

# **Exit Polling Results Analysis**

## **Kate Shoemaker and Tiffany Thompson**

### **STAT 283**

#### **INTRODUCTION**

On November 4, 2008, Kate Schoemaker and Tiffany Thompson polled Precinct 15 of Washington, DC between the hours of 4:30pm and 7:30pm. Presented here are our results, observations, and reflections:

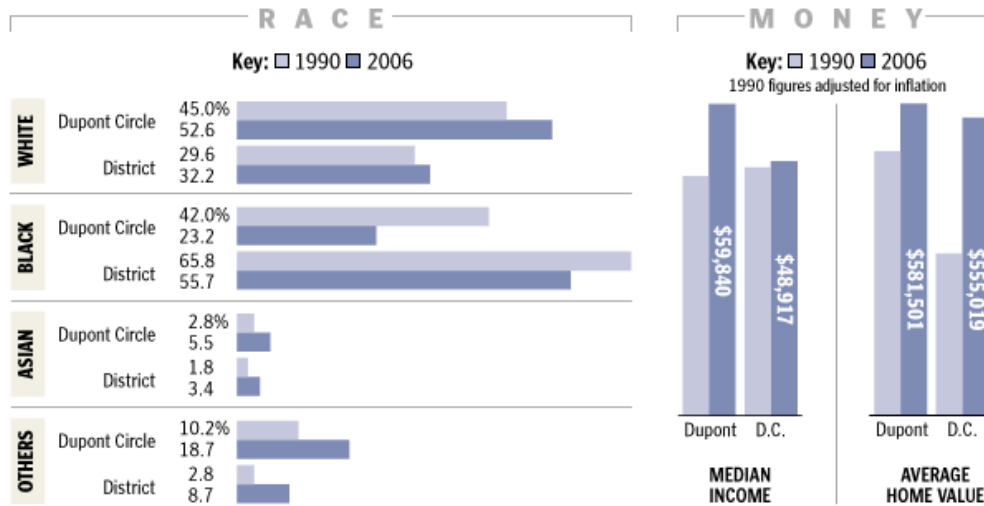
To quickly highlight our results: we found that our respondents voted 75% for Obama, and 19% for McCain. While the certified results from our precinct also showed Obama securing a majority of the vote, our results indicated less of a landslide victory for him. We broke down the results for all questions by interviewer, and it appears that the respondents answered similarly for both Kate and Tiffany.

Our mission was to design, conduct, and analyze the results of a survey of Washington D.C. voters. Our questions were carefully chosen while keeping the geographical area in mind. Questions specifically regarding local D.C. issues were included. The composition of our polling sample was captured with demographic questions. We wanted to learn who voted for each candidate, which issues were most important, and how respondents felt about the current political situation. Additionally, we wanted to compare our precinct's responses with the certified results reported by the District of Columbia's Board of Elections & Ethics.

#### **VOTING LOCATION**

Our polling location was the Foundry United Methodist Church, located at 1500 16<sup>th</sup> Street, NW Washington D.C. The location was in the 15<sup>th</sup> precinct of Ward 2. The Church is located in Dupont Circle, which is known for being a more culturally diverse and liberal-leaning neighborhood.

In 2006, the Washington Post graphically displayed some socio-economic data for the Dupont Circle area (Kirkham, 2006), using data from Environmental Systems Research Institute (ESRI). This is the most current data for this neighborhood available to the public. Shown below are some selected findings:



We can see here that this area is becoming increasingly racially diverse. We can also see that this population averages higher incomes compared to the rest of the District, and that the average home value here is much higher than the average of the rest of the District.

The 15th Precinct has reliably voted for the Democratic Presidential nominee in the past. For the 2004 Presidential election, 87% of the vote went to the Democratic ticket of Kerry/Edwards, and 9.44% to the Republican ticket of Bush/Cheney (DCBOEE, 2004). For the 2000 Presidential election, the Democratic ticket of Gore/Lieberman got 75% of the vote, and the Republican ticket of Bush/Cheney got 10.5% of the vote (DCBOEE, 2000). Therefore, we were not very surprised to see the Democratic voting trend continue to the 2008 Presidential elections.

Our polling location had both electronic machines and paper ballots, allowing voters to choose their preferred method. The location was open from 7:00am, until 8:00pm. Voters standing in line at 8:00pm were allowed to vote regardless of the time they actually made it inside the polling location.

### COLLECTION METHODS

The survey questions were carefully selected and phrased. A template of the blank questionnaire can be found in Appendix A. First drafts of the questionnaire were distributed

in a pre-test, and much was learned from the results. All suggestions/comments were carefully evaluated during the pre-testing, and alterations were made for the final version. Additionally, two questions specifically relevant to the District of Columbia were included. These questions dealt with D.C. citizens voting rights, and D.C.'s public school tuition voucher program. It was believed this survey might provide a good opportunity to get some feedback on local D.C. political issues.

We took many precautions to try to be as prepared as possible for Election Day. We created a *General Polling Observations* form and an *Opening and Closing Voter Counts* form that we would complete during the polling (Appendices B and C). We pre-determined our sample size (30) and we calculated that we should attempt to contact every 8<sup>th</sup> voter. We were also prepared to take down as much information as we possibly could about non-respondents through our *Exit Poll Non-Response* form (Appendix D). Responsibilities were already assigned to each team member, and we discussed potential problematic scenarios that might occur.

