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State Differences in Tipping Attitudes and Behavior: Attributable to State Differences in Tipping Motivations? *

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Abstract: Consumers around the world give away billions of dollars annually in the form of voluntary payments (aka, tips) to service workers who have served them. This widespread and important economic activity varies across geographic areas within nations, but that geographic variability has been under-studied. This paper seeks to answer the question: “Are state differences in tipping attitudes and behavior attributable to state differences in motivations for tipping?” To that end, new measures of average tipping attitudes and motives in each of the states of the United States are developed, and their relationships with state tipping behaviors, as well as other theoretically relevant state-level measures, are tested. Results suggest meaningful and reliable state differences in attitudes toward and motivations for tipping, and that the latter differences underlie some, but not all, state differences in tipping behavior.

Keywords: State differences, tipping, motivation

JEL Codes: D12, L83, R19

1. INTRODUCTION

Consumers around the world often give voluntary sums of money (called “tips”, “propinas”, and “trinkgelds” among other names) to service workers who have served them. Among the service workers receiving these tips are baristas, bartenders, casino dealers, concierges, doormen, delivery drivers, hair cutters/stylists, hotel maids, parking valets, porters, taxi drivers, tour guides, and waiters/waitresses (Lynn, 2016). Although individual tips can be small, they often amount to 10 percent or more of the bill (Lynn and Lynn, 2004) and estimates place the total amount tipped to food service workers in the United States alone at over 45 billion dollars a year (Azar, 2011), so tipping is a substantial economic activity.

Despite its prevalence in the service economy, tipping has been regarded as mysterious or puzzling by many economists (Landsburg, 2007; Mankiw, 2007). Traditional models of rational economic man offer few compelling explanations for this behavior other than that it

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can be used to buy better future service in settings with repeated server-customer interactions (Ben-Zion and Karni, 1976). However, only a few tipping situations meet this criterion. To better explain this phenomenon, psychologists and behavioral economists argue that the consumers' utility functions must be expanded to include purely social and psychological rewards (Lynn and Grassman, 1990; Azar, 2020). Lynn (2015b) developed a framework of such expanded psychic rewards or motivations for tipping – arguing that the phenomena can largely be understood as an attempt to (i) help servers, (ii) reward service, (iii) gain or keep preferential future service, (iv) gain or keep social esteem (approval, liking and/or status), and (v) fulfill a sense of obligation or duty. He argued that these motives explain not only why people tip but also why tipping varies across historical time, individuals, service encounters, occupations, and nations. He found substantial support for these claims in a review of the then-existing empirical literature on tipping. Subsequent tests of this framework have required modifications of some a-priori assumptions underlying its application across different phenomena. However, they have largely supported the utility of the framework for understanding individual (Lynn, 2015a, 2021c), situational (Lynn, 2021a; Lynn and Ni, 2022), occupational (Lynn, 2016, 2021b), and national (Lynn and Starbuck, 2015) differences in tipping behavior.

The current paper extends the Tipping Motives Framework by applying it to within-nation, geographic/state differences in tipping. It seeks to answer the question: “Are state differences in tipping attitudes and behavior attributable to state differences in motivations for tipping?” To answer this question, new measures of average tipping attitudes and motives in each of the states of the United States are developed, and their relationships with state tipping behaviors, as well as other theoretically relevant state-level measures, are tested. Results of this inquiry bolster support not only for the utility of the Tipping Motives Framework in explaining tipping but also for the more general use of populations' psychological characteristics to explain regional differences in economic behavior and outcomes (Rentfrow, 2020).

2. BACKGROUND AND LITERATURE REVIEW

The popular press periodically reports on differences in tipping across the 50 states of the U.S. using point-of-sale and credit card data from companies such as Square and Simple (Ferdman, 2014; Risen, 2016; Johnson, 2017). However, the origins or causes of these state differences are unclear and understudied. In a rare existing published academic study of this topic, Lynn (2020) found that average tip amounts in restaurants were lower in states with smaller tip credits (i.e., in states with low tipped minimum wages compared to regular minimum wages). He also found that tip amounts were higher in states with higher costs-of-living.¹ He attributed the first of these results to the effects of tip credits on altruistic motives for tipping – arguing that perceptions of server need and, therefore, altruistic motives for

¹State level tipping in coffee-shops, which was negatively related to state-level restaurant tip percentages, had the opposite relationships with these predictor variables. While the negative correlation between and opposite effects of predictors on state measures of tipping in these two settings are interesting, explaining them is left to future research. Given that most tipping in the U.S. occurs in restaurants, the current study focuses on explaining state differences in restaurant tipping.

tipping should decline with server wages. A similar argument could be made about the effects of costs-of-living – perceptions of server need and, therefore, altruistic motives for tipping should increase with the costs-of-living. However, Lynn’s inquiry was limited in scope, and he was unable to test the proffered explanations for his results, so more work needs to be done to fully understand these state differences in restaurant tipping.

Building on and extending the application of Lynn’s (2015b) Tipping Motives Framework, the current study examines whether state differences in restaurant tipping behavior can be attributed to state differences in their populations’ chronic motivations for tipping. Specifically, state-level measures of extrinsic, intrinsic, and duty motivations for tipping were obtained by averaging various standardized self-report measures of these motives across individual participants in numerous published and unpublished surveys. Extrinsic motives combine Lynn’s future service and social-esteem motives, which are positively correlated at the individual level. Intrinsic motives combine Lynn’s altruistic and gratitude/reciprocity motives, which are also correlated at the individual level. Duty motives reflect Lynn’s original conceptualization of duty/obligation motives. The current measurement and use of these three motives follow Lynn’s recent practice of extracting three rather than five factors from self-reported measures of tipping motives in order to avoid throwing away the explanatory power in the variance shared by the two extrinsic and two intrinsic motives (Lynn, 2021a,c; Lynn and Ni, 2022). This concern is particularly relevant to the current study, where the small number of states in the U.S. limits statistical power and the number of covariates that can be meaningfully included in regression models.

