

Do Consumers Prefer Round Prices?

Evidence from Pay-What-You-Want Decisions and Self-Pumped Gasoline Purchases

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Abstract

Consumers selected round prices and/or sales-totals at greater than chance levels across two different pay-what-you-want situations and one self-pumped gasoline purchase. The differences among these situations suggest that the tendency to select round prices/sales-totals reflects a subjective preference (or liking) for round prices and not a variety of other potential explanatory processes. Discussion focuses on possible economic consequences of this revealed preference for round prices as well as directions for future research.

Keywords: consumer preference; pricing; round numbers

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1. Introduction

While the absolute value of prices is their most important and influential attribute, there is evidence in the economics and finance literatures that specific price digits also affect buyer and seller behaviors. For example, clustering around round price endings of 0 and 5 has been observed in the markets for gold, stocks, foreign currencies, real-estate, bond futures, and oil futures (see Sonnemans, 2006; Sopranzetti and Datar, 2002). This price clustering has numerous potential explanations – one of which is that people prefer round over non-round prices (Mitchell, 2001; Sonnemans, 2006). However, a preference for round prices has not been clearly demonstrated in the economics literature and seems inconsistent with the greater prevalence of 9 than 0 price endings in retail settings (Nguyen, Heeler and Taran, 2007). Therefore, we set out to test the existence of such a consumer preference for round prices in the studies reported below.

2. Round number preference and price ending effects.

Round numbers can be thought of as those numbers ending in 0's with the roundness of multi-digit numbers increasing with the number of trailing 0's. Furthermore, halves of round numbers (i.e., those ending in 5, 50, 500, etc... when using a base ten counting system) may be thought of as semi-round -- that is, less round than those ending in 0, 00, 000 but more round than those ending in some other digits. Researchers have found that such round numbers occur more frequently in various texts than non-round numbers of comparable magnitude (Couplan, 2011) and are easier to remember, process and perform mathematical operations on than non-round numbers (Estelami, 1999; Schindler and Wiman, 1989). These

characteristics and effects of round numbers suggest that people will develop an automatic, implicit preference for round numbers over non-round ones because of a tendency to implicitly like familiar stimuli more than unfamiliar ones (Zajonc, 2001) and fluently processed stimuli more than difficult to process ones (Reber, Schwartz and Winkielman, 2004).

Consistent with a generalized preference for round numbers over non-round ones, researchers have found that people are more likely to use round than non-round numbers when guessing and estimating (Plug, 1977), reporting frequencies of behaviors such as smoking (Klesges, Debon and Ray, 1995), reading, recording and reporting measurements such as height (Bopp and Faeh, 2008), and setting numeric goals such as batting averages and SAT scores (Pope and Simonsohn, 2011). An implicit preference for round numbers that is observed in as many varied contexts as those detailed above may generalize to prices. Moreover, a documented association in both the marketplace and consumers' minds between round prices and product quality (Naipaul and Parsa, 2001; Stiving, 2000) should add to mere exposure and fluency of processing effects to make round price preferences even stronger than a more general round number preference. Thus, we hypothesize:

H1: Consumers prefer round prices over non-round prices of similar magnitude.

On the other hand, there are also theoretical reasons for questioning this hypothesis. Although round numbers are more common than non-round numbers in various texts, this is not true of prices. In fact, numerous studies have documented that odd prices (especially those ending in 9) are equally or more common than round prices in the markets of the U.S. and many other nations (e.g., Holdershaw, Gendall and Garland, 1997; Nguyen, et. al.,

2007). Thus, if mere exposure effects are context specific, they may not produce a preference for round prices and may even produce a preference for prices ending in 9's.

Furthermore, researchers have documented that 9-ending prices are associated with price discounts (Gueguen and Legohérel, 2004; Naipaul and Parsa, 2001) and, due in part to the way they are processed, with lower price magnitudes (Bizer and Schindler, 2005; Thomas, Simon and Kadiyali, 2010). Since consumers generally prefer lower prices, these associations may undermine an implicit preference for round prices and perhaps even produce an implicit preference for 9-ending prices.

