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Voting or Buying: Inconsistency in Preferences toward Food Safety in Restaurants

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Abstract: Consumers sometimes prefer stricter food regulations as voters than as consumers. A prime example is that battery-cage eggs were the most sold types of eggs in California in 2008 when 63% of voters supported the animal welfare proposition forbidding battery-cage eggs starting from from 2015. In this paper, we investigate whether a similar consumer-citizen duality might exist in willingness to pay for food safety standards in restaurants. Using a split sample willingness to pay survey we find that consumers have a higher willingness to pay for improved restaurant food safety standards when voting than when acting as consumers. The results are discussed in the light of the literature on trust, social choice and public choice theory.

Keywords: Consumer-Citizen Duality, WTP, Food-Safety in Restaurants, United States

Introduction

People have multiple roles in life. One day, they act as consumers and go to the grocery store and buy food products. The next day, they act as citizens and vote on regulations over the food products they buy as consumers. Vanhonacker et al. (2007) labeled this the consumer-citizen duality, and pointed out that the same individual might exhibit preferences as a citizen that differs from those expressed as a consumer. A recent example supporting this is the results from the 2008 California ballot proposition on animal welfare. Californians overwhelmingly voted in support of a proposition forbidding battery eggs, which at the time of the vote were the most popular types of eggs (Norwood and Lusk 2011, pp. 264-5). With this as a background, we ask whether it matters if we elicit consumer preferences or citizen

preferences when it comes to food characteristics. The characteristic in our case is food safety standards in restaurants. The answer to this question can be critical in how we design our food preference studies in the future.

A similar debate has been going on for years in the environmental economic literature. In his seminal book, Sagoff people as voting citizens also are concerned about what is good or right for the community. He argues that the attempts to capture environmental values through market-mimicking mechanisms and monetary valuation are based on a falls assumption that the preferences that an individual has as a citizen are the same as those he or she has as a consumer.

Following Sagoff argument, the consumer is likely concerned about price, taste, food safety and nutrient when buying food. While the citizen is also likely to be concerned about attributes such as animal welfare, environmental friendly, fair-trade, origin and public food safety. This list corresponds well with some of the food quality regulations that have been intensely debated in Europe and in the US. Some of the most contented proposals in the US have been: to totally or partially eliminate antibiotics use in livestock production; to ban the use of swine gestation crates; to reduce the amount of pesticides residuals allowed on fresh and processed foods; to require mandatory labeling of genetically engineered food; and to require mandatory country-of-origin labeling and a proposal to ban battery cage eggs. Even though many of these issues are handled with regulations instead of voluntary labeling, most academic research have focused on consumers' WTP a price premium in a market setting for products with such attributes (Huffman et al. 2003; Tonsor, Schroeder, and Lusk 2012; Costanigro et al. 2010; Lusk et al. 2005).

The lack of literature focusing on the consumer-citizen duality in the food economics literature is striking. One exception is Hamilton, Sunding and Zilberman (2003), which consider a mandated reduction in the use of agricultural pesticides that increases the price of

food, reduces individual health risk, reduces option value and enhances environmental quality. They first asses consumer WTP for an absence of pesticide residues on food, then examine support for government regulation of pesticide residues. They find that some individuals support a ban on the use of pesticides in agriculture, but are not willing to pay a premium for pesticide-free food. This indicate a willingness to regulate away even at a cost something you are not willing to pay extra to avoid as a consumer.

There are also other papers that touch upon similar issues without being so explicit on the consumer-citizen duality as Hamilton, Sunding and Zilberman (2003). Lusk, Norwood and Pruitt (2006) and Loureiro and Hine (2004) discuss both market and regulation possibilities. Lusk and colleagues look at labeling versus a ban on antibiotic drug use in pork production. They find a high WTP for antibiotic free-pork and a willingness to accept a ban that increased their taxes. Due to differences in question formates it is not possible to evalueate whether there where differences between the consumer and citizen preferences. Loureiro and Hine look at the WTPa tax to support mandatory or voluntary labling of GM products, and find a higher WTP for a mandatory labeling system.

