Team F I.2.
by Nancy Geronian

Project 1:

   A. Interest   10/10

   B. Research Questions 10/10

   C. References 5/5

   D. Sampling Frame 8/8

   E. Target Population 8/8

   F. Mode of Data Collection 5/5

   G. Important Variables 4/4

This is an interesting and doable survey. Be sure to sample enough times of day and times of week (perhaps more than once), in order to answer all of your research questions.

Project 2:

   A. Interest   10/10

   B. Research Questions 10/10

   C. References 5/5

   D. Sampling Frame 8/8

   E. Target Population 8/8

   F. Mode of Data Collection 3/5

   G. Important Variables 4/4

It's very interesting to compare attitudes toward marriage across 3 campuses. Everything looks good here, except that I will want you to focus on a random sample on each campus, rather than sending a blanket email to everyone.

98/100

Proposal 1: Parking Meters at Carnegie Mellon University

Team F: Kaylee Makel, Nancy Geronian, Victor Wilczynski, Jeff Lee, Jungmoon Jang

A. Why is this topic interesting? Why does this survey need to be done now? Is there a client for whom you might do the survey?   10/10

Coin parking meters are becoming a rarity in today's technologically advanced era, so why at Carnegie Mellon has there not been a technological improvement in terms of parking on its campus since CMU is known for being such a big tech hub? In reality, Carnegie Mellon is in working stages of implementing technological improvements in terms of parking on its campus (i.e. Traffic21, ParkPGH). We want to survey on campus parking meters to determine if there is a high frequency in unpaid meters. To add, we would like to see if there are any correlations between other factors, such as owning an expensive car, time of day, etc. This project is very interesting for anyone who uses the parking meters on campus, especially those who have been ticketed for parking violations.

B. What question(s) do you propose to study? Give a brief answer that would have been understandable by a non-statistician.   10/10

We wish to look at different aspects of meter parking at Carnegie Mellon University:
a.   How frequent do people not pay meters
b.   Are certain days/times more likely to have unpaid meters
c.   Are different types (color/brand/model) of cars more likely to be at an unpaid meter
d.   Are cars registered as Pennsylvanian or outside states (by checking license plate) more likely to be at an unpaid meter

In our project we would like to survey the parking meters at different times and on different days and record how frequently they are unpaid and which types of cars are parked there. Depending on what we find out, we would like to see if there should be a push to seek alternative methods to coin operated parking meters.

C. What research has already been done on the topic or on the theoretical construct of central importance to your topic? What could be learned from survey results? Each group member should locate and review 1 relevant piece of research (e.g., article, report, book, etc)   5/5

1) Nancy Geronian: "Local, national companies contracted for parking meter efficiency: Revenue rises in Tampa with new meter technology" from Tampa Bay Business Journal by Mark Holan, Staff Writer on Friday December 31, 2011. Web.

<http://www.bizjournals.com/tampabay/print-edition/2010/12/31/local-national-companies-contracted.html?page=all>.

Summary: The key point of this article states how advancing meter technology will reduce costs, increase revenue, and improve convenience, so in our project we can show how inefficient regular coin parking meters really are.

2) Kaylee Makel: Goals, IndustriesBy ApplicationsBy. "Integrated Parking Management." *Parking Solutions, Multi-Space Parking Meters | Digital Payment Technologies*. 2011. Web. 28 Jan. 2012. <http://www.digitalpaytech.com/parking-solutions/integrated-parking-management.aspx>.

Summary: As technology advances, consumers are now able to pay their parking meters via phone without bearing weather conditions or leaving an office meeting. Parking meters are now being monitored by space sensors using a Smartphone application which yields immediate payment without ever having to visit the pay station. This sort of technological advancement is beneficial for consumers, especially students and professors on a tight schedule.

3) Jeff Lee: "Environmental Indicators for Carnegie Mellon University: Baseline Assessment." 2004. Web. <http://www.cmu.edu/greenpractices/campus-assessment/environmental-indicators/transportation.pdf> .

Summary: CMU wants to reduce the number of vehicles that travel to campus whereas more and more people find the convenience of driving to campus well worth the cost of permit/metered parking and/or the risk of being fined. There are multiple reasons as to why, including poor public transportation, unreliable shuttle service, and close proximity of metered parking.

4) Jung Moon Jang: M. Grynbaum, "The Last Days of the Old Parking Meter." September 18, 2011. <http://www.nytimes.com/2011/09/19/nyregion/uprooting-the-old-familiar-parking-meter.html?pagewanted=all>.

