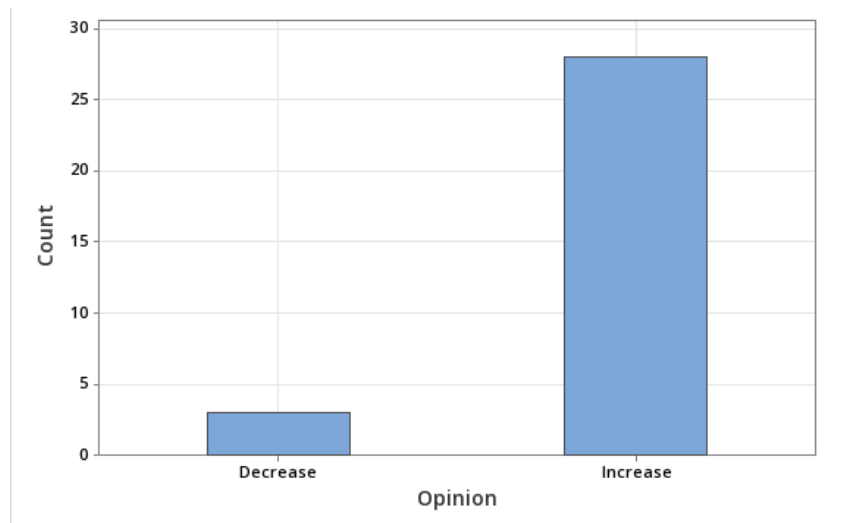


Figure 13. Opinion on Efficiency of Point-of-Sale Gratuity Recommendation Technology

The following section which inquired about a respondent's personal opinion on the POS gratuity recommendation technology received responses in line with previous results. When asked if the respondent would recommend this technology to other restaurants, around 74.2% (n=23) indicated that they would. In addition, when asked for their personal belief on the effect this technology has on tipping values, around 80.6% of re-

spondents (n=25) indicated that they believe it leads to an increase in values.

Chi-Square Tests:

All of the chi-square tests of homogeneity indicated that there was no difference in any of the distributions of responses across the three tested categorical variables, with a p-value > 0.05. It is important to note, though, that there were some validity concerns within the statistical analysis. Due to the nature of the population studied, a small sample size was present, and this sample size was further strained as it was spread across three categorical variables. In order to properly evaluate any differences in responses by the category of restaurants, a larger sample size would need to be used. According to *The Basic Practice of Statistics, 6th Edition*, the following requirements are necessary to safely use a chi-square test: “You can safely use the chi-square test with critical values from the chi-square distribution when no more than 20% of the expected counts are less than 5 and all individual expected counts are 1 or greater. In particular, all four expected counts in a 2 x 2 table should be 5 or greater” (Moore et al., 2012).

None of the tests exhibited any cells with expected counts less than one, but all of the tests contained more than 20% of expected counts that were less than five. Table 1 gives a summary of any validity concerns present throughout the eight chi-square tests.

Table 1. Validity concerns in chi-square tests of homogeneity

Question Tested:	Validity Concern:
Since implementing this technology, has your restaurant seen an increase or decrease in consumer tipping values?	50% of cells contained expected counts less than five.
Since implementing this technology, has your restaurant experienced an increase or decrease in "0%" or "\$0" tipping values?	33% of cells contained expected counts less than five.
Since implementing this technology, has your restaurant experienced an increase or decrease of efficiency in collecting tips?	50% of cells contained expected counts less than five.
Would you recommend the implementation of this technology to other restaurants on the basis of tipping?	50% of cells contained expected counts less than five.
Do you believe preset tipping values lead to an increase or decrease in tipping values?	50% of cells contained expected counts less than five.
On a scale of 1 to 10, how much credit would you give to your technology with regards to increasing tipping values?	100% of cells contained expected counts less than five.
On a scale of 1-10, how would you rate your experience with this technology?	100% of cells contained expected counts less than five.

Due to the statistical inconclusiveness within the chi-square tests, it is not plausible to look at the individual contributions to the chi-square statistic to identify the categorical variable that deviates the most from the distribution. *The Basic Practice of Statistics, 6th Edition*, recommends looking at the data to learn the nature of the relationship only if the test is significant ($p < .05$) (Moore et al., 2012). With a larger sample size, it is possible that the tests could come back significant, but with the current statistics, inferences from the contributions would likely be inaccurate.

Discussion

The survey yielded responses from a wide variety of restaurants throughout Nassau County, and from managers with a reputable amount of expertise. The average number of years working in a managerial position (5.07) for respondents of the survey resembles the Bureau of Labors reported statistics on the average tenure of employees of managerial positions, at 6.2 years. Furthermore, the respondents' credibility in evaluating the restaurant's experience with the technology is notably high, given their average tenure of 5.38 years at their current establishment. The reported average amount of time the restaurant had been utilizing POS gratuity recommendation technology, at about 2 years, serves to prove that the managers are qualified to discuss their experiences with this technology. Upon comparing both questions, it becomes evident that all 31 respondents had been working at their current restaurant of occupation for the same amount of time or longer than the restaurant had been implementing POS gratuity recommendation technology.