After constructing the three state-level measures of tipping motives, they are validated by examining their relationships with other state-level characteristics that the theory suggests might be their antecedents and determinants – i.e., costs-of-living, tip credits, collectivism, tightness, and kindness. These constructs and their theoretical relevance to tipping motives are described below.

- costs-of-living and tip credits (lower tipped wages relative to non-tipped wages) could affect intrinsic tipping motives because perceived server need should increase with costs-of-living and decrease with server wages (Lynn, 2020).
- Collectivism refers to a cultural orientation emphasizing the interdependence of the self with others and a “we” over an “I” mentality. It has been shown to vary across states of the United States as well as across nations and to predict social conformity (Vandello and Cohen, 1999). Collectivists’ heightened concern about fitting in and belonging should strengthen extrinsic (social esteem) and/or duty motives for tipping.
- Tightness refers to a society’s tendency toward strong enforcement of many social norms (Gelfand et al., 2006). It has been shown to vary across both nations and states of the United States and to be associated with greater strength of populations’ feelings of accountability and self-restraint (Gelfand et al., 2011; Harrington and Gelfand, 2014). Since tipping is a normative behavior, it seems likely that state differences in tightness would increase motivations to comply with tipping norms – i.e., extrinsic (social-esteem) and/or duty motives for tipping.
- Kindness has been defined as a willingness to help others at some cost to the self. It

encompasses both altruistic and reciprocity motives for helping others and has been shown to vary across states of the United States as well as across individuals (Curry et al., 2021). This broad characteristic seems likely to affect the related but more domain-specific tendencies toward intrinsic (altruistic and reciprocity) motives for tipping.

Finally, the explanatory power (as well as validity) of the state-level tipping motives is assessed by examining their relationships with state-level characteristics that theory suggests might be affected by them – i.e., attitude toward tipping, search for tip norm information, restaurant tip percentage, and proportion of restaurant tips that are normative (15-20 percent). Each of these attitudes and behaviors, as well as the tipping motives likely to affect them, are described below.

People tend to like things that benefit them and dislike things that harm them, so people should like tipping more the more they benefit from it. Theoretically, all the tipping motives provide the tipper with some positive benefit – i.e., future service, social esteem, a glow of goodwill from altruism, psychic comfort from equity, or pride from doing right. However, some benefits of extrinsic and duty motives for tipping are to avoid negative outcomes – i.e., bad future service, loss of esteem, or feelings of guilt. To the extent that these avoidant benefits dominate the acquisitive ones, they may decrease liking for tipping because it involves a loss of money with a little positive gain. Research at the individual level has found that stronger extrinsic and intrinsic motives are associated with a greater liking for tipping. In comparison, stronger duty motives are associated with less liking for tipping (Lynn, 2015a, 2018, 2021b,c; Lynn and Brewster, 2020). These findings suggest that people who tip for extrinsic or intrinsic motives get some positive benefit from tipping, while people who tip from a sense of duty or obligation do not. Apparently, duty motives for tipping are about avoiding guilt more than feeling pride. Although relationships observed at one level of analysis need not exist at other levels of analysis (Ostroff, 1993), these findings suggest that states with stronger extrinsic and intrinsic tipping motives may like tipping more. In comparison, states with stronger duty motives may like tipping less.

Tipping norms usually specify whom to tip and how much to tip. Normative tip amounts provide a reference that could be helpful when deciding on a tip amount regardless of the motivation for tipping. Thus, the tipping motives could drive a search for information about normative tip amounts. However, getting extrinsic benefits and fulfilling obligations requires an awareness of tipping expectations and obligations in a way that helping and rewarding servers do not. Thus, it seems likely that extrinsic and duty motives for tipping may drive searches for tipping norm information more than intrinsic motives for tipping.

All tipping motives should affect some tipping behavior, but the specific behaviors affected by different motives may differ. Larger tips should buy more extrinsic and intrinsic rewards, so the strength of these motives should be positively related to restaurant tip amounts. In contrast, only minimally normative tips are necessary to fulfill tipping obligations, so duty motives should increase normative tipping but may not substantially increase tip amounts. Existing research at the individual level of analysis supports much of this reasoning. Although extrinsic motives have inconsistent effects on tipping across studies, intrinsic motives have increased tip amounts. In contrast, duty motives have increased tipping likelihood and

normative tipping but not always tip amounts (Lynn, 2015a, 2021c,a). Whether or not these individual-level effects aggregate to create state-level relationships among the variables is an empirical question examined for the first time below. The state-level measures used to test these and the other previously mentioned relationships are described below.

3. METHOD

State-level measures of extrinsic, intrinsic, and duty motives for tipping, attitude toward tipping, collectivism, tightness, kindness, search for tip norm information, average restaurant tip percentage, and the proportion of restaurant tips that are normative were obtained from the sources described below.

