

How did the Covid-19 Pandemic Affect Restaurant Tipping?

Michael Lynn*

Cornell Hotel School

Journal of Food Service Business Research (in press)

Running head: Covid Effect on Restaurant Tipping

* Michael Lynn is the Michael D. Johnson and Family Professor of Services Marketing at the School of Hotel Administration at Cornell University. Address correspondence concerning this paper to the author at 552 Statler Hall, Cornell University, Ithaca, NY 14850 or WML3@cornell.edu.

Abstract

The results of three national surveys indicate that the Covid years 2021 and 2022 were associated with a decreased frequency or likelihood of restaurant tipping but an increased size of those tips left. These findings combine with previous research to suggest that tipping remains a viable compensation system even during prolonged crises. The Covid effect on tipping is not moderated by factors that would be expected if it were due to enhanced social-pressure, altruism, reciprocity, or cost considerations. Thus, more research is needed to fully understand the processes underlying the effects of the pandemic on tipping.

Keywords: Covid-19, tipping, restaurants

How did the Covid-19 Pandemic Affect Restaurant Tipping?

Consumers of many services around the world give voluntary sums of money (called “tips,” “propinas,” and “trinkgelds”) to the workers who served them. Individually, these payments often increase the costs of services by 10 to 20 percent (see Lynn and Lynn, 2004). Although reliable data on the total amount tipped in various countries each year is unavailable, the figure is undoubtedly large. For example, sales at full-service restaurants in the U.S. were estimated to be \$285 billion in 2019 (Klein, 2021) and the average restaurant tip was 20 percent of the bill (Discover, 2022), so it is likely that over \$50 billion was given in tips that year to workers in U.S. restaurants alone.

As a substantial voluntary consumer expenditure as well as a source of employee compensation, tipping has attracted research attention from scholars across varied basic-science disciplines (such as anthropology, economics, psychology, and sociology) and applied/management fields (such as hospitality, human resources, marketing, and tourism). A small and growing portion of the research on this phenomenon looks at the effects of different tipping policies on consumers, workers, and businesses (e.g., Alexander, et. al. 2021; Kwortnik, et. al. 2009; Lynn and Wang, 2013; Lynn, 2017). However, most of the research has focused on the determinants of consumers tipping decisions -- looking at the effects on tipping of individual differences in tipper characteristics, service-worker behaviors and characteristics, and contextual/environmental factors (see Azar, 2007, 2020; Lynn, 2015b, 2018, for reviews). The current study contributes to the latter body of research by examining the effects of the Covid-19 pandemic on restaurant tipping. Specifically, it: (i) attempts to conceptually replicate in restaurants existing findings regarding the effects of the pandemic on the internal and external margins of tipping, (ii) extends the time frame of previous covid-tipping studies up to June of 2022, and (iii) assesses

social-pressure, altruism, reciprocity, and cost explanations of Covid's effects on tipping by testing Covid-year interactions with variables that should moderate each of these potential underlying processes.

Background and Literature Review

Covid-19's Impact on Tipping

In early 2020, a deadly virus (COVID-19) emerged out of Wuhan China and spread quickly across the globe. The World Health Organization declared the disease a pandemic on March 11th, and the President of the United States declared a national emergency due to the disease on March 13th. Shortly thereafter, many states within the U.S. imposed temporary shutdowns of non-essential businesses, stay-at-home orders on citizens, and/or bans on large gatherings (c.f., Hauck, Gelles, Bravo and Thorson, 2020). Nonfarm employment in the U.S. fell by 20.5 million jobs in April and the U.S.'s gross domestic product decreased by 9.1 percent in the second quarter of 2020 (Bauer, et. al., 2020). Thus, the pandemic represented an economic as well as a health crisis. Although most states reopened their economies by June 2020, the pandemic's negative effects on health, businesses, and the economy persisted for much longer and many of those effects are still felt today.

The pandemic raised questions about its impact on tipping. Did economic hardship and uncertainty increase self-interested behavior and reduce voluntary tip payments? Alternatively, did compassion for service workers whose incomes were hurt by the pandemic, desires to equitably reward service workers for the increased health risks of working during the pandemic, and/or increased social pressures to appear compassionate and equitable during this time of need lead to increased tipping? The answers to these questions are of more than academic interest.

They speak to the utility of tipping as a form of employee compensation. For tipping to be a viable form of compensation, consumers must be willing to tip enough to meaningfully supplement service workers' wages. While it has long been clear that U.S. consumers are usually willing to tip generously in many service contexts, evidence that they would continue to do so in times of severe economic hardship and uncertainty was not previously available. Thus, evidence about the direction, robustness and generalizability of Covid-19 effects on tipping provides important information about tipping's viability as a source of employee compensation during such times of crisis.

The first studies to address these questions found that the pandemic's effects on tipping were largely positive. Specifically, in one study using daily records from a pizza delivery driver in Texas, Lynn (2021a) found that tips to the driver increased when the pandemic was named a national emergency and remained high through at least July of 2020. In a second study using daily data from across the U.S. provided by the payment company Square, he found that tips generally increased from January and February to April, May, June and July in 2020 more than they did during the same months the previous year. This difference-in-difference evidence that the pandemic increased tipping was observed for face-to-face and distance transactions at quick-service restaurants and for distance transactions at full-service restaurants. However, tips for face-to-face transactions at full-service restaurants exhibited the opposite pattern - they decreased from January and February to April, May, June and July in 2020 more than they did during the same months the previous year. Noting a long-standing consumer reluctance to tip for restaurant takeout, Lynn (2021) speculated that the negative pandemic effect on face-to-face tipping at full-service restaurants was "attributable to an increase in the ratio of take-out orders to

in-restaurant dining during the pandemic.” He concluded that the pandemic increased tipping except in cases where it degraded the services being tipped for.

