

Proposal I – Exploring the Difficulty, Preference, and Improvement in Off-Campus Housing Search for CMU Students

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?

Finding an off-campus housing, a residence with less certainty and safety compared to common homes and school dormitories, is essentially the first independent search for the majority of college students. It is not hard to associate this searching experience with difficulty and frustration. In particular, some Carnegie Mellon University (CMU) students found such experience below satisfactory. Armed merely with such tools as “Craigslist.org”, “Rent.com”, and “CMU Misc. Market”, CMU students can be jeopardized, especially by the lacking of efficiency, safety, and validity of information. This survey is intended to identify the existing difficulty and provide a strong basis for viable resolutions as soon as possible. Moreover, we are interested in the students’ preference in off-campus housing. The result of this survey will be of great interest to many, such as CMU Student Affairs, property managers, college students and college student parents.

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

From a randomized sample of CMU students, we plan on measuring CMU student housing preferences along with the most common difficulties that CMU students currently face in searching for off campus housing. We are looking to gather data from CMU students who have looked for or are currently looking for off campus housing. Therefore, to ensure we obtain the appropriate data, we must first ask if the participant has looked for or is currently searching for off campus housing. From those who have looked for or are currently looking for off campus housing, we wish to ask questions concerning their housing preferences and difficulties in searching for housing. Examples of such questions are as follows:

1. What are the common platforms used in the search of off-campus housing? What is the level of accessibility, accuracy of information, likelihood of success, etc. of such platform? We will assess each category above by having respondents rating the platform (on a scale of 1 to 5) with respect to the category. Also, we will provide examples for the scale so respondents follow a similar scale (possibly using the Anchoring Vignettes method).

2. What is your preference for an off-campus housing? [i.e. Do you prefer an apartment or a house? What is your acceptable distance from your residence to campus (5-minute-walk, 10 minutes by bus, etc.)?]

3. Do you think this searching experience can be improved, if so, in what ways?

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?

Emily: <http://www.ctpost.com/local/article/Students-don-t-often-consider-fire-safety-2755535.php>
(Jan 29, 2012)

This article, “Students Don’t Often Consider Fire Safety”, from the Connecticut Post by Linda Conner Lambeck discusses important features that should be looked for by college students when looking for off-campus housing, including fire safety features. The article is important in

helping to identify college student off-campus preferences and important housing features that should be considered.

Zhi: <http://www.bsudailynews.com/mobile/students-share-stories-advice-about-off-campus-housing-1.2684146>

"Students share stories, advice about off-campus housing" by Victoria Ison is an article supplemented with various interviews. It is helpful in identifying some prominent problems that exist in other student bodies. We can use information above as a guideline for our survey questions.

Terence: <http://www.studentaffairs.duke.edu/communityhousing/resources/neighborhood-reports>

Duke University has conducted housing surveys in the past. The Duke Student Affairs website contains such past surveys, which we can use for reference for our survey.

Jessica:

<http://www.nytimes.com/2012/01/29/realestate/the-hunt-off-campus-with-elbow-room.html?pagewanted=1&r=1>

"Off Campus, with Elbow Room," by Joyce Cohen is an article detailing the personal experience of an NYU law student looking for off-campus housing. The article reveals some options a similar student may use, such as going through a broker to circumvent inaccurate online listings. We also see preferences that may be taken into account, such as personal (bedroom) space, social space, neighbors, and a community that appeals to people in our age range. This article is useful because it gives us a good idea of what the housing search process may be like for our target demographic

Kayco:

<http://oip.georgetown.edu/iss/OFHsurvey.pdf>

This is a survey result done at Georgetown with the international students to learn more about the trend and experiences of finding an off campus housing

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

The sampling frame is CMU students who are in the CMU directory with a CMU email address. Therefore, we plan on sampling from the population of CMU students found in the CMU directory.

E.

•What is the *target population*? To what population(s) do you wish to make inferences? The target population is CMU students who have searched or are searching for off-campus housing. We are looking to make an inference about CMU undergraduate and graduate students. Specifically, we are looking to make an inference about CMU undergraduate and graduate students' housing preferences and difficulties in finding housing.

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

They are different since not everyone in the directory has the search experience for off-campus housing. Also, we cannot find everyone who have searched or are searching for off-campus housing. Therefore, our sampling frame cannot be the same as the target population.

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

Possible errors that could arise in our survey are coverage error, sampling error, measurement error and non-response error.

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

Coverage errors refer to discrepancies that can occur between data on our sampling frame and on the target population. There will be overcoverage error from sampling CMU students in the directory who are not searching for or have not searched for off-campus housing. This can be minimized through targeting the survey towards current/previous off-campus students through advertising and question design.

Measurement error arises from inconsistencies between what the surveyors intend to measure through their questions and the respondents' interpretations of those questions. This is an error that can be reduced by avoiding ambiguously worded or overly complex questions.

We encounter non-response error when our sample population is insufficient and thus likely misrepresents our target population. The design of this survey attempts to reduce non-response error by creating an incentive, in this case a raffle, to participate.

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?

For the early stages of the survey implementation, we focus on ensuring the randomness of the sample as well as a decent response rate. In order to do so, we will follow the steps below. First, we will create a random sample from the CMU directory as our respondents. This will be done by Jon (Zhijun's partner in SURG and a master student in ECE). Then, we will email the randomly selected respondents a notification that he/she is selected to enter the survey. This notification will include a description of the survey, stating its purpose, and appropriate information such as privacy protection and respondents' right to not to respond the survey. When the survey is designed, we will pretest the survey and make amendments. Finally, we will send out the surveys to the random selected respondents and follow up for their response. In addition, we will have tabling and online advertisement for the survey. [Note: As stated in the attached document, part of the SURG grant will be used to purchase prizes in a raffle for participants in the survey.