3.1. Attitude toward and Motivations for Tipping

Fourteen published and unpublished surveys, conducted from 2012 to 2022, containing various self-report measures of attitude toward and/or motivations for tipping, as well as the respondents' state of residence, were used to create state-level measures of attitude toward tipping (ATT) and tipping motives. All the surveys providing attitude data had respondents indicate how much they agreed with the statement "I like the custom of tipping." However, the number of response options on the scale varied across surveys. Those surveys providing motivation data used multi-item measures of altruistic, gratitude/reciprocity, future service, social esteem, and duty motives for tipping, but the number and wording of those items, as well as the number of response options on the disagree-agree response scale, varied across surveys. See Lynn (2015a) and Lynn and Brewster (2020) for typical samples of the items used in these overlapping but not identical measures of tipping motives.

Within each survey, the motivation statements were factor analyzed using maximum likelihood. Three factors were retained and subjected to promax rotation – one-factor loading on future service and social-esteem motives was labeled "extrinsic tipping motives" (ETM), one loading on altruistic and gratitude/reciprocity motives was labeled "intrinsic tipping motives" (ITM), and one loading on duty motives was labeled "duty tipping motives" (DTM). Items loading at .5 or higher on the factor they were intended to load on and loading substantially lower on the other factors were averaged to create within survey indices of extrinsic, intrinsic, and duty motives for tipping. See Table 1 for a brief description of the surveys and measures obtained from them.

The single-item attitude measure and the motivation indices were then standardized within the survey and combined into one large data set. This larger data set contained a state of residence and at least one valid observation of attitude or motivation from a total of 15,162 respondents. Analyses indicated that states did differ reliably on these measures collectively ($F_{multivariate}(200, 39396) = 2.88, p < .001$), and individually ($F_{attitude}(50, 9849) = 2.09, p < .001$; $F_{extrinsic}(50, 9849) = 4.67, p < .001$; $F_{intrinsic}(50, 9849) = 2.86, p < .001$; $F_{duty}(50, 9849) = 1.98, p < .001$). Therefore, the standardized attitude and motivation measures were averaged by the state to provide state-level measures of attitude toward tipping, as well as extrinsic, intrinsic, and duty motives for tipping. Unfortunately, sample sizes for the measures varied considerably across states, so only states whose attitude and

motivation measures were based on at least 50 raters each were retained for analysis.

Table 1: Description of the sources of survey data used to construct state-level measures of tipping motives and tipping attitude.

Year of data collection	Publication using this data	Source of Sample	Valid Sample Size	ETM	ITM	DTM	ATT
2012	LB (2015)	Survey	899	na	na	na	yes
2012	unpublished	MTurk	1369	na	na	na	yes
2012	unpublished	Survey	1114	na	na	na	yes
2013	unpublished	MTurk	812	na	na	na	yes
2014	Lynn (2015a)	MTurk	806	.93	.90	.90	yes
2014	unpublished	MTurk	605	na	na	na	yes
2014	unpublished	MTurk	396	.94	.92	.86	yes
2014	Lynn (2021c)	MTurk	403	.94	.91	.87	no
2018	Lynn (2021a)	MTurk	1211	.96	.92	.93	yes
2018	LB (2020)	MTurk	1829	.87	.84	.86	yes
2018	unpublished	MTurk	601	.86	.85	.85	yes
2018	Lynn (2018)	MTurk	612	.96	.90	.91	yes
2021	Lynn (2021b)	MTurk	1359	.80	.70	.70	yes
2022	unpublished	MTurk	3095	.92	.86	.81	yes

Note: Numbers in the tipping motives columns (ETM, ITM, and DTM) are values of Cronbach's Alpha. LB denotes Lynn and Brewster.

3.2. Measures Used by or Derived from Lynn's (2020) Study and Data

3.2.1. Restaurant Tip Size

NCR provided private anonymized data on every April 2013 credit card transaction of several different unidentified restaurant chains. Data from the five largest chains, which operated in 32, 33, 37, 40, and 46 states, respectively, were used to calculate a state-level measure of restaurant tip size. The median percent tip by the state was obtained for each of the five chains, and those medians were then correlated. Although all the state median tips were reliably positively correlated (all r 's greater than .54 and less than .92, all p 's less than .01), the correlations involving one chain were substantially smaller than the others (mean $r = .59$ vs .84), so the state medians from this chain were dropped. The remaining state medians were averaged into a single measure. This measure was an average of those values available, which effectively replaced missing values for one component with the mean of the available components as advocated by Roth et al. (1999). The resulting measure covered every state except Alaska and had a Cronbach's alpha of .92.

3.2.2. Frequency of Normative Restaurant Tipping

The four restaurant chains' datasets used to measure state differences in the average tip were also used to calculate the proportion of observations with a tip that was normative

(i.e., between 15 and 20 percent). To keep this measure from being biased by extreme cases, it was based only on observations with both a bill size between 5 and 500 dollars and a tip amount between .01 and 500 dollars. The normative proportions from the four restaurant chains were reliably and positively correlated with one another (all normative r 's greater than .38 and less than .72), so they were averaged into an index of normative tip frequency. This index was an average of those values available, which effectively replaced missing values for one component with the mean of the available components as advocated by Roth et al. (1999). The resulting measure covered every state except Alaska and had a Cronbach's alpha of .85.

3.2.3. Tip Credit

The 2013 tip credit in effect in each state was obtained from the U.S. Department of Labor's website at www.dol.gov/whd/state/tippedHistory.htm.

3.2.4. Cost of Living

The 2013 price parities for all goods in each state were obtained from the Bureau of Economic Analysis' website at <https://www.bea.gov/open-data>.