Two studies of Carlsson, Frykblom and Lagerkvist (2007a; 2007b) use a somewhat different approach. They ask people to choose between products in a market situation, but allow the products in the market to vary with respect to what kind of regulations they are in. Carlsson, Frykblom and Lagerkvist (2007a) found that Swedish consumers' WTP for GM-free meat are independent of the regulations for GM meat. In the second paper, Carlsson, Frykblom and Lagerkvist (2007b), they assessed the WTP for a ban on battery cage eggs in Sweden. They found that consumers preferred free-range eggs that were produced under regulations where battery-cage eggs were banned, to free-range eggs that were produced under regulations where battery-cage eggs were not banned. They argue that this shows that consumers prefer regulation over a labeling solution.

But as pointed out by Hamilton, Sunding and Zilberman (2003), for proper economic analysis and recommendations, it is very important to distinguish between respondents acting as consumers and respondents acting as citizens. They suggested that WTP as consumers and referendum choices as citizens are different, and that people may show other preferences in a market than in a political environment. Hence it is important to identify the objectives of the study. Is it to analyze citizens' voting or consumer purchasing behavior? The drivers behind legislation and a market solution are different. The legislation may encourage respondents to express citizen values based on ethical and political judgment, while the market may encourage respondents to express pure consumer preference over bundles of goods.

In this paper, we investigate the consumer-citizen duality in peoples' behavior toward food safety standards in restaurants using a split-sample willingness to pay (WTP) survey. Specifically, we assess (1) to what degree consumers and citizens are willing to pay for reduced food safety risks in restaurants; (2) whether framing the WTP question as a citizen-oriented voting question or as a consumer-oriented buying question affects the results; (3) whether the level of the reduced food safety risk matters; and (4) demographic differences in WTP for reduced food safety risk. To avoid differences due to people being negative toward paying taxes, both the citizen-oriented voting question and the consumer-oriented buying question have price increases as their payment vehicle.

The outline of the remaining paper is as follows. We first review the concepts of consumer-citizen duality, followed by a short literature review on consumer preferences toward food safety. Third is the methodology and description of data. Fourth is the description of the econometric model used. Fifth is the empirical results from the descriptive and econometric models and last we discuss the results and conclude.

Consumer-Citizen Duality

Authors in social choice theory and public choice suggest people have multiple preference orderings, and which one they use depends on the context they are in (Mueller 1987; Arrow 1951; Harsanyi 1951; Russell, Bjørner, and Clark 2001; Sagoff 1988; Ovaskainen and Kniivilä 2005; Sen 1977). We are here interested in the consumer-citizen duality found when people show different preference when they vote over regulations than when they act as consumers (Vanhonacker et al. 2007). Some of the studies addressing issues related to the consumer-citizen duality include (Blamey, Common, and Quiggin 1995; Sagoff 1990; Ajzen, Brown, and Rosenthal 1996; Russell, Bjørner, and Clark 2001; Ovaskainen and Kniivilä 2005) in the literature on environmental regulation and (Hamilton, Sunding, and Zilberman 2003; Lusk, Norwood, and Pruitt 2006; Carlsson, Frykblom, and Lagerkvist 2007b; Carlsson, Frykblom, and Lagerkvist 2007a) in the literature on food economics.

When voting individuals tend to respond as citizens and put more emphasis on the public value than when making choices as consumers. For example, individuals tend to express more altruistic preference when they assume the role of a citizen than when they assume the role of a consumer (Ajzen, Brown, and Rosenthal 1996; Hamilton, Sunding, and Zilberman 2003; Ovaskainen and Kniivilä 2005; Wiser 2007). Analyzing consumer preferences for a public good, Blamey, Common and Quiggin (1995) found that the answers to the referendum question were dominated by citizen judgment concerning social goals rather than consumer preference. They argue that this was because the referendum question had more in common with political choices than with consumer decision in a market-place.

Some of the reasons for the discrepancy in preferences between a citizen role and a consumer role include free-riding, trust and the emphasis of prices in different contexts. For goods with a public good element it is in the individual's best interest to free-ride and let the others carry the cost of the public good. This result in people only being willing to pay when they are sure everybody else is paying. For example, Wiser (2007) found respondents were

willing to pay a higher premium when they were confronted with a collective payment mechanism than when they were confronted with a voluntary payment mechanism. People are also only willing to pay if they trusttrust that the premium they pay will contribute to improve the public good (Toma et al. 2011; Harper and Henson 1999). Furthermore, it could be that cost is perceived differently in different contexts. For example in a grocery store direct feedback is received when buying hence a consumer concentrates on all attributes including price while in a voting booth no direct feedback on cost is received hence a citizen would concentrate on the non-price attributes when making a decision in the referendum (Lusk and Norwood 2011).

