



University of Essex

Online

Research Methods and Professional Practice

Seminar 3

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Module Overview

- Unit 1: Introduction to Research Methods. The Scientific Investigation and Ethics in Computing
- Unit 2: Research Questions, the Literature Review and the Research Proposal
- Unit 3: Methodology and Research Methods
- Unit 4: Case Studies, Focus Groups and Observations
- Unit 5: Interviews, Survey Methods, and Questionnaire Design
- Unit 6: Quantitative Methods - Descriptive and Inferential Statistics
- Unit 7: Inferential Statistics and Hypothesis Testing
- Unit 8: Data Analysis and Visualisation
- Unit 9: Validity and Generalisability in Research
- Unit 10: Research Writing
- Unit 11: Going Forward: Professional Development and Your e-Portfolio
- Unit 12: Project Management and Managing Risk

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Unit	Seminar Title
1.	<u>Introduction</u>
3.	<u>Peer Review Activity</u>
4.	<u>Case Study on Privacy</u>
7.	<u>Inferential Statistics Workshop</u>
8.	<u>Workshop on Presenting Results</u>
11.	<u>e-Portfolio Preparation</u>

Deadline details

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Assessment

Assessment	Length/duration	Submission	Weighting
<u>Literature Review</u>	2,000 words	By end of Unit 7	30%
<u>Research Proposal Presentation</u>	15 Minute presentation and transcript	By end of Unit 10	30%
<u>End of Module Assignment: e-Portfolio</u>	2,500 words equivalent including 1,000 word reflective piece	By end of Unit 12	40%

Main e-portfolio and formative activities

Unit(s)	Component	Deadline	e-Portfolio/Formative
1 - 3	Collaborative Discussion 1	End of unit 3	e-Portfolio
1	Reasoning Quiz	End of unit 1	Formative
1	Reflective Activity 1: Ethics in Computing	End of unit 1	e-Portfolio/Formative
2	e-Portfolio Activity: Literature Review and Research Proposal Outlines	End of unit 4	e-Portfolio/Formative
3	e-Portfolio Activity: Research Proposal Review	End of unit 3	e-Portfolio/Formative
3	Seminar 2: Peer Review Activity	End of unit 3	Formative
4	Seminar 3: Case Study on Privacy	End of unit 4	Formative
4	Literature Review Outline Submission	End of unit 4	Formative
5	Reflective Activity 2: Case Study: Inappropriate Use of Surveys	End of unit 5	Formative
5	Wiki Activity: Questionnaires	End of unit 5	Formative
7 - 9	Collaborative Discussion 2: Case Study on Accuracy of Information	End of unit 9	e-Portfolio
7	Seminar 4: Inferential Statistics Workshop and Statistics Worksheet	End of unit 7	Formative/e-Portfolio (worksheets)
8	e-Portfolio Activity: Research Proposal Outline	End of unit 8	e-Portfolio/Formative
8 - 9	Statistical Worksheet Submissions	End of unit 10	e-Portfolio (compulsory)
9	e-Portfolio Activity: Charts Example Worksheet	End of unit 9	e-Portfolio/Formative
11	Seminar 6: e-Portfolio Preparation	End of unit 11	e-Portfolio/Formative
12	Self Test Quiz	End of unit 12	Formative

Unit 4: Case Studies, Focus Groups and Observations

Case Studies

- These involve in-depth research and study of individuals or groups. Case studies lead to a hypothesis and widen a further scope of studying a phenomenon.
- However, case studies should not be used to determine cause and effect as they cannot make accurate predictions (due to possible bias on the researcher's part). The other reason why case studies are not a reliable way of conducting descriptive research is that there could be an atypical respondent in the survey. Describing them leads to weak generalisations and a move away from external validity (see unit 7).

Focus Groups

- Focus groups are also one of the commonly used qualitative research methods used in data collection. In such a method, a group of people is chosen and allowed to express their insights on the topic that is being studied.
- It is important to make sure that when choosing the individuals for a focus group (limited to 6-10 people), they should have a common background, comparable experiences, and are representative of your target market. The main aim of the focus group is to find answers to the "why", "what" and "how" questions, then to reach out to those individuals.
- It is important to realise that some of this data collection methods can be also used for quantitative research.

Quantitative Observation

- This refers to observing numerical values such as weight, volume, shape, usually from a sample that represents the researcher's target market/goal. So, there is an objective collection of data and then statistical and numerical analysis methods are applied to the data to obtain research results. Quantitative observation can be carried via experimentation or surveys (for example, customer satisfaction surveys).