3.3. New Antecedent and Outcome Variables

3.3.1. Collectivism

Collectivism scores for each state were obtained from Vandello and Cohen (1999). This measure was an index of eight indicators, such as the percentage of people living alone, the percentage of people with no religious affiliation, and the ratio of divorce rates to marriage rates. Vandello and Cohen demonstrated its validity by showing that it is related to various theorized causes and consequences of collectivism.

3.3.2. Tightness

Tightness scores for each state were obtained from Harrington and Gelfand (2014). This measure was an index of nine indicators such as the legality of corporal punishment in schools, the rate of executions from 1976 to 2011, the ratio of dry (no alcohol) to total counties, the legality of same-sex civil unions, and the percentage of the population that is foreign. Harrington and Gelfand showed that this measure was related to theoretically expected ecological, historical, and psychological characteristics of states.

3.3.3. Kindness

Curry et al. (2021) define kindness as a willingness to help others at some cost to the self. They developed a measure of kindness that asks people if they would perform each of various kind acts whose perceived cost/benefit ratios the researchers had previously established. The cost/benefit ratio at which respondents switch from "yes" to "no" responses is their kindness

score on the Kindness Questionnaire (K.Q.). These researchers show that K.Q. scores have good convergent and discriminant validity. They report state means of K.Q. 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.

3.3.4. Search for Tipping Norm Information

Google Trends reports search data for specific terms in specified periods and geographic areas normalized by dividing each data point by the total searches in that period and geographic area. Google Trends was used to measure state-level frequencies of searches from 2004 to April 2020 involving the phrase “how much to tip.”

Table 2: Descriptive statistics for the state-level variables.

Variable	N	Min	Max	Mean	Standard Deviation
Extrinsic Tipping Motives (ETM)	38	-0.33	0.21	-0.06	0.14
Intrinsic Tipping Motives (ITM)	38	-0.31	0.25	0.04	0.12
Duty Tipping Motives (DTM)	38	-0.35	0.16	-0.02	0.11
Attitude toward Tipping (ATT)	38	-0.30	0.16	0.01	0.09
Search for Tip Norm Info	38	28	90	50.34	12.98
Normative Tipping	38	0.36	0.46	0.42	0.02
Percent Tip	38	16.93	19.71	18.36	0.57
Costs-of-Living	38	87.20	115.20	97.15	7.79
Tip Credit	38	0.00	5.37	3.86	1.69
Collectivism	38	33	72	51.39	9.36
Tightness	38	27.37	78.86	51.67	13.61
Kindness	38	71.58	77.59	74.12	1.58

4. RESULTS AND DISCUSSION

The complete state-level dataset used in this study is presented in the Appendix. Descriptive statistics for these state-level measures are presented in Table 2. Results from regressions of the tipping motivation measures on potential predictors are presented in Table 3. Note that there are two models for each outcome measure – one using all of the predictors (to diminish accusations of cherry-picking) and another model using only the most theoretically relevant predictors. In the absence of strong costs-of-living and/or tip credit effects, the latter models will be preferred as they provide the greatest statistical power. Results from regressions of state-level tipping attitudes and behaviors on extrinsic, intrinsic, and duty motives for tipping are presented in Table 4. Again, there are two models predicting each outcome measure – one using only the tipping motives as predictors (PANEL A) and another using costs-of-living and tip credit as well as the tipping motives as predictors (PANEL B). The former models will be preferred when the later models produce no strong costs-of-living and/or tip credit effects. Also, note that Moran’s test for independence of error terms was non-significant for all models except the model regressing restaurant tip percentage on

tipping motives alone. That model was rerun with spatially autoregressive errors using a W matrix based on the inverted distance between states, and those results are reported in the last column of Table 4. Key findings are described below.

4.1. Validation of State Tipping Motives

Analyses of theoretical antecedents of state tipping motives suggest that the current measures of these motives are reasonably valid. As expected, states with a collective “we” vs. an individualistic “I” mentality had stronger extrinsic and duty motives for tipping. States with kinder populations had stronger intrinsic motives for tipping (see Table 3). Contrary to expectations, extrinsic and duty-tipping motives were not positively related to state enforcement of social norms (aka, tightness). However, other findings suggest that this null result probably says more about the validity of the tightness measure than the measures of state tipping motives. State tightness should increase normative motivations and behavior, but it was negatively rather than positively related to both state duty motives for tipping (see Table 3, Column 6) and state frequency of normative restaurant tipping ($r = -.69, n = 38, p < .001$).

Table 3: Coefficients (and robust standard errors) from regressions of tipping motives on potential antecedent predictors.

	ETM	ETM	ITM	ITM	DTM	DTM
Intercept	-0.94 (1.04)	-0.41** (0.12)	-2.99** (0.87)	-2.86** (0.86)	0.80 (1.08)	0.02 (0.08)
Costs-of-living	0.003 (0.004)		-0.0003 (0.003)	0.0002 (0.002)	0.003 (0.003)	
Tip Credit	-0.04* (0.02)		0.01 (0.02)	0.02 (0.02)	0.01 (0.01)	
Collectivism	0.01** (0.003)	0.01*** (0.002)	0.002 (0.002)		0.002 (0.001)	0.003* (0.001)
Tightness	0.002 (0.003)	-0.003 (0.002)	-0.0001 (0.003)		-0.003 (0.002)	-0.004* (0.001)
Kindness	0.001 (0.01)		0.04*** (0.01)	0.04*** (0.01)	-0.01 (0.01)	
R^2	0.44***	0.33***	0.39***	0.37***	0.29	0.23*
n	38	38	38	38	38	38
Moral Test p-value	0.31	0.25	0.36	0.39	0.39	0.48

Notes: The 1%, 5%, and 10% levels of significance are given as ***, **, and *, respectively.