A number of studies assessing the consumer-citizen duality have been reported in the literature on public and semi-public good valuation (Ajzen, Brown, and Rosenthal 1996; Blamey, Common, and Quiggin 1995; Nyborg 2000; Russell, Bjørner, and Clark 2001; Wiser 2007; Ovaskainen and Kniivilä 2005). The results in these studies indicate that respondents given citizen-oriented WTP questions have higher WTP than respondents given consumer-oriented WTP questions. For example, Wiser (2007) found higher WTP when participants were confronted with a collective payment mechanism than when voluntary payment mechanisms were used for renewable energy. Ovaskainen and Kniivila (2005) found that, participants who took the citizen role gave fewer zero-WTP responses and higher WTP to sustain conservation areas.

A related literature focuses on differences between attitudes and actions (attitude-behavior-gap) of individuals. People say they are concerned about ethical issues such as animal welfare, fair trade, and sustainability, but it does not show in their purchases (Harper and Henson 2001; Cowe and Williams 2000; de Barcellos et al. 2011; Bray, Johns, and Kilburn 2011; Verbeke et al. 2010).

Food Safety and Regulation Issues

Food safety is one of the most important food characteristics in most countries (Lusk and Briggeman 2009; Alphonce and Alfnes 2012). Most of the public policies related to food safety are the outcome of complex trade-offs between the interest of different groups affected by the policy (consumers, farmers, consumer-groups, retailers, manufacturers and taxpayers).

The literature on preferences related to food safety can be divided up in several strains. Hayes et al. (1995); Nayga, Woodward and Aiew (2006) and Teisl and Roe (2010) all look at WTP for food treated with various methods for reducing the risks of food-borne pathogens. They all find significant positive WTP supporting measures to reduce the risks of food-borne pathogens. A second strain of the literature studies the WTP for reduction in pesticides residuals (Baker 1999; Baker and Crosbie 1993; Buzby, Ready, and Skees 1995; Hamilton, Sunding, and Zilberman 2003; Roosen et al. 1998). Most of these studies assessing WTP for safer foods or assessing the benefit-cost ratio for reduced food-safety risks are set up as marketing studies and not asking what the respondents want the government to do. Despite this, they come with policy advices related to food safety. One exception is Hamilton et al. (2003), which did both a market study and a regulation study and compared WTP in the two scenarios.

Country of origin of food is also often associated with food safety. Both the EU and the US have now mandatory country-of-origin labeling (COOL) on very many food products. Studies of preferences toward COOL that have been used to advise on policy implementations has mainly been marketing studies investigating consumer preferences and choice (see e.g., (Alfnes and Rickertsen 2003; Alfnes 2004; Loureiro and Umberger 2003; Loureiro and Umberger 2005; Mabiso et al. 2005; Schupp and Gillespie 2001).

Marketing like WTP studies have also been used to advice on labeling policies for genetically modified organisms (GMO). For example, Loureiro and Hine (2004) found that

consumers were willing to pay a small premium for the mandatory labeling scheme, but the premium was lower than the assessed cost. In the 2012 election, Californian voters had to vote on a proposition requiring mandatory labeling of GMO products. The proposition was defeated by 51.8% of the votes (Dahl 2012). Public votes as this offers a very good opportunity to test the external validity of various elicitation mechanisms, and hopefully future research will use these opportunities to give us a better understanding of the relationship between various types of WTP studies and voting behavior.

Method and Data

The survey was part of a restaurant experiment conducted in 2010 at a university campus in the north-east of the US. A total of 864 participants were recruited to take part in the experiment, and they were offered a free meal of their choice for their participation.

Participants were recruited from the university, and also from the local community. The local community represented approximately 25% of the final sample. University participants were diverse, and included students (undergraduate and graduate), faculty and staff members. It should be noted that faculty and staff also represent the local community; therefore overall the sample was well balanced and diverse for such a study. Upon recruitment participants were given minimal information so that the purpose of the study was not revealed. On the study day, the participants were seated in the restaurant and given a voucher (as an endowment) to 'spend' on their meals. If they spent less on the meal then they could keep the change as their own money. Therefore, in the WTP split-sample there was a price incentive for them to reveal their preference.