Summary: New York City has replaced all of the parking meters to a solar-powered meter with Wi-Fi and ability to control eight parking spaces at once and to speak seven languages. The new meter system is very convenient because instead of carrying coins in pocket, people can pay with credit card. Also, because the parking meters no longer define each spot, it is expected that the city will have 10 to 15% more parking spaces.

5) Victor Wilczynski: "Advanced Parking Meters Help Increase Asbury Park's Parking Revenue by More Than 60 Percent." November 1, 2011. <http://www.marketwatch.com/story/advanced-

parking-meters-help-increase-asbury-parks-parking-revenue-by-more-than-60-percent-2011-11-01>.

Summary: The installment of 100 multi-space parking pay stations in New Jersey has increased parking revenue over 60 percent. The parking stations allow many different payment options including cash, coins, credit, and debit, so maybe Carnegie Mellon University should make a switch to more efficient methods.

D. What is the sampling frame? What population or populations do you plan to sample from?
The sampling frame: parking meters on Frew, Tech, and Margaret Morrison Street.

8/8

but see note at start of E.

E. What is the target population? To what population(s) do you wish to make inferences?
How does the target population differ from the sampling frame, for your survey?
What possible sampling and non-sampling errors could arise in the survey that you plan to conduct?
Explain each possible error, how it could occur, and how you suggest tackling it.

8/8

The target population is all on campus parking meters, since our target population is not that large in size, we can observe all units in the target population. We are not sampling the drivers of these vehicles, since it is impracticable plan to wait around for the driver to hand them a survey or stick a survey into their windsheild. Reason being, people out of their consciousness will not want to admit that they blantantly did not pay their meter. The sampling frame are the meters on three streets on campus mentioned in part D.

We could see a sampling error in variance, although the three streets are located next to each other, they could be more attractive to different drivers considering the buildings they are closest to. We will handle this by analyzing the data for each street as well as combined to see if there is any significant difference. Although we will be able to survey every meter each time we survey, there may not always be a car parked at it. This could be considered a non-response error. I think that by analyzing data for number of cars parked versus illegally parked cars will still be sufficient to provide data. This information is still valuable because if we notice a certain time where there are very few cars then monitoring habits can be adjusted accordingly by the parking authority.

Another error could be a measurement error, since we do not know if a parking meter is broken or not. If it is broken, the driver is not able to pay and if we cannot identify that the driver has not paid because the meter is broken or for some other reasons, that would be a measurement error.

[margin note, right:] Please consider expanding to all meters on campus.

Also, it is good to begin by thinking of this as a census, but when you consider that you will be checking the meters at several different times of day and times of week, that may look less feasible. It might be the case that you can do as well with a random sample, stratified random sample, etc., of meters.

[margin note, left:] Maybe this is more of a measure of usage/demand (which would also be useful info), than it is non-response (but you are right that it means you will have missing data for type of car, etc.)

F. What is the mode of data collection? How do you plan to carry out the survey (e.g., by telephone, e-mail) and why?

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We would carry out the survey by checking each parking meter at different times and on different days, and recording our observations.

you will need to develop a very specific plan here, covering different times of day and times of week, etc., to address the variables you want to measure

G. What variables do you propose to measure?

Our main focus will be to see if there is an abundance of people parking illegally. However, we will also look at factors such as timing to see if there are certain times of day or certain days of the week that there is a higher frequency of illegal parking. We are going to record what state the car is registered (license plate) to see if there is a difference of out of state versus Pennsylvanian residents. We also are going to make note of variables such as make/model and color to see if there is any connection with these factors and illegal parking.

4/4

Proposal 2: Perspective on Marriage among varying Pittsburgh College Students

Team F: Kaylee Makel, Nancy Geronian, Victor Wilczynski, Jeff Lee, Jungmoon Jang

A. Why is this topic interesting? Why does this survey need to be done now? Is there a client for whom you might do the survey?

A topic on marriage is interesting because it is central to every culture in the world. Marriage is a topic that is currently transforming and becoming redefined. In the mid to late 20th century many women attended college to find a husband who will provide a stable social and economic life. Nowadays, proportionately there are more females than males in college, and many females do not agree with a life of dependency.

10/10

Therefore, living in an area such as Oakland with a large college student population, an overall attitude on marriage would be interesting and feasible to obtain from Carnegie Mellon University, University of Pittsburgh, and Duquesne University students. As a group, we chose these three schools because it would also be interesting to see the correlations and comparisons of college students' mindset on marriage in private, public, and private/Catholic universities.