4.2. Effects of State Tipping Motives on State Attitude toward Tipping

State attitude toward tipping increased with state extrinsic tipping motives and decreased with state duty tipping motives (see Table 4, Panel A, Column 1). These effects replicate similar effects observed at the individual level of analysis (Lynn, 2015a, 2018, 2021c,b; Lynn and Brewster, 2020) and, in doing so, further support both the validity of the state level measures of these two tipping motives and the effects of these two motives on attitudes toward tipping. Furthermore, these effects suggest that extrinsic tipping motives are predominately

promotion focused. In contrast, duty motives for tipping are predominately prevention-focused.

State attitude toward tipping was not reliably related to state intrinsic tipping motives. This failure to find a reliable positive effect of state intrinsic tipping motives on state attitude toward tipping differs from findings at the individual level of analysis. It raises questions about the sensitivity of the state-level measure of this tipping motive. Individual level variance in intrinsic tipping motives is lower than that for the other tipping motives (Lynn, 2015a, 2018). The variance in state means of those scores must be even smaller than the individual-level variance, so it is plausible that there are smaller state differences in this tipping motive than in other tipping motives.² If so, it would make the state-level measure of intrinsic tipping motives less sensitive than the state measures of other tipping motives, and this could explain the former's null relationship with attitude toward tipping.

4.3. Effects of State Tipping Motives on State Search for Tip Norm Information

State search for tip norm information increased with state duty motives for tipping in analyses that included only state tipping motives as predictors (see Table 4, Panel A, Column 2). Although this duty motive effect became non-significant after controlling for costs-of-living (see Table 4, Panel B, Column 2), it is possible that this control variable hides the true effects of duty motives. Certainly, a positive effect of duty motives on the search for tip norm information is in line with what you would expect of the consequences of stronger duty motives for tipping. In contrast, the cost-of-living effect is harder to explain – especially since cost-of-living was associated with an increased search for tip norm information, but not the frequency of normative tipping (see Panel B, Column 3, Table 4).

4.4. Effects of State Tipping Motives on State Frequency of Normative Tipping

The frequency of normative restaurant tipping was higher in states with stronger duty motives for tipping (see Table 4, Panel A, Column 3). This effect replicates a similar effect observed at the individual level of analysis (Lynn, 2021a) and further supports the validity of the state-level measure of this tipping motive. Moreover, it combines with the previously discussed duty motive effect on the search for tip norm information to provide evidence for the effects of duty motives on various tipping-related behaviors.

4.5. Effects of State Tipping Motives on State Restaurant Tip Percentages

State average tip percentages in restaurants were unrelated to the states' intrinsic and duty motives for tipping. They were negatively related to the strength of their extrinsic tipping motives (see Table 4, Panel B, Column 4). The null result for duty motives is consistent with similar effects observed at the individual level of analysis (Lynn, 2009, 2015a, 2021c,a) and, together with negative duty motive effects on attitude toward tipping reported above, support the idea that duty motives for tipping are predominately prevention focused. The

²This possibility is hidden in the descriptive statistics for the various state tipping motives because the individual-level scores were standardized with the study before aggregating them into state-level measures.

Table 4: Coefficients (and robust standard errors) from regressions of tipping-related attitudes and behaviors on tipping motives and other variables.

PANEL A	Attitude toward Tipping	Search for Tip Norm Information	Normative Tipping	Restaurant Tip Percentage	Restaurant Tip Percentage
Intercept	0.01 (0.01)	50.88*** (1.96)	0.42*** (0.003)	18.30*** (0.10)	17.35*** (0.34)
Extrinsic Tipping Motives	0.24* (0.10)	-7.40 (13.64)	-0.03 (0.02)	-1.09 (0.60)	-1.04 (0.57)
Intrinsic Tipping Motives	0.11 (0.15)	-0.23 (14.26)	-0.05 (0.02)	1.01 (0.69)	0.33 (0.69)
Duty Tipping Motives	-0.25* (0.10)	47.85** (16.55)	0.08* (0.03)	1.73* (0.79)	1.48 (0.77)
Error Lag (Widistance)					0.06** (0.07)
R^2	0.15	0.14*	0.21**	0.17	0.31**
n	38	38	38	38	38
Moran Test p-value	0.82	0.19	0.32	0.002	NA
PANEL B					
Intercept	0.13 (0.26)	-55.38* (26.09)	0.28*** (0.05)	13.68*** (1.13)	
costs-of-living	-0.001 (0.003)	1.11*** (0.21)	0.002 (0.0005)	0.04** (0.01)	
Tip Credit	0.004 (0.007)	-0.88 (2.06)	-0.001 (0.002)	0.15** (0.14)	
Extrinsic Tipping Motives	0.24* (0.11)	-10.51 (9.73)	-0.03 (0.02)	-1.13* (0.48)	
Intrinsic Tipping Motives	0.08 (0.17)	18.12 (14.98)	-0.02 (0.02)	0.74 (0.50)	
Duty Tipping Motives	-0.20 (0.11)	12.90 (13.69)	0.03 (0.03)	0.75 (0.72)	
R^2	0.17	0.53***	0.46***	0.43***	
n	38	38	38	38	
Moran Test p-value	0.72	0.28	0.72	0.87	

Notes: The 1%, 5%, and 10% levels of significance are given as ***, **, and *, respectively.

null result for intrinsic tipping motives is not consistent with research at the individual level of analysis. However, the effect was in the right direction, and its weakness may be attributable to small state differences in the underlying construct, as discussed in section 4.2. The negative effect of extrinsic tipping motives is the most puzzling.