Survey Questions and Design

We used two multiple price list (MPL) questions to elicit WTP for improved restaurant food safety standards. The first question was formed as a consumer-oriented buying question while the second question was formed as a citizen-oriented voting question. The price lists had six price intervals. The lowest was not willing to pay or voting no for a 1%-5% increase in meal price and the highest was willing to pay or voting yes to an increase of more than 30% of the meal price. Both questions came in three versions varying in the degree of reduction in the chances of getting a food related illness (25%, 50% and 75%). To investigate the differences between the two question formats and three reduction levels each participant was randomly assigned to one of the six combinations. Table 1 present the questions.

Sample

Table 2 presents the descriptive statistics for the sample. As stated earlier, while the study included consumers from a university town, the participants represent a wide range of demographic characteristics. Age ranged from less than 25 years to those over 60 year old. Education ranged from those with less than grade 12 to those with a PhD degree. Income ranged from those with a household income of less than 20,000 USD per year to those with more than 150,000 USD. Females were overrepresented with almost twice as many females as male participants. The sample also included students, employees, unemployed, part time workers, and retired officers. Household size varied from those living alone to people with 8 persons in their household. We tested for differences in participant characteristics between the buyer and voter subsample using the Hotelling's multivariate paired comparison T-squared test. The six characteristics in Table 2 were included, and we could not reject the null hypothesis of equal sample characteristics (p=0.29).

Econometric Model

We follow the common practice used in MPL studies and estimated an interval regression model (see, e.g. Andersen et al. 2006). The WTP is not observable, but an interval around the WTP is known. We want to investigate differences in WTP due to differences in risk reduction, differences in elicitation method, and differences in preferences over genders and age groups. To investigate this we estimate the following four models (hereafter referred to as Model 1, 2, 3, and 4):

$$(1) \quad WTP_i^* = \beta_0 + \beta_1 50\%RR_i + \beta_2 75\%RR_i + \varepsilon_i$$

$$(2) \quad WTP_i^* = \beta_0 + \beta_1 50\%RR_i + \beta_2 75\%RR_i + \beta_3 Vote_i + \varepsilon_i$$

$$(3) \quad WTP_i^* = \beta_0 + \beta_1 50\%RR_i + \beta_2 75\%RR_i + \beta_3 Vote_i + \beta_4 female + \beta_5 femvote + \varepsilon_i$$

$$(4) \quad WTP_i^* = \beta_0 + \beta_1 50\%RR_i + \beta_2 75\%RR_i + \beta_3 Vote_i + \beta_4 yfem + \beta_5 ymale_i + \beta_6 omale_i + \beta_7 vyfem_i + \beta_8 vymale_i + \beta_9 vomale_i + \varepsilon_i$$

Where WTP_i^* is the percentage of a meal price that participant *i* is willing to pay or vote yes to support for reduced food safety risks; β_0 is the constant term and the other betas are the money metric parameters for the independent variables. $50\%RR_i$ is a dummy variable taking the value one if participant *i* is asked about a 50% reduced risk, and zero otherwise; $75\%RR_i$ is a dummy variable taking the value one if participant *i* is asked about a 75% reduced risk, and zero otherwise. In model 2 we add $Vote_i$, which is a dummy variable taking the value one if participant *i* is in the voting elicitation treatment and zero otherwise. In model 3 we add $female_i$, which is a dummy taking the value one if participant *i* is female, and zero otherwise; and $femvote_i$, which is a dummy taking the value of one if participant *i* is a female voter and zero otherwise. In model 4, we replace $female_i$ and $femvote_i$ with six dummies to capture differences between age and gender segments. $yfem_i$, $ymale_i$ and $omale_i$ is a series of dummies for young female, young male, and older male; and $vyfem_i$, $vymale_i$ and $vomale_i$ is a series of dummies for young female voters, young male voters, and old male voters. ε_i is the normal distributed error term. The model is estimated with the *intreg* command in STATA 12.