Absentee votes comprised about 9% of the registered voters in our precinct. The Election Day turnout for our precinct was about 54% (DCBOEE, 2008). Although absentee voting was more prevalent than we would have preferred (because we cannot poll absentee voters) we do not believe that this compromised the quality of our results.

## ELECTION DAY

We arrived at our polling location around 4:30pm. One of the first things we noticed was that it did not appear to be very crowded outside. There was no one standing in line to enter the building, voters simply walked right in. There were some people standing about 50 feet away from the polling location, attempting to distribute information supporting their preferred candidate to potential voters passing by. We also noted that outside it was lightly raining, a little chilly, and that the sun was setting.

We then stepped inside to introduce ourselves to the Election Official. Again, we noted that it was not very crowded inside either, which was surprising. The Election Official was very kind, and patiently answered our questions. He told us that there had been a very high turnout early in the morning, and that there was also a pretty good turnout during lunchtime. He said that about 2,500 people had already voted by the time we got there, which he estimated to be about double the turnout from the 2004 election. He had no problem with us exit polling at his location, and said that we could stand relatively close to the door that voters exited out of, as long as we didn't block the exit. We were very thankful that we did not have to stand 50 feet away from the building, as we had expected. In fact, we ended up helping out a lot of confused voters find the entrance to the building, and answered other general questions. We felt that our presence actually helped out the polling location, as we served as "unofficial" election officials.

When we walked over to our designated spot to set up our operations, we noticed that someone was a young woman with a clipboard already there. We introduced ourselves to her and learned that she was also exit polling. Her name was Florena, and she was from

Argentina. She was also a graduate student at GW, and she was majoring in Political Management. She was exit polling for the National Election Pool, which was conducted by Edison/Mitofsky. Florena had been exit polling all day long, and stayed there until about 6:30pm. She confirmed that the morning had been much more crowded than the evening was turning out to be. She mentioned that in the morning there were times she had been a little overwhelmed because she was working by herself. Her comment made us realize how grateful we were to work with a partner. It was very informative for us to watch her as she approached voters and asked them to fill out her exit poll. We certainly learned a lot from her, and she was nice enough to occasionally offer us advice. She was very kind, and I was happy that we got the chance to talk with someone who had been exit polling a little longer and had more experience. Before we parted, we made sure to exchange copies of our exit polls.

Our exit polling was tough at first because we were trying to work in the rain. Juggling umbrellas, clipboards, the ballot box, and other supplies proved difficult. Luckily, the rain let up about a third of the way through our polling and we didn't have to worry about the umbrellas again until the end.

Although the church had only one exit, some voters would mistakenly exit out of the entrance. This proved to be problematic for us. Although we always tried to catch these sneaky voters, we may have missed some since the entrance was a bit further away from us and therefore harder to keep under surveillance. Further complicating matters, election workers often exited through the entrance and it was difficult to distinguish between them and voters.

Once we got ourselves settled, it was relatively easy to poll people. For the most part, people were very willing to take our survey, although we had a couple of people who rushed off mumbling excuses. We originally chose an  $n$  of 8 but later had to revise this because not many people were coming to the polling place. We changed to an  $n$  of 5 at 5:45 after we had finished half of the exit polls, which helped speed things along. One unforeseen complication was people coming up to us and asking us if they could participate in our exit poll. It was difficult because we didn't want to say no but this could also potentially negatively affect the quality of our data. However, we eventually decided to let them fill out our survey.

While one of us was approaching voters to fill out our questionnaire, it was the other person's responsibility to fill out the non-response form and to hold the ballot box. We both tried to keep track of the people exiting the facility, to try to ensure an accurate  $n$ . Also, we were both responsible for noting general observations about the entire polling process, and were constantly aware of the surroundings.

It seemed that a large variety of people came to the polling location that night. Parents brought their kids, some people brought their dogs, and tourists were taking pictures. Everyone seemed to be in a generally good mood. However, there was one man who left and returned back the polling place numerous times. He did not appear to be an election official, but he would say things to us like: "You all are still here?" or "Why are you even doing this?" and "Just come in out of the rain, it's ridiculous to stand out here." It seemed that he didn't

appreciate us being there, but couldn't tell us to leave. After he made it clear that he wasn't interested in our responses, we simply smiled at him and tried to ignore his comments.

It took two and a half hours to complete our exit poll. This was a bit longer than anticipated, and we believe it was due to the very low number of people who voted in the evening. We also think that the rain caused people to be more reluctant to participate, as they didn't want to stand around outside and fill out our form.