Qualitative Observation

- This refers to the monitoring of characteristics. In this case, the researcher observes the predetermined respondents from a distance. In this data gathering method, the respondents should be in a comfortable environment to help ensure that the characteristics observed are natural and effective. For example, a researcher in a supermarket can, from afar, monitor and track the customers' selection and purchasing trends. This offers a more in-depth insight into the purchasing experience of the customer. In a descriptive research design, the researcher can choose to be either a complete observer, an observer as a participant, a participant as an observer, or a full participant.

Unit 4: Case Studies, Focus Groups and Observations

▪ Unit 4 Seminar - Title: Case Study on Privacy

Please read the case below and answer the questions. You need to determine the ethical issues involved with this case.

The Case

Ricardo works for the records department of his local government as a computer records clerk, where he has access to files of property tax records. For a scientific study, a researcher, Beth, has been granted access to the numerical portion “but not the corresponding names” of some records.

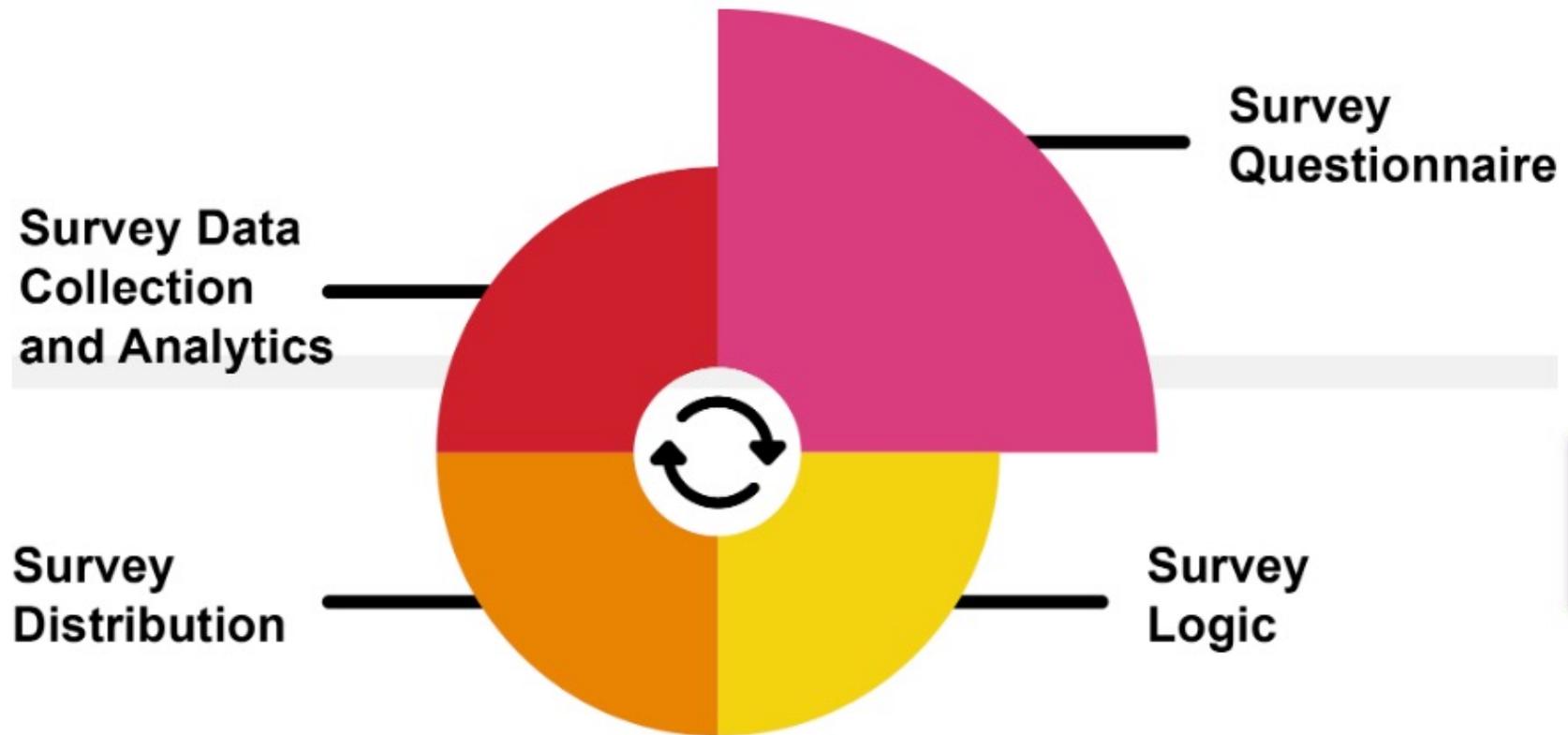
Beth finds some information that she would like to use, but she needs the names and addresses corresponding with certain properties. Beth asks Ricardo to retrieve these names and addresses, so she can contact these people for more information and for permission to do further study.