Conceptually replicating some of Lynn’s (2021a) results in another service context, Katta and Ruane (2021) found that tipping for GoPuff delivery services in April of 2020 exceeded forecasts based on the previous years’ data. Also conceptually replicating some of Lynn’s (2021a) findings, but with important qualifications, was a study of tipping in Chicago taxicabs. Conlisk (2022) found that the likelihood of tipping cab drivers decreased during the pandemic, but that the size of those tips left increased. She also found that total tip income increased during the pandemic, so the positive effect on tip size was not just a selection effect resulting from the decrease in tipping likelihood. Furthermore, Conlisk found that both effects were moderated by the average income at the pick-up location – the decrease in tipping likelihood was larger when the trip originated in low-income areas and the increase in tip size was larger when the trip originated in middle- to high-income areas. Finally, she reported that tip sizes from passengers picked up in Democratic areas of the city increased with Covid hospitalizations significantly more than did tip sizes from passengers picked up in more Republican areas. Conlisk (2022) concluded that (i) “the pandemic led to more generous tipping behavior among passengers from high- and middle-income locations, while passengers from lower-income areas became more stingy with their tips (pg. 11),” and (ii) “the politicization of the pandemic has led passengers more likely to be Republican to be less likely to perceive a need to compensate the risk of infection with a higher tip (pg. 12).”

Conlisk’s (2022) findings that the pandemic had opposite effects on tipping at the internal and external margins and had different effects on people from high- and low-income areas as well as from Republican and Democratic areas are credible and interesting. However, they need

to be conceptually replicated in other contexts with other measures in-order to be sure they are reliable and generalizable and to increase confidence that the moderation effects are attributable to income and perceived health threat as she suggested rather than to other confounding differences between the pick-up locations. The study reported below provides this needed conceptual replication by examining the effects of the pandemic on the internal and external margins of restaurant tipping and the moderation of those effects by various individual and state differences. In addition, the study extends the time frame of previous covid-tipping studies up to June of 2022.

Underlying Theoretical Processes

In trying to conceptually replicate and extend existing research into Covid-19's effects on tipping, the studies reported here also provide tests of several processes thought to underlie those effects. In particular, they provide tests of social-pressure, altruism, reciprocity, and cost explanations of Covid's effects on tipping. Each of these potential effects are discussed in more detail below.

Social-pressure effects. Although voluntary, tipping is guided by social norms and expectations that people feel some social pressure to comply with. Conlisk (2022) noted that such social pressures often affect tipping differently at the external and internal margins. Specifically, she observed that existing research suggests that increased social pressures to leave a tip increase tipping likelihood, but decrease tip size (see Lynn, 2015a, 2021c). Conversely, social pressures to tip larger amounts increase tip sizes, but decrease tip likelihood (see Alexander, et. al.,2021; Haggag and Paci, 2014). This insight suggests that social pressures to tip more during the pandemic might have been responsible for the observed Covid-related decreases in tipping likelihood as well as the increases in tip sizes. In fact, numerous media outlets did

advocate and report more generous tipping during the pandemic (c.f., Babur-Winter, 2020; Flores, 2020; Markowitz, 2020; Tschorn, 2020). If social pressure did underlie the pandemic effects on tipping, then those effects might be larger in states whose residents are more motivated to tip by social pressure and norms. Accordingly, the moderating effects of state-level search for tip norm information and state-levels of sub-normative restaurant tipping are tested in the study below.

Altruism effects. Tipped workers in the U.S. are often paid less than the standard minimum wage by their employers and awareness of this fact leads many consumers to tip as a way of helping servers make a living (Lynn, 2022a). Such altruistic motivations for tipping may have been enhanced by the pandemic due to its negative effects on restaurant sales and on-premise dining (Klein, 2021), which significantly reduced server's opportunities to earn tips. The positive effects of Covid-19 on tip sizes are consistent with such an enhancement of altruistic tipping, but could be explained by other processes. If altruism does motivate tipping and contributed to the positive effects of the pandemic on tip sizes, then the pandemic's enhancement of perceived server need should have increased tip sizes more among groups and states with stronger altruistic inclinations. Specifically, tipping should have increased during the pandemic more strongly among residents of states with kinder and more charitable populations. The moderating effects of these state-level characteristics are tested in the study below.

Reciprocity effects. Traditionally, tipping is supposed to be an incentive/reward for the delivery of good service, so many academics have argued that reciprocity and equity considerations underlie this behavior (c.f., Lynn, 2015b). Such reciprocity motivations for tipping may have been enhanced by the pandemic due to the increased risks of infection, illness, and death faced by servers working during the outbreak. The positive effects of Covid-19 on tip

sizes are consistent with such an enhancement of reciprocity tipping, but could be explained by other processes. If reciprocity motives did contribute to the positive effect of the pandemic on tip sizes, then that effect should be stronger among groups who perceived Covid-19 as a serious health threat than among groups who perceived Covid-19 as more benign. Conlisk's (2022) finding that the number of Covid-19 deaths predicted tip size more weakly when the taxi-ride originated in relatively Republican wards of Chicago is consistent with this expectation, but could be due to other confounding differences among the wards. Stronger support for reciprocity effects would be provided if other proxies for, or measures of, perceived health threat also moderated the pandemic's effect on tip sizes. The moderating effect of one such measure – an index of state level behaviors reflecting perceptions of Covid as a health threat – is tested in the study below.

Cost effects. Tipping involves the voluntary loss of money that could be used to purchase other goods and services, so it should be constrained by cost considerations and resource limits. Indeed, that is why tipping is regarded as anomalous and puzzling by many economists (see Landsburg, 1993; Mankiw, 2007). The pandemic negatively affected the incomes of many workers' and this could have strengthened their cost-consciousness, which in turn reduced their likelihood of tipping. Conlisk's (2022) observation of more negative pandemic effects on tipping likelihood when the taxi-ride originated in poorer areas is consistent with this possibility, but that moderation effect could be due to other confounding differences between the pick-up areas. If cost considerations do constrain tipping and moderate the pandemic's effects on tipping, then other measures and proxies of income should moderate those effects as well. The moderating effect of two such measures – individuals' household incomes and state level economic impacts of the pandemic – are tested below.