### DATA ANALYSIS

After we finished with our survey, we immediately began discussing some reflections about the entire survey experience. We went over our observational forms and made sure that we hadn't left out any important information, and made note of any additional notes while the experience was still fresh in our minds. We discovered that we had done a pretty thorough job completing our observational sheets, which was a concern of ours considering we were furiously taking notes as quickly as possible while a tremendous amount of distractions competed for our attention. We also scanned our completed questionnaires (Appendix E), and further discussed our Non-Response observational form, which has been summarized below:

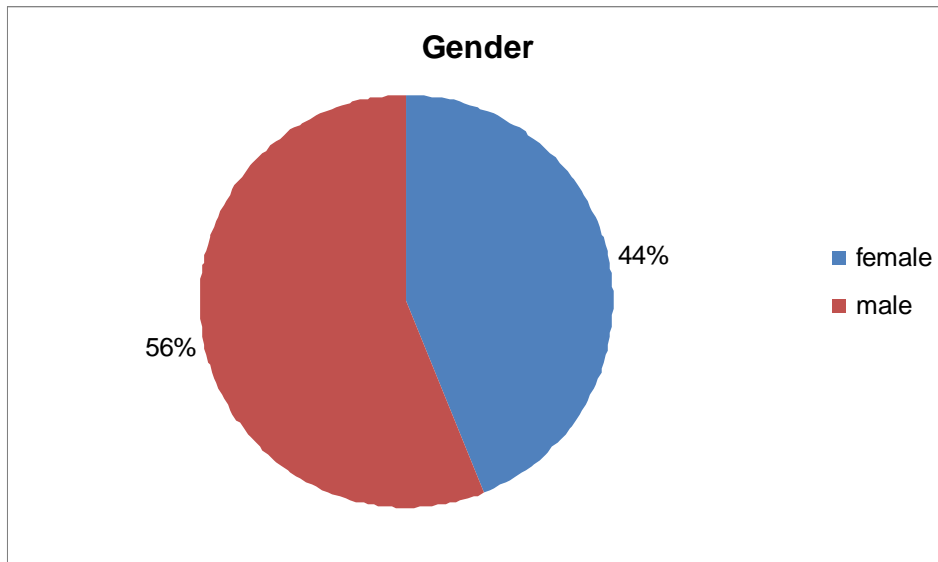
#	Intvwr	Status	Gender	Age	Race/Ethnicity	Notes
1	Kate	Ref Miss NE	M F	18-34 35-54 55+	W B H A DK	
2	Kate	Ref Miss NE	M F	18-34 35-54 55+	W B H A DK	
3	Kate	Ref Miss NE	M F	18-34 35-54 55+	W B H A DK	pregnant
4	Kate	Ref Miss NE	M F	18-34 35-54 55+	W B H A DK	
5	Kate	Ref Miss NE	M F	18-34 35-54 55+	W B H A DK	
6	Tiffany	Ref Miss NE	M F	18-34 35-54 55+	W B H A DK	"still polling?"
7	Tiffany	Ref Miss NE	M F	18-34 35-54 55+	W B H A DK	lady w/ baby
8	Tiffany	Ref Miss NE	M F	18-34 35-54 55+	W B H A DK	rude guy
9	Tiffany	Ref Miss NE	M F	18-34 35-54 55+	W B H A DK	
10	Tiffany	Ref Miss NE	M F	18-34 35-54 55+	W B H A DK	
11	Tiffany	Ref Miss NE	M F	18-34 35-54 55+	W B H A DK	
12	Tiffany	Ref Miss NE	M F	18-34 35-54 55+	W B H A DK	

We can see here that Kate had five voters who chose to not respond, and that Tiffany had seven. It appears that Kate's non-response voters were mostly younger, white men who refused to participate. However, she did also have a woman that was clearly pregnant. It appears that Tiffany's non-response voters were also white men who refused to participate, but were either younger or older (not middle-aged). One possible reason as to why Tiffany had more refusals than Kate did is that Tiffany went second, and it was later in the evening during her polling.

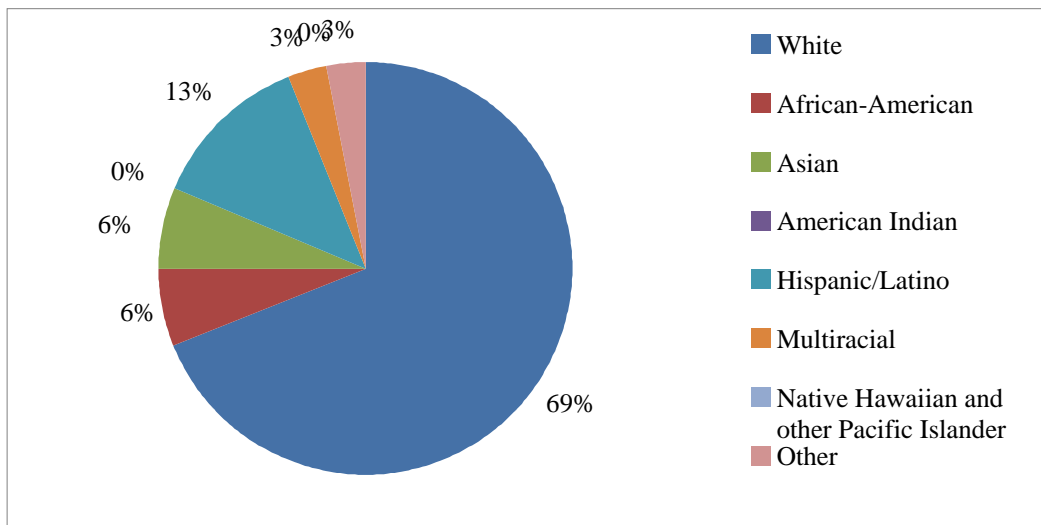
We then analyzed our completed questionnaire forms. We coded the questions (Appendix F), and put all of the responses in an excel spreadsheet (Appendix G). One surprise was that almost all of our respondents completed the entire survey; there were not many unanswered questions. Another realization was that both interviewers had completed 16 surveys each, so we had a total of 32 surveys instead of the 30 minimum requested.