Results and Discussion

Willingness to Pay

Figure 1 and Table 3 presents the results from the citizen-oriented voting questions and the consumer-oriented buying questions, for all three levels of reduced food safety risk (25%, 50%, 75%). Starting with the figure, we can see that for both buyer (in the first column) and voters (in the second column) there is no noteworthy difference in WTP between the risk reduction levels. However, comparing the figures across the columns we can see a difference in WTP between the buyers and the voters for all three levels of food safety risk reduction. As seen for the 50% reduction in food safety risk, 25% of the buyers were not willing to pay anything while the corresponding number for citizens was only 11%. Furthermore, 60% of the consumers were willing to pay less than six percent while the corresponding number for citizens was 41%. In other words, people were significantly less willing to pay an increased price when they acted as consumers than when they acted as citizens. Similar results are also found for the 25% and 75% reduced food safety risks.

Table 3 presents the estimation results from the four models. Model 1 is estimated with a split sample and the results are presented in result column 1 and 2, while the results of model 2, 3 and 4 is presented in column 3, 4, and 5, respectively. The estimation results confirm the results indicated by the distribution figure. We find a significant difference in WTP between buyers and voters and we find no significant differences between the risk reduction levels. The latter results is consistent with the lack of scale effects found in much of the literature that investigates consumers WTP for reduced risks in food (see e.g., (Hayes et al. 1995); (Lichtenstein 1978)).

From model 1, we found that on average the participants answering the consumer-oriented buying question were willing to pay a 3.96% (= 3.44 + 0.52) price increase for a 50%

reduction in food safety risk, while those that answered the citizen-oriented voting question were willing to pay a price increase of 7.44% (=7.60 - 0.16). Similar differences were also found from the other three models and other reduction levels. To get a monetary value on the WTP, these percentages should be seen together with the average amount of US$ 5.6, US$ 7.8 and US$ 13.6 the respondents said they would spend for a breakfast, lunch and dinner at a restaurant. There were no significant differences between the voter and buyer subsamples with respect to how much they spent on restaurants.

The difference we get between the consumer-oriented buying question and the citizen-oriented voting question collude well with the limited literature on consumer-citizen duality for food and non-food products. For example, Ovaskainen and Kniivila (2005) in a study testing for the consumer-citizen duality on WTP a tax in support of conservation areas in Finland found that participants who were exposed to a citizen-oriented framing of the question had substantially fewer zero-WTP responses and higher WTP compared to those exposed to a consumer-oriented framing of the question.

Demographic Differences

When we include demographic effects in model 3 and 4, gender becomes significant. On average female participants were willing to pay 1.45% more than male participants for the risk reduction. From model 3, we find that on average male and female buyers were willing to pay a price increase of 2.73% (=2.58+0.15) and 4.18% (=2.58+0.15+1.45), respectively, for a 50% reduction in risk. The corresponding numbers for buyers were 7.61% (=2.58+0.15+4.88) and 7.55% (=2.58 +0.15+1.45+4.88-1.51). Hence, gender had a significant effect on WTP among those given the consumer-oriented buying questions, but no effect when the citizen-oriented voting question was asked. Also when including age and gender segments in model 4, we found significant differences between the segments for the buyers, but the differences

were canceled out for the voters. From the last column, we can see that young males were willing to pay 2.01% less for risk reduction than the base group older female when they were buyers, but only insignificantly 0.16% less (= -2.01+1.85) when they were voters. This indicates that men and women had similar willingness to pay for a reduction in food born risk level in society, but women were willing to pay more to protect themselves when going to restaurants. This is in line with previous findings about women worry more about food safety than men (Baiardi, Puglisi, and Scabrosetti 2012; Chattopadhyay and Duflo 2004).

Conclusion and Recommendation

US citizens often vote for different propositions when they have elections. They might vote for regulations with an effect on private and public values like food safety, animal welfare, sustainability and the environment. However, most studies investigating WTP for such attributes use market mimicking mechanisms that are unlikely to reflect how people react to such propositions. A good real life example is the California egg paradox where the majority voted yes to the proposition on animal welfare forbidding battery eggs even though battery eggs were the dominant egg type in the market.

The still limited literature on consumer-citizen duality indicates that we need to separate consumer preferences and citizen preferences. We use a split sample test to see if respondents answer a consumer-oriented WTP question differently than a citizen-oriented WTP question. We find that both men and women are willing to pay significantly more if asked a voting question than if asked a buying question. Furthermore, women are willing to pay more than men when asked a buying question, but not when asked a voting question. This indicates that people show different preferences when they act in different roles, and that they behave differently when they are voting for a proposition than when they act as consumers. Hence, consumption behavior is a poor predictor of political behavior and vice versa.