Method

The data for this study come from three online surveys commissioned by Creditcards.com, conducted by YouGov plc in September 2019, July 2021, and June 2022, and provided to the author for academic use. Over 2,000 respondents to each survey were solicited from YouGov's panel of U.S. consumers who signed up to complete surveys in exchange for various rewards. A total of 7,752 respondents completed the surveys, but missing values for some variables mean that sample sizes are smaller and vary across analyses. The variables collected in each survey and analyzed here are described below.

Likelihood of Restaurant Tipping

Respondents were asked: "How often, if ever, do you leave a tip or gratuity for each of the following?" All three surveys included "servers or waitstaff at a sit down restaurant" in the list of services following this statement. Response options were: "Always" (coded as 4), "Most of the time" (coded as 3), "Only sometimes" (coded as 2), "Never" (coded as 1), and "Not applicable – I don't use this type of product/service" (coded as missing value).

Restaurant Tip Percent

In 2019, respondents were asked: "When dining out at a sit-down restaurant, on average, what percent of the total bill do you leave as a tip for the server or wait staff? Please type your answer in the box below." Responses were re-coded by YouGov and made available as: 1-4%, 5-9%, 10-14%, 15%, 16%, 17%, 18%, 19%, 20%, and 21%+ .

In 2021 and 2022, respondents were asked: On average, what percent of the total bill do you leave as a tip when Dining in a sit-down restaurant? Please type your answer in the boxes below

as a whole number between 1 and 100.” Raw responses, which were made available, were recoded by the author into the categories used in 2019.

For analysis, the categorized tip percentages were assigned values of 3, 7, 12, 15, 16, 17, 18, 19, 20, and 25 respectively.

Geo/Demographics

Standard geo/demographic information about the respondents was also provided. Those variables analyzed in this study were:

- Sex (male = 1, female = 2),
- Age (in years),
- Race (White, Black, Hispanic, Other; coded as dummy variables contrasted with White),
- Household Income (ordinal measure where 1 = Under \$40K, 2 = \$40K to \$79.9K =2, and 3 = \$80K+),
- Education (ordinal measure where 1 = No HS, High School graduate, 2 = Some college, 2-year, 3 = 4-year, and 4 = Post Grad), and
- State (coded as a nominal variable and used to examine the effects of several state level variables as described below).

State-Level Predictors

Search for tipping norm information. State differences in search for tip norm information were obtained using data from Google trends collected by Lynn (2022b). Google Trends reports search data for specific terms in specified time periods and geographic areas that has been normalized by dividing each data point by the total searches in that time period and geographic

area. Lynn (2022b) used Google Trends to measure state-level frequencies of searches from 2004 to April 2020 involving the phrase “how much to tip.”

Sub-normative restaurant tipping. State differences in sub- and super-normative restaurant tipping were obtained from data reported by Lynn (2020,2022b). Specifically, his April 2013 transaction level data from 4 restaurant chains provided by NCR was used to calculate the proportion of observations in each state with a tip that were lower than 15% of the bill. This measure covered every state except Alaska.

Charitableness. Data on the percentages of people in each state donating to charity and volunteering in 2013 were obtained from a Gallup Survey reported by Chappell (2014). These items were averaged to form an index of state charitableness, which had a coefficient alpha of .54.

Kindness. Data on average state kindness, defined as a willingness to help others at some cost to the self, was obtained from an unpublished manuscript by Curry, Wilkinson and Krasnow (2021). These researchers show that scores on their Kindness Questionnaire (KQ) have good convergent and discriminant validity and they report state means of KQ scores from a large sample recruited in roughly equal numbers from each of the 50 states. Those state means were used as state-level measures of kindness in the current study.

Perceived seriousness of the Covid-19 health threat. Data on the percentage of people in each state: (i) claiming in monthly surveys from April to September 2020 to always wear masks in public were obtained from Fischer, et al (2021), (ii) voting for Trump in the 2020 election were obtained from [cookpolitical.com/2020-national-popular-vote-tracker](https://www.cookpolitical.com/2020-national-popular-vote-tracker), and (iii) being fully vaccinated as of June 21, 2022 were obtained from Our World in Data. Trump and his supporters

have largely downplayed the seriousness of the health threat posed by Covid-19. Wearing masks and getting vaccinated are ways of reducing those risks from Covid-19. Therefore, these three data points were averaged (after subtracting Trump support from 100) to form an index of the perceived seriousness of the Covid-19 health threat in each state. This state-level measure of the percentage of the people in each state taking the health threat of Covid-19 seriously, can also be thought of as the likelihood that individual survey respondents in each state considered the health threat of Covid-19 to be serious. The three-item index had a coefficient alpha of .89.

Economic impact of Covid. Data on the economic impact of Covid-19 on each states' economy was obtained from Politico.com. They created an index of economic performance during the pandemic by comparing seasonally adjusted post-pandemic 2020 and 2021 economic performance measures to those of 2019. The performance metrics were: (i) quarterly state GDP, (ii) monthly change in nonfarm employee payrolls, and (iii) monthly change in unemployment rate.

Results

Descriptive statistics for the individual-level variables in this study are presented in Table 1. Regressions of tip frequency and tip percent on years, respondents' demographic characteristics, and the interaction of those characteristics with years are presented in Table 2. These analyses used robust standard errors. Regressions of tip frequency and percent tip on Covid year and state-level measures of search for tip norm information, normative tipping, charitableness, kindness, tipping generosity, perceived health threat of Covid-19, state economic performance during Covid-19, and their interactions with Covid years (while controlling for respondents' demographic characteristics) are presented in Tables 3 and 4. Since the key moderators in these

later models were measured at the state-level, those analyses used robust standard errors clustered within state. Key findings are briefly described and discussed below.

Demographic Main Effects

Both tip frequency and non-zero tip percentages were higher for older, female, white, wealthier, and more educated consumers in this study (see Table 2, Columns 1 & 3). These effects replicate some previous findings about tipper demographic effects on tipping but differ from others. Previous studies have found that older, female, white, higher income, and more educated consumers are more likely to tip, and/or tip larger amounts, than do their counterparts, but null or even opposite effects of these demographic characteristics on tipping have also been observed (see Jahan, et. al., 2020; Lynn, 2007, 2009, 2021b). Resolving the inconsistencies in this literature is beyond the scope of the current investigation and is left for future researchers to attempt.