Perhaps the state measure of extrinsic tipping motives is less valid than desired. People may think others disapprove of individuals who tip only for extrinsic reasons. If so, those with stronger extrinsic tipping motives, presumably more concerned about impression management, would be least likely to admit to tipping for extrinsic reasons. However, this possibility seems inconsistent with the expected and observed relationships of state extrinsic tipping motives with state collectivism and state attitude toward tipping reported above. Alternatively, the measure of state extrinsic tipping motives may be valid, and its relationship with tipping behavior may differ from that originally expected. For example, extrinsic tipping motives may have opposite effects depending on patronage frequency - increasing tips for people who expect to see the server again and decreasing them for people who do

not expect to see the server again. Suppose infrequent patrons outnumber frequent ones, as likely in most cases. In that case, their tipping behavior will dominate state average restaurant tip percentages, which could explain the negative state-level effect of extrinsic tipping motives observed here. Both these possibilities should be explored in future research.

4.6. The Effects of costs-of-living and Tip-Credits on Tip Percentages

State average restaurant tip percentages were positively related to the costs-of-living and the tip credits in those states (see Table 4, Panel B, Column 4). This effect replicates the similar state-level effects reported by Lynn (2020) and shows that those effects generalize beyond the specific measures used in that previous analysis. It also shows that the original tests of those effects were not biased by auto-correlated error terms, which Lynn failed to test for. That these effects remained reliable after controlling for intrinsic and other tipping motives, and that neither economic variable predicted state intrinsic tipping motives, indicates the effects were not even partially mediated by intrinsic tipping motives as theorized here and by Lynn (2020).

5. GENERAL DISCUSSION

The results of this study provide evidence that there are meaningful and reliable state differences in attitudes toward and motivations for tipping and that the motivational differences underlie at least some of the state differences in tipping attitudes and behavior. The use of cross-sectional correlational data precludes strong causal inferences, as does the inability to control for many potential confounds due to the small sample size. Nevertheless, the current academic literature contains almost nothing on state differences in tipping. The data and analyses presented here, imperfect though they are, are better than no data and analyses. The relationships observed in this study did not have to exist. They are consistent with the theoretically intelligible effects of collectivism and kindness on state-level tipping motives and on tipping attitudes and behaviors. As such, they should increase our confidence in those theorized effects even though they do not provide definitive evidence.

By providing more evidence than previously available for meaningful relationships among state differences in attitudes toward tipping, motivations for tipping, and tipping behavior, the findings make four contributions to the regional studies literature. First, they call attention to a largely overlooked but important and interesting type of geographic/state variability – i.e., state variability in tipping. Second, they provide new and partially validated tools for studying/predicting state differences in tipping – i.e., measures of state differences in attitude toward tipping and motives for tipping. Third, they provide evidence challenging a plausible explanation of tip credit and costs-of-living effects on state differences in restaurant tipping. Finally, they extend the demonstrated applicability of Lynn's (2015b) Tipping Motives Framework to geographic/state differences in tipping. In doing so, they bolster support not only for that framework's utility in explaining tipping but also for the more general use of populations' psychological characteristics to explain regional differences in economic behavior and outcomes (Rentfrow, 2020). Each of these contributions is discussed in more detail below.

5.1. State Differences in Tipping as a Topic of Research

As a form of both voluntary pricing and employee compensation that is particularly common in the hospitality and tourism industries, tipping is an economic behavior that has been studied by scholars in economics, psychology, sociology, marketing, human resources, hospitality management, international studies, and tourism (McCall and Belmont, 1996; Kwortnik Jr et al., 2009; Lynn et al., 2011; Brewster and Wills, 2013; Torfason et al., 2013; Bujisic et al., 2014; Mansfield, 2016; Ferguson et al., 2017; Azar, 2020). These scholars have studied the determinants and predictors of variations in tipping across service encounters, server characteristics, occupational characteristics, types of consumers, and nations (see Lynn (2015b), for a review). However, variations in tipping across regions or states within nations have received very little attention to date, even though they clearly exist and have the potential to shed light on the processes underlying the broad phenomena. The current paper calls attention to this deficiency in the tipping literature and introduces state differences in tipping as a new topic for research in regional studies.

One reviewer of this paper criticized it for providing an overly simplistic model of state differences in tipping (among other things). He or she went on to write in the review: “Does a state unemployment rate affect tipping? Does the percentage of the state GSP that is tourism based impact tipping? One could ask dozens of such questions. What are the answers?” This criticism is misplaced because the intended contribution of the current paper is not to develop and test a comprehensive model of state differences in tipping but rather to introduce a new topic of study in regional science, develop and validate new state-level measures of tipping motives, and test the impacts of those motives on state differences in tipping attitudes and behaviors. However, what the criticism does do is highlight the wide-open nature of this field of inquiry. Hopefully, more regional studies scholars will step in to fill the admittedly large gaps in our understanding of state differences in tipping left by the current paper.