Existing empirical data on our hypothesized consumer preference for round prices is limited. One study found that 66 percent of consumers agreed with the statement “Generally, I prefer even prices” (Diller and Brielmaier, 1995). Another study found that people rated their liking for examples of round prices higher than their liking for examples of non-round prices (Guido and Peluso, 2004). However, self-reported attitudes are subject to impression management demands, may be weak predictors of behavior, and may be opposed by implicit, unconscious preferences. Thus, there is a need for more evidence on the existence, robustness and behavioral effects of consumer preferences for round numbers.

Research on the effects of round versus non-round prices on consumer choice seems relevant, but provides inconsistent evidence that says little about consumer price preferences. Several studies using hypothetical choice scenarios or mail-order catalogue experiments have found that 99, and sometimes 95, price endings increase choice and/or sales more than 00 price endings (e.g., Anderson and Simester, 2003; Guido and Peluso, 2004). However, other studies using grocery scanner data, online price search engine data, or quasi-experiments in brick and mortar retail stores have found that round 00 price endings result in greater click-

thrus and sales than do non-round prices (e.g., Bray and Harris, 2006; Stiving and Winer, 1997). Still other lab studies have found no price-ending main effects (Dodds and Monroe, 1985) or individual differences with round prices increasing choices over non-round prices for some people and vice-versa for other people (Baumgartner and Steiner, 2007).

These conflicting findings about the effects of price endings on choice and sales seem to suggest inconsistent or shifting preferences for round versus non-round prices. However, it is possible that they have more to do with the inferences that consumers draw from the price endings than they do with consumer preferences for particular price endings (Gueguen and Legohere, 2004; Naipaul and Parsa, 2001). Non-round prices, which are associated with discounts and lower prices, may communicate that a product is a “good deal” and this may increase choice and/or sales under circumstances that enhance the salience or importance of low prices (e.g., for commodity products, when brand recognition is high, and /or for price conscious consumers). Round prices, which are associated with high quality, may communicate that a product is of high quality and this may increase choice and/or sales under circumstances that enhance the salience or importance of product quality (e.g., for differentiated products, when brand recognition is low, and/or for quality conscious consumers). Basically, these studies provide poor evidence about consumer preferences for round versus non-round prices because they involve choices between products, which differ on many dimensions in addition to price, rather than choices between prices.

A better way to test for consumer preferences for round numbers is to allow consumers to choose the prices they actually pay for goods and services and to see if they disproportionately choose to pay round prices. Voluntary or “pay what you want” (PWYW) pricing has become more common in recent years with Humble Indie Bundle, Panera Bread,

Radiohead, and Steven King as prominent product and/or service providers who have used this pricing model. PWYW pricing has also become an increasingly popular topic for academic research, which has focused on the motivations and other factors that influence consumers' choices about how much to pay (e.g., Lynn, 1990; Regner and Barria, 2009; Riener and Traxler, 2011). At least one of the existing, published, PWYW studies has reported that round, whole-dollar payments are more common than non-round ones (Riener and Traxler, 2001; see also Harris and Bray, 2007) and another study of restaurant tipping contains a graph showing a tendency for many consumers to leave round, whole-dollar tip amounts (Lynn, Jabbour and Kim, 2012). However, neither article focused on consumer preference for round numbers, so the authors did not consider and test various explanations for the round payments they observed. Among the alternative explanations for a tendency to select round prices are the following:

- (1) a dislike for dealing with spare change,
- (2) a disinclination to think about trivial cent amounts,
- (3) a desire to avoid complicated mathematical calculations,
- (4) a desire to facilitate recall of prices or sales totals paid, and/or
- (5) a desire to avoid the effort of assessing the precise value of a good or service.

The studies reported below go beyond existing studies by examining consumers' choices of PWYW prices and gasoline sales totals in a variety of real-world marketplaces that permitted us to empirically assess these alternative explanations for the tendency to choose round prices.