### DISCUSSION OF RESULTS

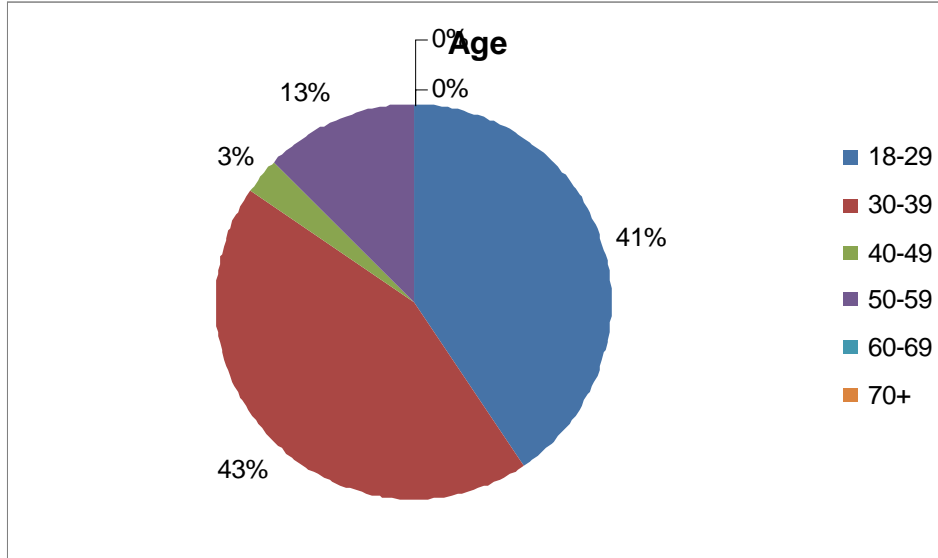
Our sample population was quite interesting. As previously mentioned, we chose to poll every 8<sup>th</sup> person for the first half of the respondents and then the 5<sup>th</sup> person for the second half. The demographics of our respondents are as follows:



The male and female populations were almost evenly represented, we can see that there were slightly more men.

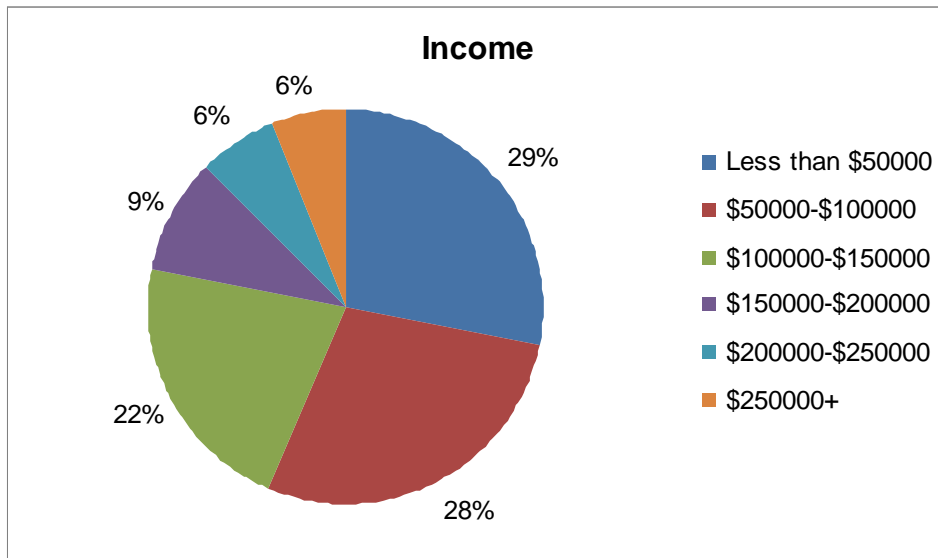


An overwhelming percentage of our population was White, followed by Hispanics, and then African-Americans and Asians, which were evenly represented.