Covid-Year Main Effects

Relative to pre-Covid 2019, tipping frequency decreased and non-zero tip percentages increased in both the Covid years of 2021 and 2022 (see Table 2, Columns 1 & 3). These findings conceptually replicate similar results reported by Conlisk (2022) in a different service context and using a different type of data. They also extend those findings by demonstrating that the apparent Covid effects on tipping persisted thru at least June 2022.

The finding that tip percentages for dining at sit-down restaurants went up during 2021 and 2022 also conceptually replicates Lynn's (2021a) findings that tip amounts increased during Covid for credit-card absent transactions at full-service restaurants and for all transactions at limited-service restaurants, but differs from his finding that tip amounts decreased for credit-card

present transactions at full-service restaurants. Lynn attributed his negative pandemic effect on credit-card present, full-service restaurant tip percentages to an increase in carry-out relative to dine-in services during Covid, so he concluded that “the pandemic enhanced tipping for those services whose fundamental nature did not change, but decreased tipping for those services whose benefits it degraded” (Lynn, 2021a, pg. 141). The current finding of a positive Covid-Year effect on tipping in a study that focused on “dining in” (or “dining out at”) a sit-down restaurant is consistent with Lynn’s explanation of his mixed findings and further supports his overall conclusion about the pandemic’s effects on tipping.

Tests indicated that neither mean tipping frequency ($B = -.01$, $SE = .02$, $t(6296) = -.53$, n.s.) or mean non-zero tip percentages ($B = .10$, $SE = .17$, $t(6044) = .59$, n.s.) in 2022 were significantly different from what they were in 2021, so the tests of moderators of Covid’s effects on tipping reported below will compare 2019 with both 2021 and 2022 combined.

Individual-Difference Moderators of the Covid-Year Effects

A significant positive coefficient for the Age x Covid-Year interaction effect on tipping frequency indicates that the pandemic decreased tipping frequency more for younger than for older respondents (see Figure 1). This may be because younger people like tipping less and are less intrinsically motivated to tip than are older people (see Lynn, 2021b). The only other variable that significantly moderated the Covid-Year effects on tipping frequency was other race vs whites. The pandemic decreased tipping likelihood among members of the other racial category than among Whites for reasons that are unclear. None of the other tipper demographics reliably moderated the decreases in tipping frequency (see Table 2). That the Covid-Year decreases in tipping frequency were not moderated by income fails to conceptually replicate a previous finding that the frequency of taxicab tipping declined during the pandemic more when

the taxi ride originated in less wealthy neighborhoods (Conlisk, 2022) and it casts doubt on the idea that income precarity drove the observed decreases in tipping frequency during the pandemic.

The Covid-Year increase in size of non-zero tip percentages was reliably moderated by respondent sex, income and education (see Table 2). The pandemic increased tip amounts from female, wealthier, and less educated respondents more it did from their counterparts. None of the other respondent demographics significantly moderated the Covid-Year effects on tip percentages. The stronger pandemic enhancement of tip percentages among wealthier respondents (see Figure 2) conceptually replicates Conlin's (2022) finding that the pandemic increased taxicab tip sizes more when the ride originated in wealthier areas and it provides additional evidence that the effect is constrained by cost considerations and resource availability. The other two moderators are novel and interesting. That the pandemic increased women's tip sizes more than men's could reflect women's greater empathy and caregiving. Similarly, that the pandemic increased less educated people's tip sizes more than those of highly educated people could reflect a greater sympathy for those economically hurt by the pandemic, which affected the less educated the most. However, these explanations are speculative and others are clearly possible.

State-Level Moderators of Covid-Year Effects

The Covid-Year decrease in tipping frequency was reliably stronger in states with more sub-normative tipping (see Table 3). This effect suggests that either: (i) the pandemic decreased tipping likelihood by weakening social pressures to tip, or (ii) the pandemics' negative effect on tipping likelihood was weakened by stronger pre-existing social pressures to tip. None of the

other state-level characteristics examined here moderated the pandemic's negative effect on tipping frequency.

The Covid/Year increase in non-zero tip percentages was reliably mediated only by state charitableness (see Table 4). The pandemic increase in tip sizes was larger in more charitable states. The coefficient for the Super-Normative Tipping X Covid Year interaction was also positive but not statistically significant. These findings support the altruism explanation for Covid-19's effects on tip sizes but not the social pressure or reciprocity explanations.

One reviewer noted that both of the state level characteristics moderating covid's effects on tipping – sub-normative tipping and charitable giving – were from 2013 and, therefore, dated. However, if anything, this should have weakened their effects. There is no good reason to believe that being dated would artificially inflate a variable's relationship to newer measures.

Summary, General Discussion, and Conclusions

The results of this study indicate that the Covid years 2021 and 2022 (as compared to pre-Covid 2019) were associated with a decreased frequency or likelihood of restaurant tipping but an increased size of those tips left. The negative Covid/Year effect on tipping frequency/likelihood was greater among younger people and in states with more sub-normative tipping to begin with. Importantly, it was not moderated by tippers' incomes or states' economic declines during the pandemic. The positive Covid/Year effect on tip size was greater among females, the wealthy, less educated people, and people from more charitable states. Notably, it was not moderated by state differences in search for tipping norm information, prior compliance with the restaurant tipping norm, super-normative tipping, kindness, economic declines during the pandemic, or perceptions of the seriousness of the pandemic's threat to health. The

theoretical and practical implications and contributions of these findings are discussed below along with directions for future research.