3. Pay-What-You-Want data and analyses

We obtained two different data sets containing the prices that consumers chose to pay in situations where they were free to pay whatever they wanted. Those data sets are described and analyzed below.

3.1 Price choices for “The World of Go” (Study 1)

“The World of Goo” is a computer game that can be purchased online. To celebrate the first birthday of this game, its developers (2D Boy) allowed people to download the game for any price that they were willing to pay via PAYPAL. Information about the payment sizes in U.S. dollars received for 65,535 PWYW purchases from 104 countries were given by Ron Carmel of 2dBoy to Tobias Regner, who kindly made it available for our use here.

The prices consumers chose to pay for the “World of Goo” computer game ranged from \$0.01 to \$150.00 with a median of \$1.00, a mode of \$0.01, a mean of \$2.13, and a standard deviation of \$3.31. A summary of the analyses of these PWYW prices is presented in Table 1. One-cent was the modal price paid and forty percent of all the offered prices were under \$1.00, which suggests that a desire to pay a small amount exceeded the desire to pay a round price for many game purchasers. Nevertheless, fifty-seven percent of the consumers chose to pay a round, whole-dollar amount (.00 price ending) and another four percent chose to pay a round, half-dollar amount (.50 price ending). Both these percentages significantly exceeded the one percent expected if consumers’ price-ending selection were random ($p < .001$ using a one sample binomial test). This disproportionate choice of round, whole-dollar and half-dollar prices cannot be attributed to a dislike for handling small change because the payments were electronic. Nor can it be attributed to a desire to avoid complex mathematical calculations because the PWYW price stood alone and was not combined with other

purchases. However, it can be explained in terms of a consumer preference for round over non-round prices.

Insert table 1 about here

The data also showed clear clustering of PWYW prices at \$1.00, with twenty six percent of purchasers choosing this precise price. This is consistent with the idea that purchasers desired to pay both a small amount and a round price, because \$1.00 is the smallest round, whole dollar price possible. Apart from this clustering at \$1.00, the PWYW prices tended to have dollars digits that clustered around multiples of five dollars. When considering only prices in excess of one dollar, thirteen percent of the dollars digits ended in 0 and another forty-two percent ended in 5, both of which significantly exceed the roughly ten percent expected by chance ($p < .001$ using one-sample binomial tests). This greater than chance rounding of dollar digits to x0 and x5 suggests that consumers' prefer round prices in general and that their tendency to select round, whole and half dollar prices is more than simply a disinclination to think about relatively trivial cent amounts.

In addition, among those paying more than one dollar, selection of a .00 price ending was more common when the rightmost dollar digit was 0 or 5 than when it was not (99% vs 79%, $\chi^2(1) = 2,488.85$, $p < .001$). This later finding may be attributable to individual differences; those selecting dollar digits that are round or semi-round may have a stronger round price preference that also leads them to select .00 cent amounts. However, it is also possible that consumers choose dollar amounts of PWYW prices before choosing the cent amounts and that round or semi-round dollar amounts increase the attractiveness of .00 cent

amounts. Having selected a round or semi-round dollars portion of a PWYW price, consumers may be more inclined to choose a .00 price ending in order to avoid losing the roundness provided by their dollar choice.

One way to test this “loss aversion” idea is to have people select their own price for one product in a two-product bundle and to vary the roundness of the other product’s price. If consumers are loathe to lose round prices, then they should be more likely to select a round whole-dollar price for one product in a two-product bundle when the other product has a round price than when it has a non-round price. Fortunately, we were able to test this hypothesis in a natural experiment provided by restaurant tipping. This natural experiment also allowed us to separate round price preference from preference for easy mental processing by seeing if people with non-round bills tended to select non-round tips that summed to round amounts when the tips and bills are added together.