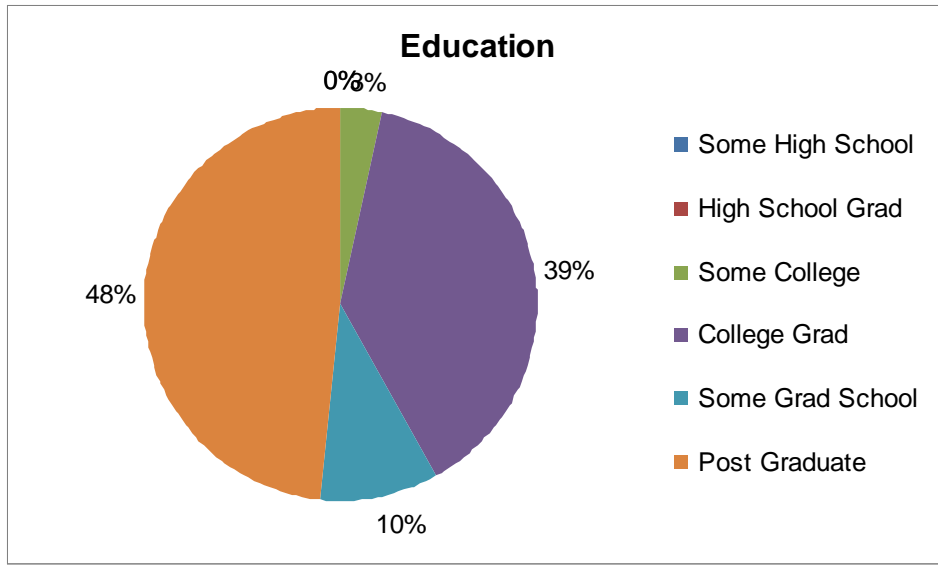


Our sample was very young with 85% between the ages of 18 and 39. This makes sense because younger people are less likely to have children that they need to go home to take care of immediately after work. This may have been why they decided to vote in the evening, which is when we did our polling.

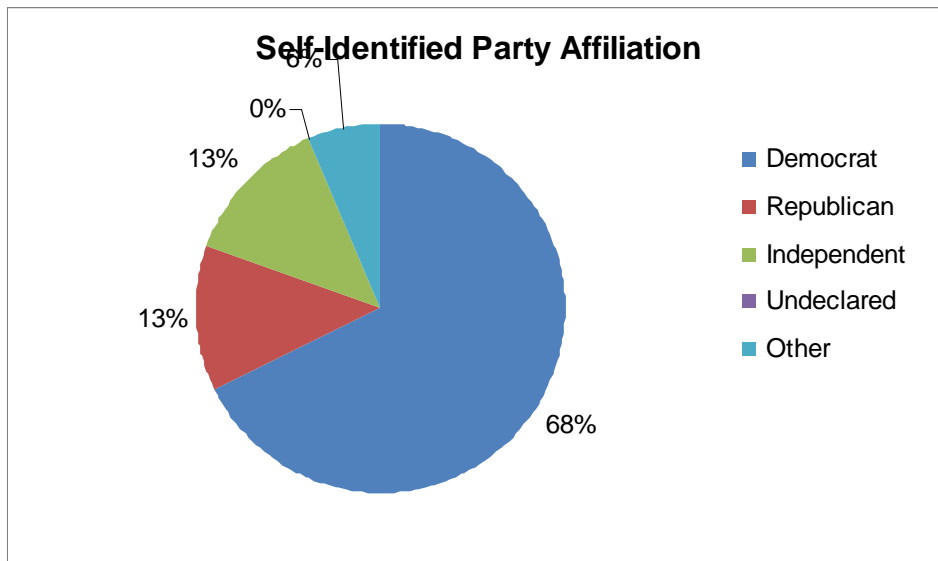
As for yearly household income and education:



We had a respondent for each of the choices in the survey. It makes sense to us that more than 50 percent of our respondents chose one of the two lowest income categories because we had such a young sample. People usually make more money when they are older and have more experience in their profession.

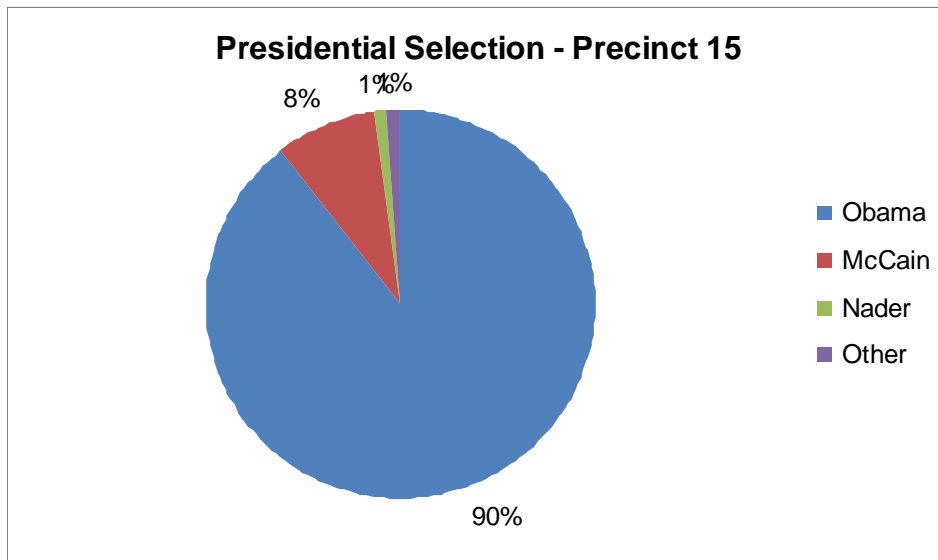
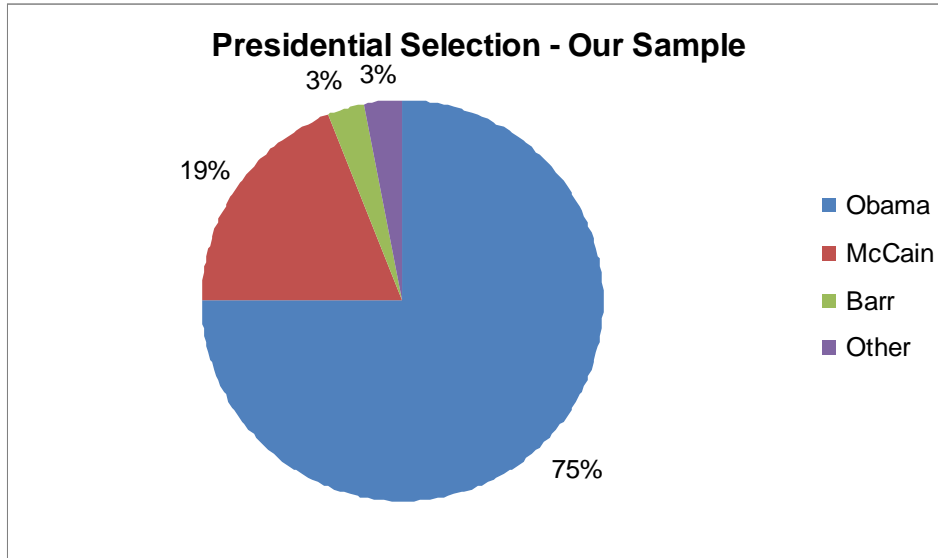