Covid's Impact on Tipping

The cross-sectional correlational nature of the data in this study precludes strong causal inferences from its results alone, but the results of this study join previous findings consistent with the idea that the pandemic decreased tipping frequency/likelihood while increasing the size of those tips left (Conlisk, 2022; Katta and Ruane, 2021; Lynn, 2021a). Those previous studies used numerous controls and analytic techniques (such as difference in differences analyses) to rule out many alternative explanations for their effects, so it seems more likely than not that the pandemic caused the observed changes in tipping behavior. What the current conceptual replication adds to those previous findings is evidence suggesting that they generalize to on-premise dining at sit-down restaurants and that they persisted through at least June 2022.

Theoretically, this new evidence of Covid-19 main effects reinforces and supports the ideas that the drivers of tipping often differ at the internal and external margins (Conlisk, 2022) and that previous findings of a negative pandemic effect on tipping for face-to-face sit-down restaurant transactions were attributable to an increase in the proportion of carryout orders during the pandemic (Lynn, 2021a). Practically, the findings reinforce and support the idea that tipping remains a viable compensation method even during prolonged economic and health crises.

Explanation for Decreased Tipping Likelihood During the Pandemic

Conlisk (2022) proffered two potential explanations for her finding that the pandemic decreased the likelihood of tipping. First, she suggested that the pandemic adversely affected the economic prospects of many (predominately low-income) consumers and that this may have

increased their cost-consciousness and reduced their tipping. Consistent with this explanation, she reported that the negative pandemic effect on tipping likelihood was more pronounced when the taxicab ride originated in relatively poor areas of Chicago. The current findings fail to conceptually replicate this moderation effect and call into question her explanation for it. Specifically, the failures to find that the negative pandemic effect on tipping frequency was moderated by tippers' incomes or by states' economic declines during the pandemic undermine an economic precarity explanation for the effect.

Second, Conlisk (2022) suggested that the negative pandemic effect on tipping likelihood might stem from social pressures to tip larger amounts during the pandemic. Social pressures to tip larger amounts have been found to decrease tipping likelihood even as they increase the size of tips left (Alexander, et. al. 2021; Haggag and Paci, 2014). Apparently, people unwilling or unable to comply with social pressures to tip more decide that it is preferable to leave no tip than to leave a sub-normative tip. This suggests that the negative pandemic effect on tipping likelihood should be stronger among those less likely to comply with pandemic-related social pressures to tip more. The current findings that the pandemic decreased tipping frequency more among young people and in states with more sub-normative tipping are consistent with this expectation. However, another possibility consistent with these interactions is that people who dislike and are resistant to tipping simply used the pandemic as an excuse to stop tipping. Still another possibility is that some other process caused people to tip less often during the pandemic and these interactions reflect a countering of that process by normative and social pressures to tip. Thus, it remains unclear why the pandemic decreased tipping likelihood and more research is needed on this issue.

Explanations for Increased Tip Sizes During the Pandemic

Three explanations for Covid's increase of tip sizes seem likely. Specifically, this effect could be due to compassion for service workers whose incomes were hurt by the pandemic, desires to equitably reward service workers for the increased health risks of working during the pandemic, and/or increased social pressures to appear compassionate and equitable during this time of need. However, as discussed below, the current results provide support only for the altruism/compassion explanation and only partial support at that.

Altruism/compassion. If Covid-19 increased tip sizes because people wanted to help out service workers whose incomes declined during the pandemic, then it is reasonable to expect that pandemic effect on tipping to be larger among kinder and more charitable people. The current findings provide partial support for these expectations. Covid Year did not significantly increase tip sizes in states with kinder populations. However, it did increase tip sizes more in highly charitable states than in less charitable ones. It is difficult to know what to make of these mixed results, but it is possible that kindness was a less valid or sensitive measure of altruism/compassion than was charitable giving of time and money. The measure of state kindness used here was based on Curry, Wilkinson and Krasnow's (2021) new and unpublished kindness questionnaire and little is known about its sensitivity and validity as a state-level measure. Consistent with this possibility state kindness was not reliably related to state generosity in state level analyses of these variables ($r = .12$, $n = 50$, n.s.). More research on this issue is clearly needed, but the positive interaction of Covid Year with state charitableness provides more support for an altruism/compassion explanation of the pandemic's enhancement of tips sizes than any of the other explanations receive.

Reciprocity. If Covid-19 increased tip sizes because people wanted to compensate workers for the increased health risks of serving them during the pandemic, then that pandemic effect should be larger among people who perceive Covid-19 as a serious health threat more than among people who do not perceive it as a serious health threat. Consistent with this expectation, Conlisk (2022) found that tip sizes from passengers picked up in Democratic areas of Chicago increased with Covid hospitalizations significantly more than did tip sizes from passengers picked up in more Republican areas. However, pick-up locations in Chicago differ on many dimensions and differ only slightly in Republican vs Democrat leanings, so they are of questionable validity as a proxy for perceptions of Covid-19's threat to health. Accordingly, the current study sought to conceptually replicate this interaction using a different measure of perceived health threat. Its findings indicate that the pandemic increased tips equally in states where the pandemic was perceived as a serious threat and in states where it was not. This failure to find a Perceived Health Threat X Covid Year interaction seriously undermines a reciprocity or hazard-pay explanation for the pandemic's effect on tip size.

Social pressure. If Covid-19 increased tip sizes because people felt social pressures to tip more during this time of need, then that effect on tip sizes should have been stronger among those most concerned about and compliant with social expectations. Contrary to this expectation, the current study found that the positive Covid Year effect on tip size was comparable across states with many vs few searches for tip norm information and across states with many vs few sub-normative tippers. These findings undermine the idea that the pandemic's enhancement of tip sizes was driven by social pressures to appear compassionate or equitable.

Multiple processes. The failure to find all but one expected interaction between Covid Year and various state characteristics raises questions about the validity of the altruism,

reciprocity and social pressure explanations for the pandemic's enhancement of tip sizes as discussed above. However, something is causing the effect and these are the most likely causal processes. Perhaps all three explanations for tipping more during the pandemic underlie its effects on tip size, but the effects of those processes are at best weakly additive. In other words, perhaps one reason for tipping more during the pandemic was sufficient to affect behavior and though states differed in how compelling their populations found any particular reason, they did not differ substantially in how compelling their populations found at least one of them. That could explain the null interactions in the current study because multiple underlying processes might have weakened the effects of any state-level moderator operating on only one of those processes. If appropriate data can be obtained, this possibility should be further investigated.