G. What variables do you propose to measure?

Type of off-campus housing (apartments /houses), characteristics of off-campus housing that students are searching for, and characteristics of current off-campus housing search options.

* Please see attachments for work done by the SURG team so far:

1. Developed the proposal.
2. Created a rough draft of the survey.

Proposal II – Carnegie Mellon University Crime Reports

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?

Recently, frequent crime alerts have brought great attention to the Carnegie Mellon University (CMU) campus, influencing many students to modify their behaviors to ensure safety. Students are taking actions such as going home at an earlier time or reconsidering their residences. Due

to this huge impact, it is interesting and valuable to study the crime alerts of the past two years. By categorizing and analyzing criminal activities on and off CMU's campus, this study would provide valuable information for student safety concerns. Such information provides a basis for precautions and suggestions that would benefit the CMU campus security. This survey will benefit CMU Campus Police, Pittsburgh Police, and also CMU community members (students, faculty, and staff) in order to ensure better protection and safety.

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

Through the use of CMU's campus police crime reports we will be answering the following questions:

1. What types of crimes are most prevalent? What degree of injury was sustained?
2. In which areas, at what times of day and week, and during which month, do crimes occur most frequently? Are certain types of crimes more prevalent depending on the time or month?
3. Are there certain characteristics or features that victims/criminals exhibit? We would like to have some comparisons in demographics such as, gender, age group, and ethnicity. Are certain types of crimes more prevalent amongst victims/criminals of certain demographics?

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)

Emily: <http://www.securityoncampus.org/>

This resource is the official website of the Security On Campus, Inc, a national non-profit organization. The SOC works towards the prevention of college campus crimes through educational awareness and policies. The SOC website is useful in seeing different security measures that are often taken in preventing crimes.

Zhi: <http://www.neighborhoodscout.com/pa/pittsburgh/crime/>

The Neighborhoodscout website is intended to provide an "Enterprise-grade" data for every neighborhood and city in the U.S. Currently, only the general crime rates for Pittsburgh is available without subscription. This report is valuable by raising interesting aspects in data presentation, such as including chances of becoming a victim and crimes per square miles. A potential idea can be having CMU as the origin and observe a correlation between the distance from CMU and the frequency of the crime rates.

Terence: <http://nces.ed.gov/pubs/97402.pdf>
<http://www1.umn.edu/police/aboutus.html#BodyContent>

The website above is the website for the University of Minnesota Police. This survey and study could provide examples of how crime surveys are conducted in other University Campus.

Kayco:

http://www.pittsburghpa.gov/police/files/annual_reports/10_Police_Annual_Report.pdf

This resource is the 2010 annual crime report from City of Pittsburgh Bureau of Police. It gives categorized crime statistics of different neighborhoods in Pittsburgh in 2010. This comprehensive study gives an overview of crimes in the city, which helps to draw comparisons and connections to our study.

Jessica:

Carnegie Mellon University Police Department 2011 Annual Security and Fire Safety Report - <http://www.cmu.edu/police/images/2011asr.pdf>

(Previous reports can be found online at <http://www.cmu.edu/police/annualreports/index.html>)

As the title suggest, this is the yearly crime report for CMU campuses, distributed by the university's police department. This report is highly relevant to our study because it provides us with the official numbers on several types of offenses committed on all CMU campuses since 2008. In addition, the report details the CMU Police Department's policies regarding crimes and general campus safety, their recommendations to students and staff on how to respond to and prevent crimes, and government acts passed relating to campus safety. From this report, we can find trends on the types of crimes reported as well as information on how the data was compiled.

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

Our sampling frame is all crime reports from CMU campus police in the past two years.

E.

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

Target population is all crime reports from CMU campus police in recent two years. We wish to make inferences about the crimes that have been recorded by CMU campus police in the past two years.

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

There is no difference between the target population and the sampling frame for our survey, since we are doing a census.

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

Possible errors could arise in the survey is nonresponse error.

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

Non-sampling Errors :

- Nonresponse Error is an error that occurs when not all sample members are successfully measured in a survey.

In our survey, one possible error that could occur is the nonresponse error of CMU Police leaving out reports that are needed for the survey. This is a relevant error because we have decided that each Police report is a response. Therefore, if the CMU Police leaves out reports that we need for our survey, it will give us a different result from if we had surveyed all the reports.

An additional source of nonresponse error is under-reporting of crimes. There is the possibility that not all crimes have been reported to the CMU Police. In order to prevent this error from occurring, we can make sure that the CMU Police gives us all the reports from the past two years. When we receive the reports we could match it with the record that they have at the station to make sure that we aren't leaving any reports out. Since we are using data from the past two years, we are not able to prevent error from under-reporting of crimes. Therefore, we need to acknowledge that not all crimes are reported, and, as a result, there is potential error.

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 obtain the data straight from the crime reports provided by the CMU campus police. First, we will email the police to gain access to the reports (we have done so already). Then we will divide the reports amongst the members and evaluate the each report. The crime reports from the CMU police is a very accurate source of information.

G. What variables do you propose to measure?

Variables we want to measure are characteristics of suspects/criminals (race, gender, age, height), location/time of crimes, characteristics of victims, levels of injury.