5.2. State Measures of Tipping Attitude and Motives

The study of state differences in tipping requires state-level predictors whose effects can be readily explained. While many state-level measures that might predict tipping already exist, they tend to be aggregations of state economic and demographic characteristics whose effects are difficult to attribute to any one underlying process. For example, any state sex-ratio effect on tipping could be due to an aggregation of individual-level sex-of-customer effects, an aggregation of individual-level sex-of-server effects, or the influence of sex ratios on other state characteristics (such as the percentages of husband-wife households with own children under 18). A few state measures of cultural variables (such as collectivism and tightness) and psychological variables (such as agreeableness, extraversion, or neuroticism) also exist. However, these constructs are also often too broad to attribute their effects to any one underlying process. For example, any effect of state agreeableness on tipping could be due to an aggregation of individual-level effects of the tipper’s agreeableness, an aggregation of individual-level effects of the server’s agreeableness, or to the effect of living in a community of agreeable people. Furthermore, even individual-level effects of the tipper’s agreeableness cannot be attributed to any given motivation for tipping – agreeable people

may want to help or reward servers, buy or keep others' approval, and/or accept socially defined duties to tip more than others.

In order to provide more readily interpretable predictors of state differences in tipping, the current study developed new state-level measures of attitude toward tipping, extrinsic motives for tipping, intrinsic motives for tipping, and duty motives for tipping. The narrowness of these constructs – focused on the tipper's attitude toward tipping and tipping motives – diminishes plausible alternative explanations for their relationships with tipping-related behaviors. Furthermore, the validity of the measures was demonstrated by showing that they were related to one another and/or other state characteristics in theoretically sensible ways. In particular, the validity of the state attitude-toward-tipping measure was supported by its relationships with extrinsic and duty motives for tipping. The validity of the measure of state duty motives for tipping was supported by its relationships with state differences in attitude toward tipping, search for tip norm information, and frequency of normative restaurant tipping. The validity of the measure of state extrinsic tipping motives was supported by its relationships with collectivism and attitude toward tipping. The unexpected negative relationship of this state tipping motive to state-level average restaurant tip percentage could be a red flag regarding its validity. However, it could also reflect a real tendency for this motive to decrease tips when the tipper does not expect to see the service provider again. Finally, the validity of the state measure of intrinsic tipping motives is supported by its relationship with state kindness. The failure of this motive to predict state differences in tipping attitudes or behaviors may say more about the small size of state differences in the construct than the measures' validity. Thus, the current study goes beyond calling attention to a new and interesting research topic. It also contributes to the toolbox of measures used to study it.

5.3. Testing Explanations for Economic Predictors of State Differences in Tipping

In addition to presenting new measures of state differences in tipping motives, the current study uses them to test explanations for the previous findings that restaurant tips are larger in states with larger tip credits and higher costs-of-living (Lynn, 2020). Specifically, the ideas that state tip credits and costs-of-living increase restaurant tips through their effects on the perceived server need for tips, and therefore altruistic motives for tipping, are challenged by the finding that neither tip credits nor costs-of-living was reliably, positively related to intrinsic tipping motives. Furthermore, the effects of both tip credits and costs-of-living on state average tip percentages remain significant after controlling for all tipping motives, suggesting that these predictors directly affect tipping independently of their effects on any particular tipping motive. Perhaps higher costs-of-living and tip credits cause servers to work harder for tips, or perhaps they increase the selection pressure on servers to remain in the profession only if they are high tip earners. Undoubtedly, other explanations are also possible, and identifying and testing them would be a worthwhile pursuit for future researchers.

5.4. Utility of the Tipping Motives Framework for Understanding State Differences in Tipping

Finally, this study's demonstration that state differences in tipping attitude and behavior can be predicted by state differences in the strength of duty motives for tipping replicates similar findings at the individual level of analyses (Lynn, 2015a, 2021a,c). Since the current state-level tipping behaviors reflect real behavior and come from people different than those proving the state-level tipping motives, this conceptual replication helps to rule out common method variance and consistency biases as an explanation for the observed relationship. In this way, the current findings both bolster existing support for Lynn's (2015a) Tipping Motives Framework and extend the demonstrated applicability of that framework to geographic/state differences in tipping. More generally, they support the use of populations' psychological characteristics to explain regional differences in economic behavior and outcomes (Rentfrow, 2020).

5.5. Conclusions

Consumers around the world give away billions of dollars annually through voluntary payments (aka tips) to service workers who have served them. This widespread and important economic activity varies across geographic areas within nations, but that geographic variability has been under-studied to date. A previous study suggests that this variability is affected by state differences in minimum wage policies and costs-of-living (Lynn, 2020). The current study suggests that it is also affected by state differences in population characteristics – i.e., the strength of motives for tipping. Nevertheless, more work is needed to understand this phenomenon fully. Hopefully, by calling attention to this topic of inquiry, providing new predictive tools to use in its study, and demonstrating the use of those tools to test theorized processes, this paper will encourage more regional studies scholars to take up that work.

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APPENDIX

Table A1: State level data used in this paper.