This survey should be done now because the current generation is proclaimed to be much more liberal in social ideas. We want to see if this is indeed true, or if it varies between different locations, particularly the type of university. We do not currently have a client for whom we are doing the survey for.

B. What question(s) do you propose to study? Give a brief answer that would have been understandable by a non-statistician.

Do the following marriage topics vary among the college students attending **Carnegie Mellon University** (private school), **University of Pittsburgh** (public school), and **Duquesne University** (private/Catholic school)?

10/10

      i. Desire/Necessity to get married in future
      ii. Goal age to get married
      iii. Qualities desired in a future partner
      iv. Live in a single parent household and views of it
      v. Against/For/Indifferent to gay marriage and their sexual orientation

C. What research has already been done on the topic or on the theoretical construct of central importance to your topic? What could be learned from survey results? Each group member should locate and review 1 relevant piece of research (e.g., article, report, book, etc)

5/5

1) Kaylee Makel: Regan, Pamela C. "Chapter 1 Mate Preferences." *The Mating Game A Primer on Love, Sex, and Marriage*. Second ed. SAGE Publications, 2008. SAGE Publications, Inc., 22 Jan.

2008. Web. 29 Jan. 2012.
<https://docs.google.com/viewer?a=v&q=cache:2ztnb8xNBjEJ:www.sagepub.com/upm-data/19613_Chapter_1.pdf&hl=en&gl=us&pid=bl&srcid=ADGEEShLvZB9Y4SbHftqUgsqztcA5G
UbhTB2bdFmN7HRarFxqqcLt9PiO7nVCVXuKdPT09BtqKSPo_bNU9nNbOGuoV-
GvnsRcDlzuHnwi2kARqe-
G0p2q0Z1bbnayA5bR1J2inD0GTX&sig=AHIEtbS491b0LijOHlJZxZiaKrMhQ2JxwA&pli=1>.

Summary: Social psychologist Pamela Regan and her colleague's (Regan, Levin, Sprecher, Christopher, & Cate, 2000) research reveals traits desirable to both men and women when seeking a marriage partner. Both sexes reported desiring a long-term romantic partner who, in order of importance, possessed prosocial personality attributes, characteristics related to intellectual and mental drive, physically appealing attributes, similarity—on demographic characteristics, values and attitudes, and interests and hobbies, as well as characteristics related to social status.

2) Nancy Geronian: "Statistics on College Students view on Marriage" by March 11, 2011 by Ryan Hayes on collegiate-ministry.com. This article takes a piece of a longer article posted on March 9, 2011 by Wendy Wang and Paul Taylor on pewsocialtrends.org. Web. <http://collegiate-ministry.com/_blog/collegiate-ministry-blog/post/Statistics_on_College_Students_view_on_Marriage/>.

Summary: The importance of the survey data is that it showcases how there is a large gap in percentage of college students (18 to 29 year-olds) who married in 2010 in comparison to 1997 (a drop of 7% from 29% to 27%). To add, the survey also showcases how nowadays college students are less likely than adults ages 30 and older to say that a child needs a home with both a father and mother to grow up happily and that single parenthood and unmarried couple parenthood are bad for society.

3) Victor Wilczynski :"Who Marries and When? Age at First Marraige in the United States: 2002" June 2009 Paula Goodwin, Brittany McGill, Anjani Chandra. <http://www.cdc.gov/nchs/data/databriefs/db19.htm>.

Summary: Data and data summaries of the 2002 National Survey of Family Growth includes information such as percentage of married Americans, unmarried Americans, marriage rates, divorce rates, ages of married couples. This data is a good bench mark to compare what is currently happening with what the next generation believes and feels about marraige.

4) Jeff Lee: Mattera, Julianne. "Single Nation: People Waiting Longer to Say 'I Do'--If Ever". Jan 15,2012. Times Herald. <http://www.thetimesherald.com/article/20120115/LIFESTYLE/201150309/Single-nation-People-waiting-longer-say-do-ver?odyssey=tab%7Ctopnews%7Ctext%7CFRONTPAGE>.

Summary: This article provides many statistics in regards to marriage; for instance, today, barely half of all adults in the United States are married. In 1960, 72% of people 18 and older were married. That dropped to 57% in 2000 and 51% today, according to a Pew Research Center analysis of census data.

5) Jungmoon Jang: Lapp, David. "Did I Get Married To Young?". Feb 11, 2010.
<http://online.wsj.com/article/SB10001424052748704107204575039150739864666.html>.

