Experimental Software Engineering
(ESE)

Survey: An Empirical Paradigm

Surveys

- Often based on observation *retrospect*: e.g., when a software tool or a technique is used for a while.
- Concerned with collecting *what people already know* (the past history).
- Can be *qualitative*, *quantitative* or a *combination* of qualitative and quantitative data.

Survey Purposes
(1/3)

- Explorative
- Descriptive
- Explanatory

Survey Purposes
(2/3)

- *Explorative*: They do not aim to answer basic questions about a study; instead, they are used as a pre-study to a more enough investigation to assure that all the important issues are taken in consideration.

- *Descriptive*: Descriptive surveys can be conducted to evaluate the distribution of certain characteristics attributes in some population.

Survey Purposes
(3/3)

- *Explanatory*: Explanatory surveys aim at making explanatory claims about the population; for example, when studying how developers use a certain inspection technique.

Data Collection in Surveys

- *Questionnaire*: A form filled with questions.
  - This form could be a paper, electronic form, www or e-mail pages.

- *Interview*: Can be made face to face with persons, it can also be made through the telephone.

Interviews vs. Questionnaires

- *Pros* of interviews

  Compared to questionnaires:

  - An interview method achieves a *higher response rates* than, for example, mail surveys.
  - The interviews generally *decrease the number of "I don't know*" type of answers.
  - It is possible for the interviewer to observe and *ask questions*.

- *Cons* of interviews.

  - Because interviewers are requested to be at least as domain-expert as interviewed, interviews usually are *much more expensive* than questionnaire.

Data Collection in surveys. **Examples**

E1- The Effect of Learning: Using a survey for collecting data to compare the degree of knowledge that students had before / gained after having a software programming course.

E2- Understanding Software Documentations: Using surveys to compare the effect of learning by using two different methods of reading UML artifacts.