Conclusions

The data from this study joins previous research findings in suggesting that Covid-19 decreased the frequency or likelihood of tipping across many service contexts, but increased the size of those tips left. Moreover, these effects persisted through at least June of 2022, suggesting little tipping fatigue. Thus, tipping appears to remain a viable compensation system even during prolonged crises. Moderation of the negative effect on tipping likelihood by state level of sub-normative tipping, but not by individual income, is consistent with a backlash against social pressure and inconsistent with an economic precarity explanation. Moderation of the positive effect on tip size by state charitableness, but not by state level of sub-normative tipping or by state differences in the perceived seriousness of the health threat posed by Covid-19, is consistent with a compassionate helping of service workers explanation and inconsistent with social-pressure or hazard pay explanations. However, it is possible that the operation of all these explanatory processes weakened the effects of any state-level moderator operating on only one

of those processes. Thus, more research is needed to fully understand the processes underlying the effects of the pandemic on tipping.

Disclosure Statement: The authors report there are no competing interests to declare.

Data Availability Statement: The data used in this paper are available at:

<https://data.mendeley.com/datasets/rcrznynx43d/1>

References

- Alexander, D., Boone, C., & Lynn, M. (2021). The effects of tip recommendations on customer tipping, satisfaction, repatronage, and spending. *Management Science*, 67(1), 146-165.
- Azar, O. H. (2007). The social norm of tipping: A review 1. *Journal of Applied Social Psychology*, 37(2), 380-402. Azar, O. H. (2020). The economics of tipping. *Journal of Economic Perspectives*, 34(2), 215-36.
- Conlisk, S. (2022). Tipping in crises: Evidence from Chicago taxi passengers during COVID-19. *Journal of Economic Psychology*, 89, 102475.
- Discover, (2022). What is the average tip in America? <https://www.discover.com>, accessed 9-1-2022.
- Bauer, L., Broady, K., Edelberg, W. and O'Donnell, J. (2021). Ten facts about COVID-19 and the US economy. White paper for the Hamilton Project. Available at <https://www.brookings.edu/research/ten-facts-about-covid-19-and-the-u-s-economy/>, accessed 9-1-2022.
- Babur-Winter, O. (2020) Why you should tip generously right now (even on takeout). <https://www.foodandwine.com/travel/restaurants/restaurant-tipping-policy-takeout-coronavirus>, accessed 9-1-2022.
- Chappell, B. (2014). What are the most (and least) charitable U.S. states? <https://www.npr.org/sections/thetwo-way/2014/05/09/311097781/what-are-the-most-and-least-charitable-u-s-states>, accessed 9-1-2022.
- Curry, O.S., Wilkinson, J. and Krasnow, M. (2021). Getting the measure of kindness. Unpublished manuscript, Kindness.org.
- Fischer, C. B., Adrien, N., Silguero, J. J., Hopper, J. J., Chowdhury, A. I., & Werler, M. M. (2021). Mask adherence and rate of COVID-19 across the United States. *PLoS One*, 16(4), e0249891.
- Flores, S. (2020). How much should you tip during the pandemic? We asked 3 experts. <https://www.businessinsider.com/experts-on-how-much-to-tip-at-restaurants-during-pandemic-2020-7>, accessed 9-1-2022.
- Haggag, K., & Paci, G. (2014). Default tips. *American Economic Journal: Applied Economics*, 6(3), 1-19.
- Hauck, G., Gelles, K., Bravo, V. and Thorson, M. (2020). Five months in: A timeline of how COVID-19 has unfolded in the U.S.. USA Today, June, 23. <https://www.usatoday.com/>, accessed 8-12-20.

Jahan, N., Leschewski, A., & Davis, D. E. (2020). Restaurant Tipping Discrimination: Evidence from a Representative Sample of US Households. *Journal of Agricultural & Food Industrial Organization*.

Klein, D. (2021). COVID's remarkable impact on restaurants, 18 months later. <https://www.qsrmagazine.com>, accessed 9-1-2022.

Katta, S., & Ruane, R. (2021). The Effect of COVID-19 on Altruism: Evidence From Tipping Behavior at goPuff., Unpublished manuscript, Temple University. Available at https://kattasa.github.io/files/srikar_katta_gopuff_tipping.pdf, accessed 9-1-2022.

Kwortnik Jr, R. J., Lynn, W. M., & Ross Jr, W. T. (2009). Buyer monitoring: A means to insure personalized service. *Journal of Marketing Research*, 46(5), 573-583.

Landsburg, S. E. (2007). *The Armchair Economist (revised and updated May 2012): Economics & Everyday Life*. Simon and Schuster.

Lynn, M. (2007). Race differences in restaurant tipping: A literature review and discussion of practical implications. *Journal of Foodservice Business Research*, 9(4), 99-113.

Lynn, M. (2009). Individual differences in self-attributed motives for tipping: Antecedents, consequences, and implications. *International Journal of Hospitality Management*, 28(3), 432-438.

Lynn, M. (2015). Service gratuities and tipping: A motivational framework. *Journal of Economic Psychology*, 46, 74-88.

Lynn, M. (2017). Should US restaurants abandon tipping? A review of the issues and evidence. *Psychosociological issues in human resource management*, 5(1), 120-159.

Lynn, M. (2018). Are published techniques for increasing service-gratuities/tips effective? P-curving and R-indexing the evidence. *International Journal of Hospitality Management*, 69, 65-74.

Lynn, M. (2020). The Effects of Minimum Wages on Tipping: A State-Level Analysis. *Compensation & Benefits Review*, 52(3), 98-108.

Lynn, M. (2021a). Did the COVID-19 pandemic dampen Americans' tipping for food services? Insights from two studies. *Compensation & Benefits Review*, 53(3), 130-143.

Lynn, M. (2021b). Effects of the Big Five personality traits on tipping attitudes, motives, and behaviors. *International Journal of Hospitality Management*, 92, 102722.

