

sampl plan	30/30
sample size	30/30
questions	30/40
Total	100/100

Group C:

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II.4: Sampling Scheme and Question Design

K. The sampling scheme that our group has decided on is a simple random sample without replacement. A simple random sample with replacement would not be useful to us because we do not want to double count people's responses as it would skew our data. This means that once a respondent has been randomly selected to participate in our survey, they will not have a chance of being selected again.

OK

We considered doing a stratified random sample; however, we realized that we would not gain any useful information by stratifying our sample. We first considered stratifying our sample by class year. We then realized that knowing how the freshmen utilize the gym in comparison to the seniors does not benefit our insight of the UC gym facilities. We are more focused on those who actually attend the gym on a regular basis regardless of what year they are at CMU. We then considered stratifying our sample by men and women, but came to the same conclusion in that we want to find out overall problems and satisfaction levels from all CMU undergraduate students who utilize the UC gym.

OK

Therefore, we have concluded that a simple random sample without replacement will be most ideal for our project. Based on what we are striving to find out, we feel that this method will give us the best sample and the most accurate results.

L. Please see page 3.

M. In order to calculate the sample size necessary for our project, we used a formula for sample size calculation (SRS without replacement).

$$n_0 = [z^2_{\alpha/2} (SD)^2] / (ME)^2, \text{ where } n \geq Nn_0 / (N+n_0)$$

$$\begin{aligned} SD &= [p(1-p)]^{1/2} \\ &= [.5(1-.5)]^{1/2} \\ &= .5 \end{aligned}$$

$$\text{Let } ME = .055 \text{ or } 5.5\%$$

$$[(1.96)^2 (.5)^2] / (.055)^2 = 317.4876$$

$$\begin{aligned} n &\geq (N * n_0) / (N + n_0) \\ &\geq (5951 * 317.4876) / (5951 + 317.4876) \\ &\geq 301.407 \end{aligned}$$

Assumptions for sample size calculation:

In order to calculate our standard deviation, we let our p value be .5 because we are estimating p and are not sure what the value is. Thus, we choose .5 because that is the worst-case guess for p.

We are using 5.5% as our margin of error. After analysis, the 5.5% margin of error accounts for any random sampling error that we may encounter through our survey.

Since we expect a response rate of approximately 25%, and we want a sample size of 301 students, we will randomly sample $(301/.25) = 1,204$ undergraduate students at the Carnegie Mellon Pittsburgh campus. By sampling 1,204 students, we will compensate for any non-response that we may encounter through our sampling.

great

Sample Questionnaire

1) Are you a current full time undergraduate student on the Pittsburgh campus?

_____ Yes

_____ No

2) What undergraduate year are you?

_____ Freshman

_____ Sophomore

_____ Junior

_____ Senior

_____ 5th Year Scholar

3) What is your age?

_____ < 18

_____ 18 – 19

_____ 20 – 21

_____ 21 – 22

_____ > 22

4) What academic department are you in? Select all that apply.

_____ H&SS (Humanities and Social Sciences)

_____ MCS (Mellon College of Science)

_____ CIT (Carnegie Institute of Technology)

_____ SCS (School of Computer Science)

_____ CFA (College of Fine Arts)

_____ TSB (Tepper School of Business)

_____ SHS (Science and Humanities Scholar)

_____ Other : Please list _____

5) What is your gender?

_____ Male

_____ Female

6) Where do you live?

_____ On Campus

_____ Off Campus

7) What is your ethnicity?

"check all that apply"

_____ American Indian or Alaskan Native

_____ Hawaiian or Other Pacific Islander

_____ Asian or Asian American

_____ Black or African American

_____ Hispanic or Latino

_____ Non-Hispanic White

_____ Other **(Specify)**

You've worded this question well but I wonder if it is really relevant to your topic. If not, then don't waste respondent's time on it.

(similar reasoning to why you are not stratifying)

8) How would you describe your physical activity level?

_____ Inactive (do not work out at all)

_____ Very Low (work out less than 1 hour per week)

_____ Low (work out 1-2 hours per week)

_____ Moderate (work out 3-5 hours per week)

_____ High (work out 5-7 hours per week)

_____ Very High (work out 7+ hours per week)

9) The following is a list of the UC athletic facilities. Pick all that you have used in the past semester thus far.

- ☐ Weight/Treadmill Rooms
- ☐ Racquetball/Squash Courts
- ☐ Basketball Gymnasium
- ☐ Pool/Diving Board
- ☐ Activities/Dance Room
- ☐ Other. If so, please list _____

10) In the past week, how many times did you use a UC athletic facility (including courts and gyms)?

- ☐ 0 – 1 Time
- ☐ 2 – 4 Times
- ☐ 4 – 6 Times
- ☐ More Than 6 Times

11) Is the response in (10) typical of how many times you use a UC athletic facility on a weekly basis?

- ☐ Yes
- ☐ No

12) The facility(ies) that you use are clean: Pick one.

Strongly Disagree 1 2 3 4 5 Strongly Agree

13) The facility(ies) that you use are usually crowded: Pick one.

Strongly Disagree 1 2 3 4 5 Strongly Agree

14) The equipment available in the facility(ies) that you use are effective and serve their purpose.

Strongly Disagree 1 2 3 4 5 Strongly Agree

15) Equipment is easy to use.

Strongly Disagree 1 2 3 4 5 Strongly Agree

16) Have you ever rented/reserved a specific facility space in the UC?

_____ Yes

_____ No

If yes, how easy was the process?

Easy 1 2 3 4 5 Difficult

17) The check-in process is efficient (wristband/card swipe).

Strongly Disagree 1 2 3 4 5 Strongly Agree

18) Would you make changes to the check-in process?

_____ Yes

_____ No

If yes, please specify

19) Have you used the locker room in the past?

_____ Yes

_____ No

20) The locker room is satisfactory.

Strongly Disagree 1 2 3 4 5 Strongly Agree

You might consider adding something like the following, to capture ideas not addressed in the above questions:

21. List three things that you like about the UC athletic facilities.

22. List three changes that would improve the UC athletic facilities for you.