The observation that consumption preferences may differ markedly from political preferences has implications for the use of WTP techniques. The use of market mimicking WTP techniques might significant underestimate the support for public policies. Therefore, it is important for researchers to consider what their objectives are when designing a valuation study. They should identify whether they are interested in measuring consumer or citizen preferences and apply the necessary technique for the specific goal.

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Table 1. **Willingness to Pay Questions**

A. Consider the restaurant in your neighborhood. Please indicate how much extra you would be willing to pay if this restaurant implemented food safety standards that reduced the chances of getting a food related illness by 25% / 50% / 75%?

☐ I am not willing to pay extra to ensure safe food

☐ 1% - 5% of meal price

☐ 6% - 10% of meal price

☐ 11% - 20% of meal price

☐ 21% - 30% of meal price

☐ More than 30% of meal price

B. Please indicate if you would vote "Yes" or "No" to new food safety regulations that would reduce food safety risk at your neighborhood restaurant by 25% / 50% / 75% and increase the price of the restaurant meals by the following amounts.

% of meal price increase	**How would you vote?**	
1% - 5% of meal price	☐ Yes	☐ No
6% - 10% of meal price	☐ Yes	☐ No
11% - 20% of meal price	☐ Yes	☐ No
21% - 30% of meal price	☐ Yes	☐ No
More than 30% of meal price	☐ Yes	☐ No

Table 2. Descriptive Statistics for the Sample

Variable	Full Sample				Split Treatment Groups							
					Buyers				Voters			
	Mean	Std	Min	Max	Mean	Std	Min	Max	Mean	Std	Min	Max
Age[a]	3.30	1.67	1	6	3.31	1.70	1	6	3.28	1.64	1	6
Female[b]	0.67	0.47	0	1	0.66	0.47	0	1	0.68	0.47	0	1
Income[c]	4.33	2.14	1	8	4.42	2.08	1	8	4.25	2.19	1	8
Education[d]	4.00	1.09	1	6	4.00	1.07	2	6	3.90	1.10	1	6
Under 5[e]	0.13	0.33	0	1	0.11	0.31	0	1	0.14	0.35	0	1
HH size[f]	2.63	1.26	1	8	2.61	1.27	1	7	2.67	1.27	1	8

[a] Scale used on age question: Less than 25 year =1; 26-30=2; 31-40=3; 41-50=4; 51-60=5; >60=6. [b] Dummy: One if female, 0 if male. [c] Scale used on income: Less than 20,000=1; 20,001-30,000=2; 30,001-40,000=3; 40,001-50,000=4; 50,001-70,000=5; 70,001-100,000=6; 100,001-150,000=7; >150,000=8. [d] Scale used on education: Less than grade 12=1; high school=2; college=3; Bachelor Degree=4; Masters or professional Degree=5; Doctoral Degree=6. [e] Dummy: One if have a child under 5, 0 otherwise. [f] Dummy: One if only one or two persons in the household, 0 otherwise.

Table 3. Willingness to Pay for Reduced Food Safety Risk

Variables	Split Sample		Full Sample		
	Model 1 Buying	Model 1 Voting	Model 2	Model 3	Model 4
Constant	3.44***	7.60***	3.55***	2.58***	4.39***
	(0.58)	(0.64)	(0.51)	(0.72)	(0.70)
50% Reduced risk	0.52	-0.16	0.17	0.15	0.16
	(0.81)	(0.91)	(0.61)	(0.61)	(0.61)
75% Reduced risk	1.04	0.59	0.81	0.85	0.84
	(0.81)	(0.90)	(0.61)	(0.61)	(0.61)
Voting			3.88***	4.88***	2.95***
			(0.50)	(0.88)	(0.86)
Female				1.45*	
				(0.76)	
Female*Voting				-1.51	
				(1.07)	
Young*Female					-0.77
					(0.88)
Young*Male					-2.01**
					(1.03)
Old*Male					-1.57
					(1.11)
Vote*Young*Female					0.86
					(1.22)
Vote*Young*Male					1.853
					(1.43)
Vote*Old*Male					2.14
					(1.63)
Sd υ	1.88***	2.01***	1.96***	1.96***	1.96***
	(0.044)	(0.039)	(0.0291)	(0.0291)	(0.03)
Sd ε	6.55	7.48	7.08	7.07	7.06
	(0.29)	(0.29)	(0.21)	(0.21)	(0.21)
n	431	433	864	884	864

Note: *P<0.10, ***P<0.05, ***P<0.01. Standard errors in parenthesis.