Lynn, M. (2021c). The effects of injunctive and descriptive tipping norms on tipping behavior and motives. *Journal of Behavioral and Experimental Economics*, 95, 101786.

Lynn, M. (2022a). How tip credits affect consumer tipping behavior. *International Journal of Hospitality Management*, 103, 103214.

Lynn, M. (2022b). State differences in tipping attitudes and behavior: Attributable to state differences in tipping motivations? *Review of Regional Studies*, in press.

Lynn, M., & Lynn, A. (2004). National values and tipping customs: A replication and extension. *Journal of Hospitality & Tourism Research*, 28(3), 356-364.

Lynn, M., & Wang, S. (2013). The indirect effects of tipping policies on patronage intentions through perceived expensiveness, fairness, and quality. *Journal of Economic Psychology*, 39, 62-71.

Mankiw, G. (2007). No, really, it's up to you. Greg Mankiw's Blog, October 1, <http://gregmankiw.blogspot.com/2007/10/no-really-its-up-to-you.html>, accessed 9-1-2022.

Markowitz, A. (2020). A guide to tipping during the pandemic. <https://www.aarp.org/money/budgeting-saving/info-2020/pandemic-tipping-guide.html>, accessed 9-1-2022.

Tschorn, A. (2020). Who to tip and how much for doorstep deliveries during the COVID-19 pandemic. <https://www.latimes.com/lifestyle/story/2020-05-08/coronavirus-tipping-etiquette-how-to-show-appreciation>, accessed 9-1-2022.

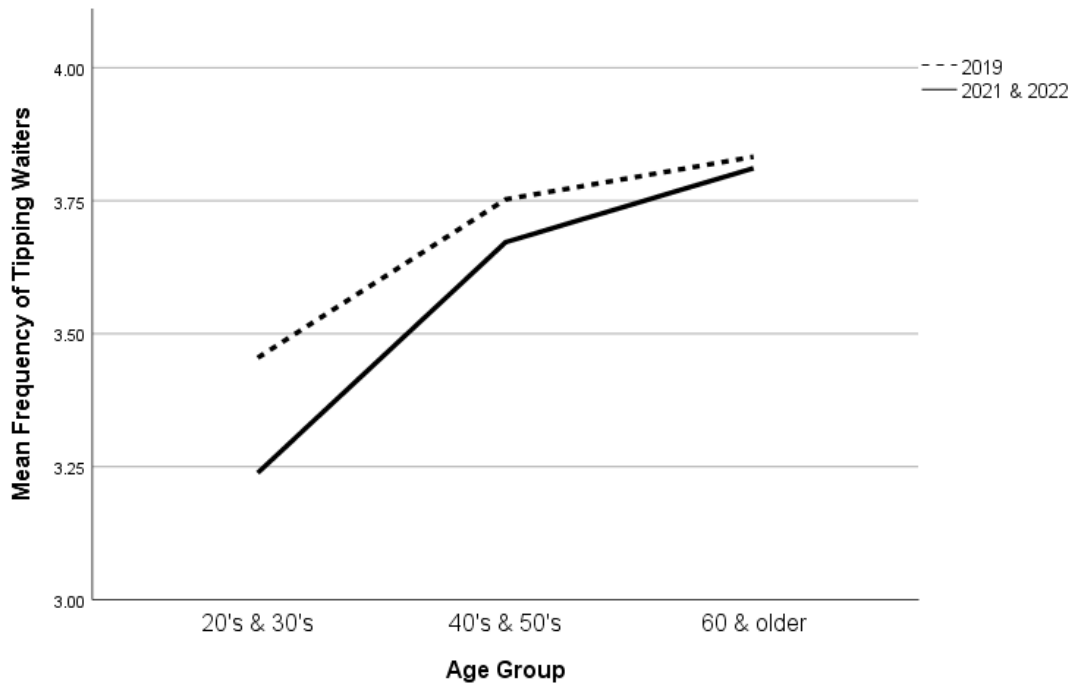


Figure 1. Tipping frequency declined during the pandemic years more for younger people than for older ones.

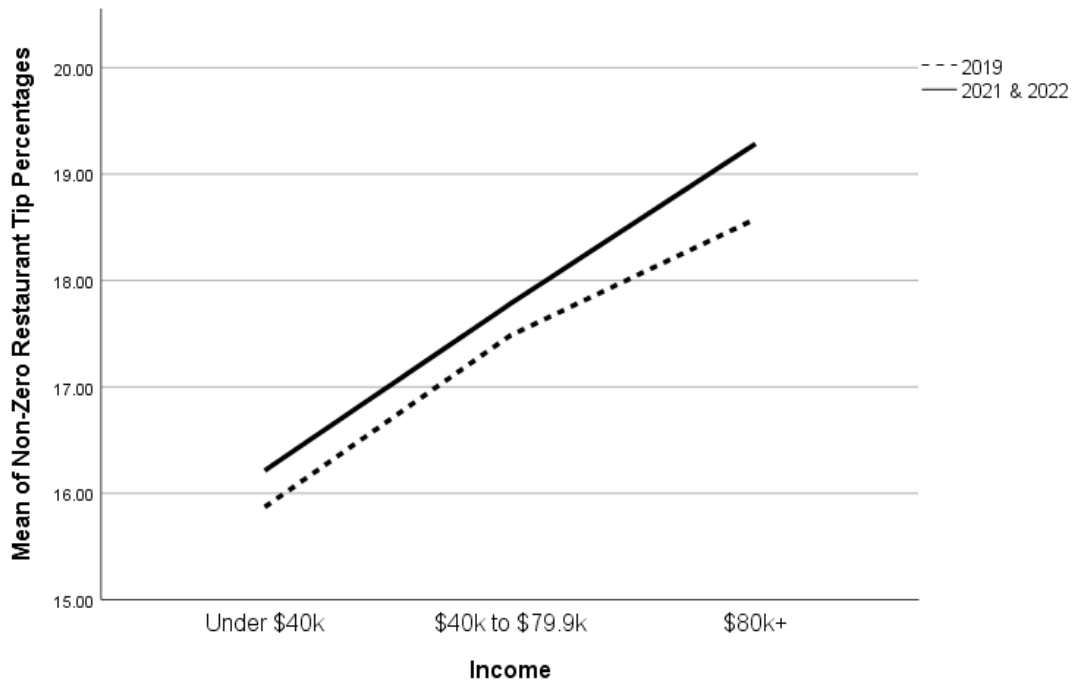


Figure 2. Non-zero tip sizes increased during the pandemic years more for people with larger incomes.