Now consider, what are the ethical issues involved in deciding which of these options to pursue?

- If Ricardo is not responsible for determining allowable access, should he release the names and addresses?
- Suppose Ricardo were responsible for determining allowable access to the files. What ethical issues would be involved in his deciding whether to grant access to Beth?
- Should Beth be allowed to contact the individuals involved? That is, should the Records department release individuals' names to a researcher? What are the ethical issues for the Records department to consider?
- Suppose Beth contacts the individuals to ask their permission, and one-third of them respond giving permission, one-third respond denying permission, and one-third do not respond. Beth claims that at least one-half of the individuals are needed to make a valid study. What options are available to Beth?

Be prepared to discuss your answers during the seminar session.

Unit 5: Interviews, Survey Methods, and Questionnaire Design



Data protection: Primary Research/Capstone project

Research participants

- Selection criteria – decide on a demographic specific to the research criteria, and remember the participants and research itself must be without bias
- Consider what consent will be required from participants to take part (or their parents/ carers/guardians)
- Will there be any financial incentive or otherwise to take part (which may affect the objectivity of the results)?
- Remember participants will be able to withdraw at any stage
- Will any deception be involved – for example, intentionally to evaluate a reaction or unintentionally, which might affect the results?

Wiki Activity: Questionnaires [feeds into your e portfolio]

Find a questionnaire and critique the design, both the format and the questions used.

Consider areas such as ‘why is this question included?’, ‘is the form of the question appropriate?’ etc. How can you improve the questionnaire?
Put your analysis in the module wiki and comment on others’ analyses.

Unit 4: Reminder Formative Literature Review

Formative Activities | 11 hrs

Participate in the seminar this week.

Remember to record your ideas and feedback in your e-Portfolio.

Submit a brief outline of your literature review this week. You will receive formative feedback on this submission to aid your final submission which is due in Unit 7.

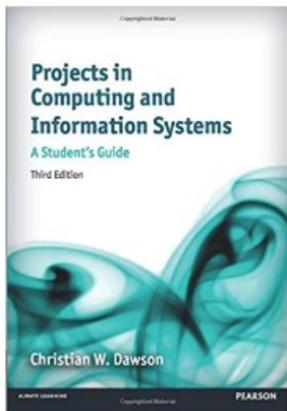


Literature Review Outline

Make a submission

- Please complete the Literature Review on a word document and consider academically appropriate professional presentation when completing this, for example:
- Putting your name, student number, where you are studying, the module you are studying on a title page and the unit you are responding to
- Use Arial font size 12
- Double line spacing
- Margin indentations should be approx. 2.5cm on either side
- Use regular citation
- Apply a list of references at the end of your Literature Review
- Ensure paragraphs are evenly weighted
- Ensure that syntax is academic and concise [use word count wisely]
- Take a critical approach to content [don't be overly descriptive or subjective in your opinion]
- Ensure that all research is paraphrased away from the original source – consider Turnitin content matches

eBooks

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Projects in Computing and Information Systems: A Student's Guide

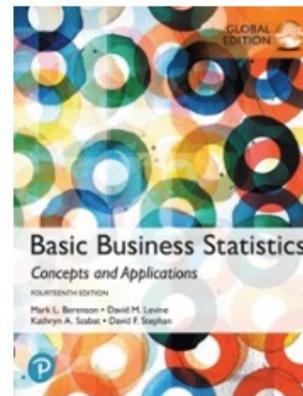
Edition: 3rd

Author(s): Dawson, C.

Date of Publication: 2015

Publisher: Pearson

Place of Publication: Harlow

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Basic Business Statistics: Concepts and Applications

Edition: 14th

Author(s): Berenson, L., Levine, D., Szabat, K. & Stephan, D.F.

Date of Publication: 2020

Publisher: Pearson

Place of Publication: Harlow

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Thank you

Any questions?

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