3.2 Gratuity/tip choices in a U.S. restaurant (Study 2)

Flynn and Greenberg (2012) obtained sales and tip data from 9,384 useable charge card receipts at an independent restaurant in Poughkeepsie, New York. They used this data to test for weather effects on tipping. We use their data to examine consumers’ tendency to leave rounded, whole-dollar tip amounts and/or non-round tip amounts that make the total bill round.

Insert table 2 about here

The tips consumers’ left their servers ranged from \$0.05 to 150.00 with a median and mode of \$5.00, a mean of \$6.14, and a standard deviation of \$4.61. A summary of the

analyses of these tip amounts is presented in Table 1. Seventy-three percent of the consumers chose to tip a round, whole-dollar amount (ending in .00) and another eight percent rounded their tip to a half dollar amount. Both of these percentages are reliably above what would be expected by chance ($p < .001$ using one-sample binomial tests). This disproportionate choice of round, whole-dollar and half-dollar tips cannot be attributed to a dislike for handling small change because the payments were made with credit cards. Nor can it be readily explained as an attempt to facilitate price recall because round tips resulted in non-round total prices (bill plus tip) more often than not and it is the total price that consumers would presumably be most interested in remembering. Furthermore, the credit card payments involved in all these transactions provided both immediate paper receipts and later billing information that should have reduced the need to recall the price paid. However, the prevalence of round tips is consistent with a consumer preference for round prices/tips.

In addition to tipping round, whole-dollar amounts, consumers clustered their tips around multiples of five dollars. Twenty-one percent of all tips had a 5 in the right most dollar digit, which is significantly more than the ten percent expected if consumers chose dollar digits at random ($p < .001$ using one-sample binomial tests). Although less than the expected proportion of all tips had a 0 ending dollar digit (only 8 percent), that is because few tips were less than \$1.00 (.2 percent) or more than \$9.99 (14.5 percent). Among the 788 consumers tipping more than \$10.99, twenty percent left a tip with a 0 ending dollar digit, which was significantly more than the ten percent expected by chance if consumers chose dollar digits at random ($p < .001$ using one-sample binomial tests). This rounding of dollar digits to 0 or 5 replicates the similar finding in Study 1 above and suggests consumers' have

a general preference for round over non-round prices that is more than simply a disinclination to think about relatively trivial cent amounts.

Also consistent with the results of Study 1, consumers chose a round, whole-dollar tip amount (.00 tip ending) significantly more often when the dollar digit of the tip was 0 or 5 than when it was not (84% vs 64%, $\chi^2(1) = 253.06$, $p < .001$). This could be an artifact of individual differences in round price preference or could reflect a tendency for round dollar digits to increase the attractiveness of .00 endings. Consistent with the latter possibility, consumers also chose a round, whole-dollar tip amount (.00 tip ending) significantly more often when the bill was a round, whole-dollar amount than when it was not (95% vs 68%, $\chi^2(1) = 518.29$, $p < .001$). This finding cannot be plausibly explained as a product of individual differences in round price preference, because it is unlikely that consumers select food items from a menu in order to produce a round, whole-dollar bill size. Thus, this finding supports the idea that having a round price for one product in a two-product bundle increases the attractiveness of a round price for the other product in the bundle. In other words, the finding suggests that consumers are loathe to lose a round price by having another non-round price added to it. Since it is easier to add a non-round tip to a round, whole-dollar bill than to a non-round bill, this finding also suggests that consumers' selection of round, whole-dollar tips is not just an attempt to reduce the cognitive effort of adding the bill and tip amount on the credit card slip.

Finally, many consumers gave tips that left a round sum when added to the bill amount. Of the 7,638 dining occasions where bill sizes did not end in .00, twenty-three percent involved an unrounded tip amount that summed to a round, whole-dollar amount when added to the bill. This percentage is substantially and significantly greater than the one-

percent that would be expected by chance ($p < .001$ using a one-sample binomial test).