Summary: As many young people decide to get married late thinking how marriage puts limits in their lives, it is in fact more helpful to get married early. The divorce rate of couples who get married between age of 20 to 24 is only 29% compared to 24% for those who get married after 25. Also, it is more likely that once young people get married, they have higher chances of gaining wealth faster than singles and a study from the University of Texas shows that people who married in their early 20s reported to have experienced the happiest marriages.

D. What is the sampling frame? What population or populations do you plan to sample from? (This is the question many tend to miss).

8/8

Our population is college students and our sampling frame will be Carnegie Mellon Students listed in the C-book (Directory), University of Pittsburgh students listed in their directory, and Duquesne University students listed in their directory. We wish to email a surveymonkey survey to the student body, since response rates may be rather low if we choose to pick a certain random sample of the students in the school's directory to send an email to.

I will ask you todo a random sample on each campus. Blanket emails have two problems: (1) irritating to everyon; (2) vulnerable to serious self-selection effects, as we discussed earlier in class.

E. What is the target population? To what population(s) do you wish to make inferences?

8/8

Our target populations is college students who are currently enrolled in one of three main Pittsburgh universities: Carnegie Mellon University, University of Pittsburgh, and Duquesne University. We wish to make inferences to the population of present day college student in their outlook on marriage.

How does the target population differ from the sampling frame, for your survey?

We wish to study college students' opinion on marriage. We chose to study the opinions of the three main college campus students in Pittsburgh (target population) since we hypothesize that we can make correlations about our data the easiest. The sampling frame is chosen from our target population, yet as mentioned in part E we will send the surveymonkey to the entire student population (target population). Our sampling frame will include respondents who will refuse, not be reachable, and incapable as well as include our actual sampled population that are a subset of the target population. However, in our sampling frame we also have respondents who are not eligible (those who have no outlook on marriage).

What possible sampling and non-sampling errors could arise in the survey that you plan to conduct?

Processing Error: Clumping of variables or differences in verbal responses.
Coverage Error: Students who are not listed in the directories.
Sampling variance: Between Schools, we will have difference values on the survey statistic.
Non-response error: Sensitive issues
Adjustment Error: Use of weights on specific responses from different schools

Explain each possible error, how it could occur, and how you suggest tackling it.

Processing Error: To better grasp a respondents view on marriage we will likely be taking some sensitive information. Clumping variables such as parent's income in too large of bins will not be helpful for our data. Also in measuring verbal response, we must take into account certain out of the ordinary responses.

Coverage Errors: Students may have no hope of getting married in the future. However this may be ineffective in carrying out our survey, it will be nice to have a number of respondents who feel this way. It may not give us the data we want but we can use this information in making inferences about present day choices of undergraduate students. Coverage error will also arise if there are students missing or not listed in the schools' directories, but since our sampling frame is so large this error should be very small.

Sampling Variance: The student demographics vary between our three chosen schools. Carnegie Mellon is a private university, ranked in the top 20s nationwide with about 6,100 undergraduates and an average tuition of about $44,000. University of Pittsburgh is a public university ranked top 20 in nation's public university with about 18,000 undergraduates and an average annual tuition of $16,000 (in state) $25,000(out of state), Duquesne is a private, religiously affiliated with the Roman Catholic church with about 5,800 enrolled undergraduates and an average annual tuition of $24,000. We can try to distribute the weights of respondents to equally reflect that of each school when compared side by side.

Nonresponse Errors: Sensitive questions such as sexual orientation or views on sex before marriage will be more prone to no responses. Wording of our questions will alleviate the likelihood of a nonresponce

Adjustment Errors: After we conduct our initial surveys we will see differences in certain respondent's traits, we hypothesize there will be one from different schools. If we decide to apply weights to certain questions we may reduce or increase certain errors.

F. What is the mode of data collection? How do you plan to carry out the survey (e.g., by telephone, e-mail) and why?

We will email out the same surveymonkey to all the college students listed in the directories of Carnegie Mellon University, Duquesne University, and University of Pittsburgh.

3/5

you'll need to do a random sample on each campus, not a blanket email

G. What variables do you propose to measure?

Based on the questions we posed in Part B, our particular variables of interest include:
    i. Age
    ii. Gender
    iii. School enrollment (Major)   **4/4**
    iv. Sexual orientation
    v. Family background (raised by one or two parents)
    vi. Desirable qualities in a mate
    vii. Future plans (expressing a general interest in getting married)
    viii. Previous experience with dating or engagement
    ix. Current relationship status
    x. Religion