Many of the questions within the “Opinions on Technology” section of the survey received lofty positive responses, indicating that many restaurants have benefitted from the implementation of this technology. When asked to rate their experiences with the technology, the mean response was nearly eight out of ten, indicating that in general, this technology has served to benefit the restaurant. The near unanimous response indicating the impact of the technology on the number of tips received by the restaurant, coupled with the 84% agreement that it led to an increase in tipping values, authenticates the positive impact of implementing this technology in restaurants. An average rating of around 7.065 out of ten when asked to evaluate the credit the respondent would give to the technology for increasing tipping values corroborates the previous evidence.

Additionally, when asked if the respondent had seen an increase or decrease in the efficiency of tip collecting since implementing the technology, an immense majority of around 90.3% indicated that they had perceived an increase, suggesting that the benefits of this technology go beyond simply increasing the values of tips received. Altogether, the benefits have contributed to an approximate 74.2% agreement that the respondent would recommend this technology to other restaurants on the basis of tipping.

The only question that generated considerable debate was when respondents were asked if they had seen an increase in \$0 or 0% tipping values. This question exhibited the highest number of “I’m not sure / Prefer not to answer” selections, in addition to having around 48.4% of respondents answer with increase, and around 42% answer with decrease. This discrepancy could be explained using evidence acquired from the chi-square test of homogeneity, as a specific industry may have a higher distribution of a specific answer, but these results cannot be used due to the validity issues of the test (33% of cells contained expected counts less than five). Looking at the proportion of those who responded with increase, ignoring “I’m not sure / Prefer not to answer” selections, it can be seen that around 66.7% of casual restaurant respondents indicated an increase, while only 50% of fast casual restaurant respondents and 37.5% of café/beverage restaurant respondents indicated an increase. Although not as conclusive as a chi-square test of homogeneity, this evidence suggests a significantly higher proportion of respondents from casual restaurants perceived an increase in \$0 and 0% tipping values.

When comparing the results obtained from my survey to scholarly evidence, it becomes apparent that both of my hypotheses are corroborated. The following paragraphs will describe the evidence that supports these claims.

Hypothesis #1: Respondents will indicate an increase in the values of tips received.

Damon Alexander and his team found that tip recommendations affect tip amounts, but not customer satisfaction, patronage frequency, or bill size (2020). This evidence was corroborated by the study completed by Haggag and Paci, where it was found that the presence of this technology increased the values of tips received, additionally finding that subjects often left no tip when presented with abnormally high suggested amounts (2014). A report from Nathan Warren, Sara Hanson, and Hong Yuan authenticated claims from both of the previous studies, revealing that default tip levels affect customer response through customers' perceived control and affect (2021).

My study received similarly strong responses indicating an increase in tipping values since implementing that POS technology, confirming my initial belief that the restaurant industry will present results in line with those of previous experimental studies, suggesting that the results may be able to generalize onto the industry.

My question about the appearance of "\$0" or "0%" tipping values seems to be debated within the research community as well. In Haggag and Paci's study, they suggest that the presentation of default tips via POS technologies result in more customers inputting a tip of \$0 (2014). Contrary to this claim, Hanna Hoover's analysis of the same dataset did not provide support (2022). As far as I know, no other studies in this field have investigated this phenomenon, so the findings of my study cannot make any conclusive predictions. Further research is needed to shed more light on this topic.

Hypothesis #2: Respondents will indicate an increase in the number of tips received.

The study by Karniouchina and her colleagues found that the implementation of default tips on receipts will increase the total amount of tips received within the restaurant industry. This study was replicated by John S. Seiter, Garrett M. Brownlee, and Matthew Sanders, who found highly similar results (2011). Based on the fact that this technology is very similar to the POS default tip technologies used modernly, I presumed that my study would find similar results. A recent study, labeled "The Drivers of Social Preferences: Evidence From a Nationwide Tipping Field Experiment," found similar results to the other mentioned studies with the modern POS technology (2019). In addition, data collected from the leading service within my study, Toast, provided strong support for my hypothesis. According to their findings, the custom tipping feature enabled clients to receive tips on nearly 60 percent of credit card orders, a significant increase from the previous 28 percent prior to the client's use of the technology (Adams, 2018). My study received strong responses within this category, again leading me to believe that results from previously mentioned studies may be able to be generalized with this new technology.

Conclusion

My findings and their comparison to other scholarly research leads me to conclude that results that have been retrieved from other studies in the field can likely be generalized for the restaurant industry. The overwhelmingly positive responses towards increases in tipping values and increases in the number of tips received are in line with previous research on the topic. By implementing controls that require respondents to have worked at their restaurant for the same amount of time that the POS default tips had been implemented or longer, the credibility of the restaurant owners is established. This, in turn, affirms my confidence in the validity of the results presented regarding the opinions of restaurant owners.