Calculating non-round tips that sum to round amounts when added to bills requires mental effort, so this finding indicates that consumers' preference for round prices is distinct/separate from a preference for easily processed prices. This finding also suggests that consumers' preference for round prices generalizes to total prices (or sales amounts). To further test this latter possibility, we next examined consumers' decisions about how much of a good with a fixed unit price (gasoline) to purchase. We wanted to see if consumers selected a quantity that resulted in a round total bill more than would be expected by chance.

4. Gasoline sales data and analyses

We obtained data on 1,301 self-pumped gasoline purchases of a gallon or more made at a convenience store in upstate New York over several days in May 2005. Specifically, we obtained information about the number of gallons purchased, the total amount of the sale, and the payment method (cash vs credit) used. Three observations for which the sale was exactly \$99.00 were dropped from the dataset, because that was the maximum sale permitted by the pumps and the final price was not determined by the consumer.

The gas sales that consumers' pumped for themselves ranged from \$2.25 to \$98.91 with a median of \$20.00, a mode of \$10.00, a mean of \$20.96, and a standard deviation of \$13.32. A summary of the analyses of these gas sales is presented in Table 1. Fifty-six percent of the sales totals were a round, whole-dollar amount (ending in .00) and another four percent were a semi-round half-dollar amount (ending in .50). Another seven percent of the sales totals ended in .01, which probably reflects an attempt to stop the pump at a round, whole-dollar amount that failed due to slow reflexes. All three of these percentages are reliably above what would be expected by chance ($p < .001$ using one-sample binomial tests).

In comparison, less than one percent of the purchase quantities were a round, whole gallon amount. The disproportionate selection of round sales totals cannot be explained as desire to avoid the effort of assessing the precise value of a good or service because it involved selecting a quantity of goods to purchase rather than a price to pay. Nor can it be explained as an attempt to reduce cognitive effort, because stopping the pump at a round, whole-dollar amount required both vigilance and a rapid response once that target had been reached. However, it can be explained as a result of consumers' preference for round total prices (or sales amounts).

Insert table 3 about here

Consumers chose a round, whole-dollar sales amount (.00 price ending) significantly more often when the dollar digit of the sales was 0 or 5 than when it was not (73% vs 37%, $\chi^2(1) = 173.46$, $p < .001$). This finding replicates the similar findings from the PWYW data and is consistent with the idea that having selected a round or semi-round dollars portion of a PWYW price, consumers are more inclined to choose a .00 price ending in order to avoid losing the roundness provided by their dollar choice. This potential loss aversion effect also suggests that consumers prefer round prices because loss aversion occurs only for valued things.

In addition, the data show clear clustering of sales around round multiples of five dollars. Fifty-two percent of the sales (684 of 1305) had values of 0 or 5 in the dollars place, which was significantly more than the twenty percent expected by chance if consumers chose dollar price digits at random ($p < .001$ using one-sample binomial tests). This rounding of

dollar digits to 0 and 5 replicates the similar findings from the PWYW data and suggests that consumers' preference for round over non-round gas sales is general and more than simply a disinclination to think about relatively trivial cent amounts.

Finally, consumers chose a round, whole-dollar sales amount significantly more often when paying with cash than when paying with credit (70% vs 40%, $\chi^2(1) = 116.28$, $p < .001$). This finding could reflect a tendency for consumers to dislike having to deal with small change. However, consumers also chose dollars digits ending in 0 (42% vs 27%, $\chi^2(1) = 33.04$, $p < .001$) and those ending in 5 (22% vs 12%, $\chi^2(1) = 22.51$, $p < .001$) significantly more often when paying with cash than when paying with credit. A dislike of small change cannot explain these latter findings. Thus, it is likely that paying with cash made consumers more likely to choose round sales totals for some other reason. One possible explanation for these findings stems from the fact that this gas station required cash (but not charge) customers at some of its pumps that were less visible from inside the store to pre-pay for their gas. This meant that charge customers could simply fill the tank and pay the resulting bill, but many cash customers could not. Thus, selection of round sales totals may have been less frequent among charge customers than among cash customers because many of the former wanted to completely fill their gas tanks more than they wanted a round sales total while this option was not available to the latter. Note, however, that charge customers also chose rounded sales totals significantly more often than expected by chance, just not as often as cash customers.