State	ETM	ITM	DTM	ATT	STNI ^a	ARTP ^b	PNT ^c	CL ^d	TC ^e	C ^f	T ^g	K ^h
AL	0.11	-0.05	-0.04	0.13	35	17.96	0.4	87.8	5.12	57	75.45	75.29
AK	0	0	0	0	41	0	0	104.9	0	48	38.43	76.27
AZ	-0.1	-0.02	-0.09	0.02	54	18.43	0.43	96.5	3	49	47.56	72.16
AR	-0.29	0.2	-0.32	0.09	28	17.84	0.38	87.8	4.62	54	75.03	74.31
CA	0.16	-0.11	0.05	-0.03	57	16.93	0.42	113.1	0	60	27.37	72.78
CO	0.03	0	-0.02	-0.04	60	18.91	0.43	102.1	3.02	36	42.92	74.35
CT	0.07	-0.1	0.04	0.04	58	18.87	0.45	108.5	2.56	50	36.37	72.79
DE	0	0	0	0	53	19.47	0.43	100.6	5.02	55	51.02	72.85
DC	0	0	0	0	77	0	0	117	5.48	0	0	0
FL	0.04	-0.01	-0.06	0.08	59	18.73	0.43	99.2	3.02	54	49.28	72.28
GA	-0.06	0.16	0.04	0.01	48	18.5	0.41	92.3	5.12	60	60.26	76.49
HI	0	0	0	-0.37	100	17.93	0.46	118.3	0.25	91	36.49	72.97
ID	-0.08	0.1	0.06	0.07	40	18.02	0.39	93.2	3.9	42	45.5	74.69
IL	0.05	0.11	0.01	-0.02	64	18.6	0.46	99.7	3.3	52	45.95	73.09
IN	0.04	-0.12	0.02	0.08	44	18.33	0.41	91.3	5.12	57	54.57	73.95
IA	-0.01	0.08	0.04	-0.05	34	17.63	0.4	90.6	2.9	39	49.02	74.64
KS	-0.33	-0.19	-0.11	-0.15	33	18.17	0.42	91.3	5.12	38	60.36	72.12
KY	-0.22	0.25	-0.35	0.05	42	18.51	0.41	89.3	5.12	53	63.91	77.59
LA	0.21	0.07	-0.1	0.11	44	18.05	0.41	91.2	5.12	72	65.88	74.61
ME	0	0	0	-0.22	53	19.33	0.41	98.5	3.75	45	34	73.93
MD	0.09	0.06	0.12	-0.05	56	19.13	0.43	109.9	3.62	63	45.5	71.58
MA	-0.31	0.02	0.08	0.14	74	19.39	0.44	106.7	5.37	46	35.12	72.54
MI	-0.04	0.01	-0.05	0	56	18.9	0.44	94.3	4.75	46	48.93	72.64
MN	-0.03	0.17	0.13	-0.02	50	18.26	0.45	97.5	1.1	41	47.84	75.11
MS	-0.07	0.18	0.01	0.12	29	17.35	0.36	87.2	5.12	64	78.86	73.76
MO	-0.19	0.12	-0.09	0.08	45	18.58	0.43	89.9	3.67	46	59.6	75.97
MT	0	0	0	0	36	17.69	0.38	94.6	0	31	46.11	75.67
NE	0	0	0	-0.17	38	17.74	0.41	90.7	5.12	35	49.65	73.89
NV	-0.12	0.07	-0.04	-0.02	90	18.1	0.43	98.7	0	52	33.61	72.58
NH	-0.27	0.21	0	0.16	58	19.71	0.42	105.4	3.99	43	36.97	76.27
NJ	-0.04	0.07	-0.08	0.11	67	19.01	0.46	113.4	5.12	59	39.48	74.89
NM	-0.04	0.21	-0.06	-0.3	47	18.35	0.42	95.3	5.37	51	45.43	77.55
NY	0.07	0.02	0.16	-0.07	74	18.36	0.46	115.2	2.25	53	39.42	73.89
NC	-0.03	0.1	-0.01	0.04	46	18.34	0.42	91.8	5.12	56	60.67	74.31
ND	0	0	0	0	35	16.63	0.36	91.7	2.39	37	51.44	76.33
OH	-0.12	0.11	-0.06	-0.11	49	18.7	0.43	89.5	3.92	45	52.3	75.61
OK	-0.18	0.09	-0.21	0.05	38	17.55	0.38	90	5.12	42	75.03	76.94
OR	-0.13	-0.19	-0.07	-0.04	37	17.88	0.43	98.9	0	33	30.07	72.32
PA	-0.19	-0.03	0.04	-0.11	62	19.09	0.45	98.6	4.42	52	52.57	72.97

Continued on next page

State	ETM	ITM	DTM	ATT	STNI ^a	ARTP ^b	PNT ^c	CL ^d	TC ^e	C ^f	T ^g	K ^h
RI	0	0	0	0	61	19.54	0.43	98.8	4.86	48	43.23	74.97
SC	0.18	-0.02	0.01	0.15	41	18.34	0.41	90.5	5.12	70	61.39	73.89
SD	0	0	0	0	28	17	0.37	88	5.12	36	51.14	75.81
TN	-0.1	0.06	0.03	0.04	47	18.25	0.42	90.7	5.12	56	68.81	75.26
TX	0.14	-0.05	-0.03	0.05	46	17.91	0.4	96.3	5.12	58	67.54	72.69
UT	-0.1	0	0.02	-0.07	51	18.21	0.42	97.7	5.12	61	49.69	74.89
VT	0	0	0	0	48	19.19	0.44	100.9	4.43	42	37.23	74.77
VA	0.09	0.08	0.13	0.06	48	18.84	0.41	102.8	5.12	60	57.37	73.1
WA	-0.04	-0.31	-0.03	-0.01	51	17.62	0.44	104.2	0	37	31.06	74.05
WV	0	0	0	0.18	37	18.11	0.35	88.6	1.45	48	52.48	75.82
WI	-0.33	0.07	0.08	-0.02	51	18.52	0.45	93.2	4.92	46	46.91	72.71
WY	0	0	0	0	35	18.19	0.36	96	5.12	35	51.94	75.82

^a STNI denotes Search for Tip Norm Info.

^b ARTP denotes Average Restaurant Tip Percentage.

^c PNT denotes Proportion of Normative Tips.

^d CL denotes Costs of Living.

^e TC denotes Tip Credit.

^e C denotes Collectivism.

^e T denotes Tightness.

^e K denotes Kindness.