The most interesting observation here is that the majority of our population had at least some post graduate education. This is very important, as we know it is not at all representative of the population at large. Also, our entire sample had at least graduated high school. Now we look at the breakdown of the self-identified party affiliation of our highly educated sample:





Now that we know what our sample looks like, we can take a look at how they voted. Overall, it appears we had a more conservative sample. Below are two pie charts; one is of how our sample voted, and the other is of the certified results for precinct 15.



As seen above, 75 percent of our sample voted for Obama, while 90 percent of Precinct 15 voted for him. 19 percent of our sample voted for McCain, while only eight percent of the population voted for him. We were surprised by these results because our population was young, white people who live in a metropolitan area and that type of people tends to vote democratically.

Now we want to compare our data with other areas in D.C. We have already seen how our data compares with the certified results of Precinct 15. However, this precinct is only one

of the fourteen precincts located in Ward 2 of D.C. We want to see how the average percent of Obama vote in our survey compares to the certified results of average percent of Obama votes in the other 13 precincts in Ward 2. To do this, we performed a Student's t-test, and our results are as follows:

The TTEST Procedure

		Statistics							
		Lower CL		Upper CL		Lower CL		Upper	
CL		Mean	Mean	Mean	Std Dev	Std Dev	Std Dev	Std Err	
	Variable	N	Mean	Mean	Mean	Std Dev	Std Dev	Std Dev	Std Err
	Obama_	14	0.7573	0.8239	0.8905	0.0836	0.1153	0.1857	0.0308

T-Tests				
	Variable	DF	t Value	Pr >  t
	Obama_	13	2.40	0.0322

We know that the null hypothesis of our t-test is that there is no significant difference between the average Obama percentage, and our Obama percentage. However, because our p value is so small ( $p=0.0322$ ), we can reject our null hypothesis with a 95% confidence level. In other words, it appears that our Obama percentage is significantly lower than the average of all of the other Obama percentages in Ward 2. But this is not too surprising because many different precincts comprise Ward 2 and a vast amount of area is geographically covered.

Now, we will take a further in-depth examination of our results. Presented below is a quick look at our responses (broken down by interviewer), including the question (or variable name), the number of responses, the mean response answer, the standard deviation, the minimum and maximum values, and the mode. The first table, or "kateortiff=1" represents Kate as the interviewer, and the second table, or "kateortiff=2" represents Tiffany.

----- kateortiff=1 -----

The MEANS Procedure

Variable	N	Mean	Std Dev	Min	Max	Mode
Sex	16	1.5625000	0.5123475	1.0	2.0	
Race	16	2.4375000	2.2794371	1.0	8.0	
Voted	16	2.1875000	1.3275918	1.0	7.0	

	Decision	16	4.6250000	1.0878113	1.0	5.0	4
	Party	16	1.7500000	1.3904436	1.0	5.0	1
	Age	16	2.0000000	1.2649111	1.0	5.0	2
	Income	16	2.2500000	1.5705625	1.0	5.0	1
	Education	15	4.7333333	1.0327956	3.0	6.0	
4	AA_Influence	16	1.6875000	0.4787136	1.0	2.0	2
	Economy	16	4.6250000	1.0878113	1.0	5.0	5
	National_Securtiy	15	4.3333333	1.2344268	1.0	5.0	5
	Healthcare	16	4.1875000	1.3275918	1.0	5.0	5
	Energy_Policy	16	4.6875000	0.8732125	2.0	5.0	5
	War	16	4.6250000	1.0878113	1.0	5.0	5
	Bush_Admin	16	4.6875000	0.7932003	2.0	5.0	5
	VP_Opinion	16	2.0625000	1.3889444	1.0	5.0	1
	Stronger_Influence	16	1.1250000	0.3415650	1.0	2.0	1
	Equal_Voting_Rights	16	1.1250000	0.5000000	1.0	3.0	1
	Voucher_Program	16	2.3125000	0.9464847	1.0	3.0	3