5. Summary and conclusions

Consumers' choices across two different PWYW situations and one gasoline purchase situation (all involving actual payments for goods and services in the marketplace)

revealed a tendency to select round prices and/or sales totals at above chance levels. Many psychological processes could underlie the selection of round prices and sales totals.

However, only the idea that consumers have a subjective preference or liking for round prices provides a compelling explanation for the disproportionate selection of round prices and sales totals under all the conditions in which we observed it.

We found that consumers chose round prices and/or sales amounts more often than expected by chance when:

- (1) payment was cashless (Studies 1, 2 and 3) - hence not attributable to a dislike of spare change,
- (2) only dollar digits were considered (Studies 1, 2 and 3) - hence not attributable to a disinclination to think about trivial cent amounts,
- (3) payment was stand-alone (Studies 1 and 3) - hence not attributable to avoidance of mathematical calculations,
- (4) achieving round sales totals (bill plus tip) required more complicated math than achieving non-round sales totals (Study 2) - hence not attributable to avoidance of mathematical calculations,
- (5) payments were made with credit cards, which provide both immediate paper receipts and later billing information (Studies 2 and 3) - hence not attributable to a need to facilitate price/sales recall,
- (6) achieving round sales totals (bill plus tip) required selection of a PWYW amount that was not a precise reflection of the value of services received (Study 2) - hence not attributable to an avoidance of precise value assessments,

(7) achieving round sales totals involved selecting a quantity of goods to purchase rather than a price to pay (Study 3) - hence not attributable to an avoidance of difficult, precise value assessments, and

(8) achieving round sales totals involved vigilance and a rapid response (Study 3) – hence not attributable to a desire to reduce cognitive effort in general.

The most parsimonious explanation for all these findings is that they reflect a subjective preference (or liking) for round over non-round prices and sales totals. Such a preference for round prices and sales totals also helps to explain our Study 2 finding that consumers chose round tip amounts more often when the bill was round, because loss aversion is the most compelling explanation – i.e., the loss of price-roundness (in the bill) bothers consumers more than the gain of price-roundness (in the tip) pleases them – and it applies only to things with positive value. Furthermore, this “round-price preference” explanation is consistent with consumers’ self-rated preferences as reported in the marketing literature and discussed in the introduction.

The preference for round prices and sales-amounts suggested by our findings is likely to have several origins or causes. Two possibilities are that the frequency of round numbers and the ease of processing them contribute to a preference for round numbers that may simply generalize to round prices (e.g., Plug, 1977; Pope and Simonsohn, 2011). A third possibility is that the association of round prices with higher quality products in both the marketplace and consumers minds (Naipaul and Parsa, 2001; Stiving, 2000) may condition consumers to have more favorable attitudes toward round prices. Testing these and other explanations for a round-price preference and their implications for individual and situational

differences in the strength of that preference is beyond the scope of the current studies, but is one potentially worthwhile direction for future research.

The consumer preference for round prices and sales-amounts suggested by our PWYW and gasoline purchase findings is important because that preference may affect consumers' decisions in other contexts. In particular, this preference may influence consumers' choices between products whose prices vary in roundness. Of course, price roundness may also influence product selection by signaling product quality (Naipaul and Parsa, 2001; Stiving, 2000) or affecting perceived price magnitude (Bizer and Schindler, 2005; Thomas, Simon and Kadiyali, 2010), so the effects of round-price preference may be moderated by these other processes. Indeed, the mixed results of existing research on price-ending effects on consumer choice (see Anderson and Simester, 2003; Bray and Harris, 2006; Guido and Peluso, 2004) may be attributed to cross-study variation in conditions that strengthen or weaken one or more of these competing processes. Thus, future researchers need to be aware of and control for these other processes when studying round-price preference effects on consumer choice.

