

## **Clearly define target population**

The target population is the graduate – master and PhD – students of CMU whose area of research or curriculum is relative to engineering, industrial design or business administration.

## **Clearly discuss your sampling plan**

Our sampling frame is students who meet the target population criteria and who have, in addition, the following characteristics (one or more):

- Are graduating within the year
- Have passed their qualification exams
- Have working experience either while attending their current graduate program or before.

In order to obtain a sample from the sampling frame, we are going to request a list of the email addresses of all the currently enrolled graduate students from the HUB. Having this list, we will select randomly a number of email addresses to which we will send invitations for participation to an online survey. The randomization parameter will be the alphanumeric username portion of the email addresses. The survey questions will include an initial part where the student will either position or not him/her-self into the sampling frame by answering a few specific questions.

The number of the invitations that will be sent will be based on an estimation of the percentage of graduate students that fit into our sampling frame related to the whole population of graduate students, so that we will manage to reach the desired sample size.

Regarding the non-response issue, there are two possible ways to deal with it. The first is to estimate a rough non-response rate based on similar surveys and send that much more email invites, and send out reminders, if necessary.

The second approach is to create multiple sample pools, based on the entire pool of email addresses. Each pool will contain the same size of random email addresses and each email address may exist only within one sample pool. Also, each pool will receive a single random numeric identifier. Based on this setup, we will send out invitations to sample pool 1 and allow some predefined time to receive responses. At the end of the period we will check if we have the desired amount of responses. If not, we will initiate a second round of invite sending to sample pool 2. This process will continue until we have reached the desired amount of responses. If we run out of available sample pools without reaching the desired sample size, we will initiate one or more rounds of random follow-ups, based on the time available. If this does not work out, we will work with the available responses, stating the resulting sampling error.