----- kateortiff=2 -----

The MEANS Procedure

Variable	N	Mean	Std Dev	Min	Max	Mode
Sex	16	1.3125000	0.4787136	1.0	2.0	1
Race	16	1.6875000	1.4008926	1.0	5.0	1
Voted	16	1.8125000	0.5439056	1.0	3.0	2
Decision	16	4.2500000	1.3904436	1.0	5.0	4
Party	15	1.5333333	0.8338094	1.0	3.0	1
Age	16	2.0000000	1.3165612	1.0	5.0	1
Income	16	3.0625000	1.5692355	1.0	6.0	2
Education	16	5.3125000	0.9464847	5.0	6.0	6
AA_Influence	16	1.9375000	0.2500000	1.0	2.0	2
Economy	16	4.8750000	0.5000000	3.0	5.0	5
National_Securtiy	16	4.2500000	1.2382784	1.0	5.0	5
Healthcare	16	4.1250000	1.2041595	2.0	5.0	5
Energy_Policy	16	4.3125000	1.0781929	2.0	5.0	5
War	16	4.7500000	0.6831301	3.0	5.0	5
Bush_Admin	16	4.3750000	1.0246951	2.0	5.0	5
VP_Opinion	16	1.9375000	0.9979145	1.0	4.0	2
Stronger_Influence	16	1.1875000	0.4031129	1.0	2.0	1
Equal_Voting_Rights	16	1.2500000	0.5773503	1.0	3.0	1
Voucher_Program	16	1.9375000	0.9979145	1.0	3.0	1

The first thing that we can see is that the two tables have different values, which indicates that people may have responded to the two interviewers differently. We can also see that all of our variable names look correct and that none have been repeated. Additionally,

our n scores look good; there are only a few values of 15, which indicate that most respondents answered all questions on the survey. Though all the variables are categorical, we examined the mean, standard deviation, and minimum and maximum values in order to ensure the absence of faulty data.

Next, we take a further look at the mode scores, to get a better idea of how people responded to our questions. This will show us the most frequently chosen response for each question. For comparative purposes, we will show them again below, side-by-side:

Kate	Tiff
Mode	Mode
2	1
1	1
2	2
4	4
1	1
2	1
1	2
4	6
2	2
5	5
5	5
5	5
5	5
5	5
5	5
1	2
1	1
1	1
3	1

Here we can see that there appears to be some difference between interviewers, as six questions give different mode values. But we do not see radically different responses. This is understandable due to the fact that we are both white females of similar ages who introduced themselves to the potential respondents similarly. For further analysis, charts of responses for each question broken down by interviewer can be found in Appendix H.

Another interesting point presents itself with answers 10 – 15, where we can see those values are all the 5 (very important) score. Upon reflection, we can recall that those were the scale questions, so we can quickly see that everyone felt very strongly about the issues regarding their choice for President.

Now it is time to take a look at how our survey group responded to the remaining questions. For the data discussed below, we combine the responses of both interviewers.

- While all of the following five factors were ranked as important in the voter’s decision for president, here they are in order from most important to least important:
  1. The Economy
  2. The War
  3. Energy Policy
  4. National Security
  5. Healthcare
- 81 percent of our voters had decided who they were going to vote for prior to a month before the election.
- 77 percent said that having an Africa-American on this ticket did not affect their decision.
- None of those sampled said they “Strongly Approved of” or were “Neutral” to the Bush Administration. Everyone interviewed either said they “Somewhat Approved,” “Somewhat Disapproved” or “Strongly Disapproved” of the current administration, with 72 percent saying they strongly disapproved.

- 87.5 percent of the people polled said that DC should have equal voting rights in the House and the Senate
- We asked if DC should continue the public school tuition voucher program, and more than 50 percent of people said they didn't know. This makes sense if we keep our earlier assumption that many in our sample do not yet have children. Also, this seems to be a topic that many people are just generally unknowledgeable about.

For two of the questions, we broke down the responses by the Presidential Candidate choice. Those results can be found in Appendix I. Below are the findings of these questions:

- When asked for opinions regarding the Vice-Presidential candidate that they just voted for, the McCain/Palin ticket responded the following:
  - 17% said they strongly approved
  - 33% said they somewhat approved
  - 50% said they somewhat disapproved
- When asked the same question, the Obama/Biden ticket responded the following:
  - 50% said they strongly approved
  - 46% said they somewhat approved
  - 4% said they strongly disapproved

This interesting comparison shows us that Democratic voters were more supportive of their ticket's VP pick (Joe Biden), than Republican voters were supportive of their ticket's VP pick (Sarah Palin).

- When asked which was a stronger influence on their selection for President, the McCain/Palin ticket responded the following:
  - 87.5% said that they felt positively about their candidate
  - 12.5% said that they felt negatively about the other candidate(s)
- When asked the same question, the Obama/Biden ticket responded the following:
  - 81% said that they felt positively about their candidate
  - 19% said that they felt negatively about the other candidate(s)

This also proved to be a surprising find, because it was assumed that Obama supporters were more positive about their candidate, and espoused the importance of upholding the positive aspects of their own candidate. However, it appears that the negative feelings towards the Republican ticket were stronger than the negative feelings towards the Democratic ticket.