Table 1. Descriptive statistics for the individual-level variables in this study.

	N	Minimum	Maximum	Mean	Std. Deviation
Age	7752	18	98	46.74	17.40
Female	7752	.00	1.00	.53	.50
Black	7752	.00	1.00	.13	.33
Hispanic	7752	.00	1.00	.14	.35
Other Race	7752	.00	1.00	.09	.29
Income	6742	1	3	1.90	.82
Education	7752	1	4	2.01	.99
Perceived Threat	7752	37.37	74.59	56.83	7.28
Economic Performance	7731	.00	90.00	48.58	18.93

Table 2. Coefficients (and robust standard errors) from regressions of tipping on years, respondents' demographic characteristics and the interaction of those characteristics with years.

	Tip Frequency	Tip Frequency	Tip Percent	Tip Percent
Constant	2.81*** (.05)	2.98*** (.07)	13.68** (.35)	14.11*** (.57)
Covid Year		-.33** (.09)		-.08 (.71)
Yr2021	-.08*** (.02)		.51*** (.16)	
Yr2022	-.10*** (.02)		.61*** (.16)	
Age	.01*** (.001)	.01*** (.001)	.01* (.004)	.01** (.007)
Female	.12*** (.02)	.09** (.03)	.27* (.14)	-.10 (.22)
Black	-.41*** (.04)	-.40*** (.06)	-2.00** (.26)	-2.04*** (.48)
Hispanic	-.30*** (.03)	-.32*** (.06)	-1.41*** (.24)	-1.49*** (.40)
Other Race	-.19*** (.04)	-.06 (.06)	-.49† (.28)	-1.00* (.45)
Income	.10*** (.01)	.09*** (.02)	1.14*** (.09)	.85*** (.15)
Education	.07*** (.01)	.06*** (.02)	.52*** (.07)	.73*** (.12)
Age x Covid Year		.003** (.001)		.001 (.01)
Female x Covid Year		.04 (.04)		.58* (.28)
Black x Covid Year		-.01 (.08)		.08 (.58)
Hispanic x Covid Year		.04 (.07)		.09 (.49)
O. Race x Covid Year		-.18* (.08)		.72 (.57)
Income x Covid Year		.02 (.03)		.44* (.18)
Education x Covid Year		.02 (.02)		-.32* (.14)
N subjects	6,306	6,306	6,054	6,054
R ²	.156***	.159***	.079***	.080***

† p < .10, * p < .05, **p < .01, ***p < .001

Table 3. Coefficients (and robust standard errors clustered with state) from regressions of tipping frequency on Covid Year (y/n), state-level predictors, and their interactions with Covid Year (while controlling for tipper demographics).

	Tip Frequency	Tip Frequency	Tip Frequency	Tip Frequency	Tip Frequency	Tip Frequency
Age, Female, Black, Hispanic, Other race, Income, Education, Constant	included	included	included	included	included	included
Covid Year	-.16† (.08)	.06 (.06)	-.77† (.44)	-1.03 (1.03)	-.20 (.12)	-.03 (.05)
Search for Tip Norm Info	-.002 (.001)					
Search x Covid Year	.001 (.002)					
Sub-Normative Tipping		-.03 (.29)				
Sub-Normative x Covid Year		-.62** (.21)				
Charitableness			-.002 (.008)			
Charitableness x Covid Year			.013 (.008)			
Kindness				.001 (.01)		
Kindness x Covid Year				.01 (.01)		
Perceived Health Threat					-.005** (.002)	
P. Threat x Covid Year					.002 (.002)	
Economic Performance						.002† (.001)
E. Performance x Covid Year						-.001 (.001)
N subjects (N clusters)	6,306/50	6,272/48	6,187/48	6,287/49	6,306/50	6,287/49
R ²	.156***	.154***	.157***	.155***	.157***	.155***

† p < .10, * p < .05, ** p < .01, *** p < .001

Table 4. Coefficients (and robust standard errors clustered with state) from regressions of percent tip on Covid Year (y/n), state-level predictors, and their interactions with Covid Year (while controlling for tipper demographics).

	Percent Tip	Percent Tip	Percent Tip	Percent Tip	Percent Tip	Percent Tip	Percent Tip
Age, Female, Black, Hispanic, Other race, Income, Education, Constant	included	included	included	included	included	included	included
Covid Year	1.49* (.56)	.87 (.81)	-.61 (1.13)	-5.50* (2.26)	2.21 (6.95)	1.76 (1.13)	-.06 (.38)
Search for Tip Norm Info	.01 (.01)						
Search x Covid Year	-.02 (.01)						
Sub-Normative Tipping		-2.14 (3.33)					
Sub-Normative x Covid Year		-1.25 (3.33)					
Super-Normative Tipping			.98 (3.80)				
Super-Normative x Covid Year			3.57 (3.40)				
Charitableness				-.08 (.04)			
Charitableness x Covid Year				.12** (.04)			
Kindness					-.04 (.07)		
Kindness x Covid Year					-.02 (.09)		
Perceived Health Threat						.01 (.02)	
P. Threat x Covid Year						-.02 (.02)	
Economic Performance							-.01 (.01)
E. Performance x Covid Year							.01† (.01)
N subjects (N clusters)	6,054/50	6,024/48	6,024/48	5,941/48	6,037/49	6,054/50	6,037/49
R ²	.079***	.078***	.078***	.078***	.078***	.079***	.078***

† p < .10, * p < .05, **p < .01, ***p < .001