It's important to mention that my study also produced some inconclusive results. The split consensus on the question regarding "\$0" or "0%" tipping values, combined with a split scholarly review, leads to no conclusion being made on the presence of these tipping values within the restaurant industry. Additionally, the lack of conclusive evidence on the chi-square tests of homogeneity leads to no distinctions being able to be made be-

tween the different categories of restaurants studied. Given the mix of conclusive and inconclusive evidence presented in this study, it is necessary to conduct further research on the topic in order to arrive at a conclusive understanding of these debated matters.

Limitations

There are multiple limitations with regards to my research process that are fundamental to consider when evaluating my findings. The first of which is the representation of restaurants within the sample. As stated in the method section, surveys were distributed manually because of the favorable response rate and timely return. Because of this, it would have been difficult to travel beyond my surrounding area in order to deliver the surveys. In the beginning of my data collection period, I attempted to distribute surveys via Gmail, but found that the response rate was exceptionally low. I looked into distributing emails by sending them out to executives, but similar concerns were raised. Cocyota and Harrison (2006) found that distributing surveys through the mail was a very time-consuming process, with average response rates decreasing year over year. In an attempt to maximize the amount of data I would be able to work with, I decided to restrict my population to my surrounding area of Nassau County, New York. With this approach, I was able to achieve a satisfactory response rate of around 55.36%.

Nassau County is an affluent suburban county located on Long Island, immediately to the east of New York City. According to the Vintage 2022 population estimates, the county has a population of over a million citizens, with a median household income of \$126,576 (*U.S. Census Bureau quickfacts: Nassau County, New York, 2022*). The differences between other counties and Nassau County, in terms of wealth, development, and population density, among other factors, could account for potential differences in consumer tipping patterns that could produce bias within my results, potentially limiting its generalizability in other areas.

Another possible limitation is the representation of POS services within my results. Eighteen out of the thirty-one respondents to my survey indicated that they used the service “Toast” to display their default tips.

Although the services provided by different providers are likely to be very similar, it is worth noting that there may be some misrepresentation. This could introduce additional bias to the results.

Furthermore, my survey only garnered responses from three out of the eight restaurant categories provided: “Casual,” “Fast Casual,” and “Café/Beverage.” The five categories not included in the results could contain differing consumer tipping patterns, limiting the generalizability of my results. These categories included “Diners,” “Bars/Pubs,” “Food Truck,” “Fast Food,” and “Fine Dining.”

The most significant limitation of my data is undoubtedly the sample size. I attribute this issue to my initial hesitation during the data collection process about the best approach to gather responses. The lack of a larger sample size prevented me from properly conducting the planned chi-square tests of homogeneity, which would have allowed me to differentiate trends within the categories of restaurants surveyed. As such, I was only able to make conclusions on the restaurant industry as a whole, not fully considering potential differences in managerial opinion between the categories of restaurants. Moreover, a smaller sample size amplifies the variability in my dataset, potentially leading to slightly inconsistent results.

Directions For Future Researchers

I believe there are two routes that can be taken to further research from my study. The first of these routes would involve replicating my research process in order to create a more accurate, defined prediction on consumer tipping patterns in the restaurant industry. Since conducting a field experiment to establish a causal relationship can be both expensive and time-consuming, this step may be more desirable. It can provide additional information and predictions that other researchers may use as a basis for conducting their own field experiments. For

these researchers, I recommend that they heed the messages present in my limitations section and alter their studies accordingly. This would involve increasing the sample representation, service representation, sector representation, and the sample size. If resources permit, another option would be to conduct a field experiment, similar to those of Alexander et. al, 2020 and Haggag & Paci, 2014. Looking at tactics that have been successful in studying the practice of tipping in restaurants would be highly beneficial in planning the methodology of this study. Michael Lynn, a researcher from Cornell University's School of Hotel Administration, has over 70 publications on the topic of tipping, in many of which he utilizes field experimentation in order to gather data. All these publications have undergone peer review and have been published in various national and international journals and are publicly accessible on tippingresearch.com.

Implications

The results indicate that implementing default tips via POS technology seems to result in an increase of tipping values and the number of tips received. This information could be very beneficial for the millions of restaurant owners, managers, and supervisors across the country. By implementing this new technology, they will be able to increase the tipping patterns within their restaurant, which will inherently increase the income of their servers and employees. According to a study conducted by researchers from the Harvard Business Review, higher income promotes greater employee productivity, retention, and satisfaction (Fisman & Luca, 2018). Looking at the stressful and volatile career as a server, it appears that driving up these factors is all important for restaurant executives. According to a meta-analysis conducted by Southern Medical University in Guangzhou, China, it was found that people being a waiter or waitress was one of the careers with the highest reported amount of stress, and it was found that these servers had a 22% higher risk of stroke on average than those with lower stress jobs (Huang et al., 2015). In addition, as mentioned earlier, the U.S. Bureau of Labor Statistics found that laborers in food preparation and serving-related occupations had the lowest average tenure out of 22 tested categories (2022). By recognizing the importance of efficient tip collection, in addition to the benefits of utilizing default tips with POS technology, restaurant executives will be able to create a positive, cooperative environment that will allow their restaurants to thrive for decades to come.

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