The consumer preference for round prices suggested by our findings may also affect financial bidding behavior and, ultimately, market prices. Indeed, prices in various financial markets exhibit clustering around round numbers (see Sonnemans, 2006; Sopranzetti and Datar, 2002) and some scholars have argued that this can be explained by a preference for certain price digits over others (e.g., Mitchell, 2001; Sonnemans, 2006). The current studies give this explanation credibility by supporting the existence of a preference for round prices, but do not demonstrate that this preference actually underlies the clustering of market prices. That too is a potentially interesting area for future research.

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Table 1. Summary of analyses of PWYW payments for World of Goo in Study 1

Price Digit	Sample Size	Actual Percentage Choosing*	Expected Percentage Assuming Random Choice
Among the whole sample			
PWYW Price = xx.00	65,535	57%	1%
PWYW Price = xx.50	65,535	4%	1%
Among those choosing to pay more than \$1.00			
PWYW Price = x0.xx	22,526	13%	10%
PWYW Price = x5.xx	22,526	42%	10%
PWYW Price = xx.00 _{when dollars digits ended in 0 or 5}	12,349	99% ^a	10%
PWYW Price = xx.00 _{when dollars digits did not end in 0 or 5}	10,177	79% ^b	10%

* In every case, the actual percentage choosing a particular price digit differed significantly ($p < .05$) from expectations if digit selection were random. Also, adjacent percentages with different superscripts differed significantly ($p < .05$) from one another. Adjacent percentages without superscripts are not independent and their differences were not statistically tested.

Table 2. Summary of analyses of tips from restaurant in Study 2.

Price Digit	Sample Size	Actual Percentage Choosing*	Expected Percentage Assuming Random Choice
Among the whole sample			
Tip = xx.00	9,384	73%	1%
Tip = xx.50	9,384	8%	1%
Tip = x0.xx	9,384	8%	10%
Tip = x5.xx	9,384	21%	10%
Tip = xx.00 when dollar amount of tip ends in 0 or 5	2,690	84% ^a	1%
Tip = xx.00 when dollar amount of tip does not end in 0 or 5	6,694	68% ^b	1%
Tip = xx.00 when food bill ends in xx.00	1,746	95% ^a	1%
Tip = xx.00 when food bill does not end in xx.00	7,638	68% ^b	1%
Tip + Bill = xx.00 when food bill ends in xx.00	1,746	95% ^a	1%
Tip + Bill = xx.00 when food bill does not end in xx.00	7,638	23% ^b	1%
Among those tipping more than \$10.99			
Tip = x0.xx	788	20%	10%
Tip = x5.xx	788	21%	10%

* In every case, the actual percentage choosing a particular price digit differed significantly ($p < .05$) from expectations if digit selection were random. Also, adjacent percentages with different superscripts differed significantly ($p < .05$) from one another. Adjacent percentages without superscripts are not independent and their differences were not statistically tested.

Table 3. Summary of analyses of self-pumped gasoline sales in Study 3.

Price Digit	Sample Size	Actual Percentage Choosing*	Expected Percentage Assuming Random Choice
xx.00	1,301	56%	1%
xx.50	1,301	4%	1%
x0.xx	1,301	35%	10%
x5.xx	1,301	18%	10%
xx.00 when dollars end in 0 or 5	684	73% ^a	1%
xx.00 when dollars digits do not end in 0 or 5	617	37% ^b	1%
xx.00 when paid with cash	681	70% ^a	1%
xx.00 when paid with credit	620	40% ^b	1%
x0.xx when paid with cash	681	42% ^a	10%
x0.xx when paid with credit	620	27% ^b	10%
x5.xx when paid with cash	681	22% ^a	10%
x5.xx when paid with credit	620	12% ^b	10%

* In every case, the actual percentage choosing a particular price digit differed significantly ($p < .05$) from expectations if digit selection were random. Also, adjacent percentages with different superscripts differed significantly ($p < .05$) from one another. Adjacent percentages without superscripts are not independent and their differences were not statistically tested.