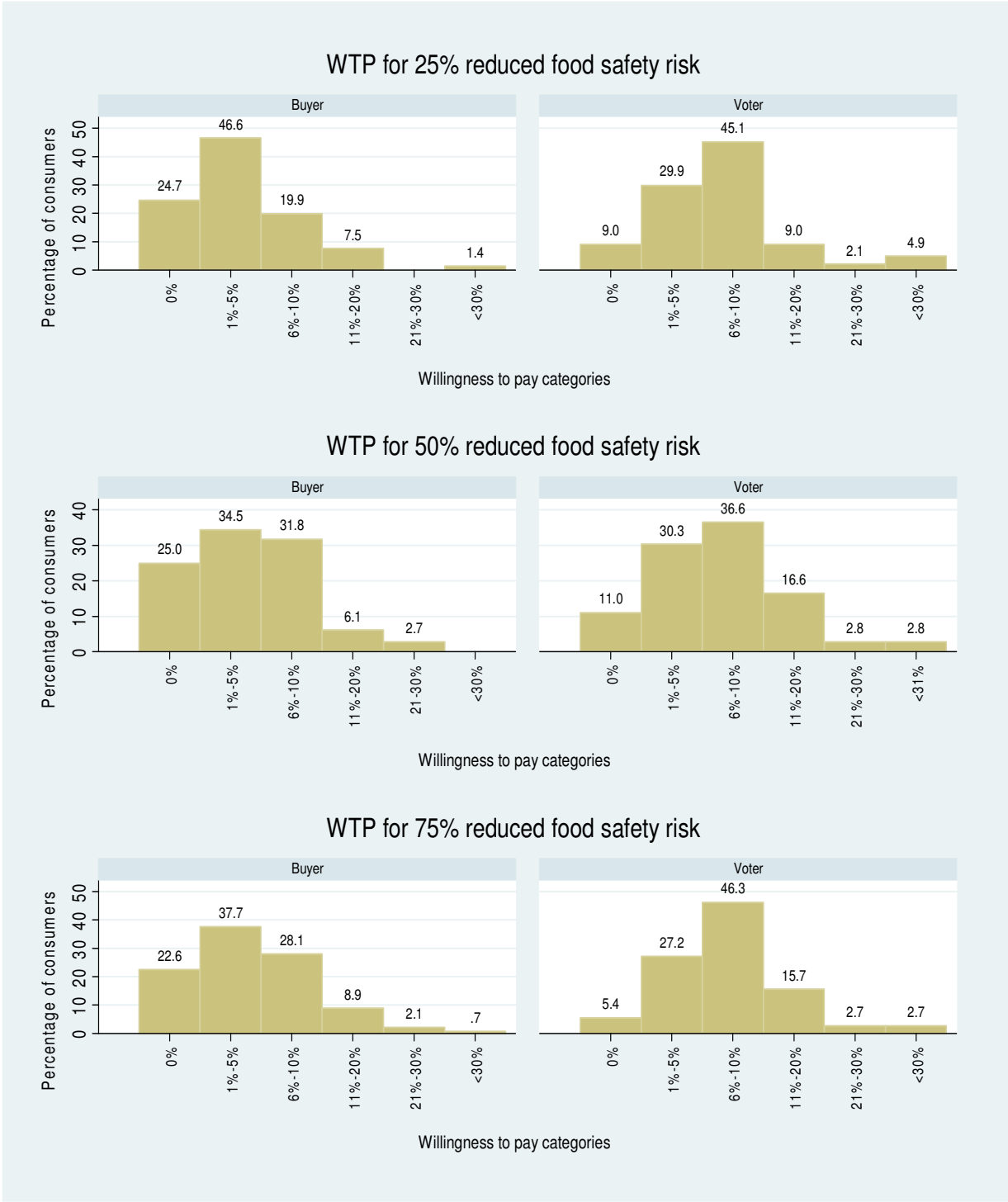

Figure 1. Willingness to Pay for food safety improvements by buyers and voters