## **WEIGHTS**

In this paper, we chose to not weight our data. We felt that our sample was too small to choose an effective weighting scheme, and weighting the data would have involved a more

thorough analysis than we could have gone into at this moment. But we would like to talk about some weighting procedures which might prove to be relevant to this data in the future.

The first weighting method, the simple ratio, is very straightforward, as the name suggests. For this ratio, you take the total number of individuals sampled and divide it by the number of respondents. This weight indicates the number of employees in the survey population each respondent represents. However, smaller numbers of respondents tend to experience larger fluctuations in their responses. There are more complex weights available to use as well.

In 1940, the U.S. Census Bureau needed to produce tabulations for the joint distribution of two or more variables in the U.S. population (Battaglia, 2004). The Census turned to Deming and Stephan, and these two came up with a way to adjust sample data with data obtained from other sources (1940). The problem the Census faced was that despite a complete population count, cross-tabulations were only performed on a sample of the entire population for the sake of efficiency. The tabulations from the sample were then used to estimate the results that would have been obtained for the entire population. An adjustment to the sampling weights was performed, so the marginal totals of the adjusted weights on specified characteristics agree with the corresponding totals for the population. This operation is known as raking ratio estimation (Kalton 1983), or sample-balancing (Battaglia, 2004). Weighting is a very important step in data analysis, and is crucial to the accuracy of large-scale surveys.

## **CONCLUDING REMARKS**

The entire survey management process was very enlightening. Many lessons were taught, but we believe the most important is how you handle the situation when you realize that things are simply not going to go as planned. Everything would be much simpler if they did, but the most valuable part of the whole survey implementation was dealing with things you may have never thought would happen. Responding to those situations, whether at the moment or in retrospect, was the most important part of this learning experience.

We were both very grateful that we were able to work with a partner. Especially after we met Florena (our other pollster) and saw how she was struggling with everything herself. She seemed overwhelmed at times, and was very afraid of overlooking important data. We had a clearly defined division of labor in place, and we were also sure to alternate roles halfway, so we could both get the full exit-polling experience. We believe this made it much easier for both of us to get a chance to poll voters, as well as to take observations. Having a partner was also nice because it provided a sense of moral support, or camaraderie. Approaching strangers doesn't seem quite as intimidating when you have someone else standing beside you, holding your umbrella.

We believe that although we tried very hard to carry out this survey flawlessly, there are certainly things we would do differently next time if we had the chance. First, we would determine the busiest voting time of day, and conduct our survey then. Our exit-poll took about two and a half hours, and we believe it would have gone faster if we had more voters

cycling through the our location. Second, we would have had a back-up polling location in mind. The other exit-poller present was friendly, but everyone felt like we were competing for voters to take our surveys. It made for a crowded exit. Third, we would keep a better eye on voters exiting from the entrance. It took us a little while to catch on that some voters were doing this, and we feel it may have affected our  $n$  count. Fourth, we allowed a few voters to take the survey out of turn, just because they came up and asked us if they could participate. We realize that this was a big mistake we allowed, and it was simply because we felt that we couldn't refuse them. Looking back, we wish we had prepared surveys with an identifying mark that we would hand out to voters who volunteered to take the survey out of turn. Then we could have kept their response data, but also separated these respondents from our sample. Finally, we would have liked to have applied some sort of weighting technique to our data here. We felt that the results would be misleading because our sample size was so small. However, we understand the importance of weighting data, and if we had more time we would have liked to reach an acceptable compromise.

Overall, both Kate and Tiffany were glad to have done this project. We were very thankful that this course and this historic election aligned so that we got to take advantage of this amazing opportunity. Although we are both very proud of the work we did, and we learned so much more than we ever thought we would, the entire experience was a very humbling one. There is a greater understanding and appreciation of all of the work involved with implementing a survey. We both came away from the experience with great admiration for all of those involved in the field of survey management, and we look forward to our greater immersion in this field.

## References:

- Battaglia, M. et al (2004). Tips and Tricks for Raking Survey Data (a.k.a. Sample Balancing). *Abt Associates*. Cambridge, MA.
- DC Board of Elections and Ethics (2000). *Final and Complete Election Results for the November 7, 2000 General Election*. Retrieved December, 2008 from [http://www.dcboee.org/election\\_info/election\\_results/elec\\_2000/general\\_elec.asp](http://www.dcboee.org/election_info/election_results/elec_2000/general_elec.asp).
- DC Board of Elections and Ethics (2004). Certified Summary Results. *DC Presidential General 2004 Precinct Report District of Columbia*. pp. 14.
- Deming, WE and Stephan, FF (1940), "On a Least Squares Adjustment of a Sampled Frequency Table When the Expected Marginal Totals are Known." *Annals of Mathematical Statistics*, 11, 427-444.
- Kalton, G. (1983). Compensating for Missing Survey Data. *Survey Research Center*, University of Michigan, Ann Arbor, Michigan.
- Kirkham, Chris (2006, August 14). Life Around Dupont Circle Takes a New Turn. *The Washington Post*. pp. D01.