Procedure	Mode of reasoning	Result	Generalisation
HYPOTHESIS TESTING A theory (hypothesis) is tested in a case, and validated or falsified	Deductive	The establishment of the domain of the theory	From a hypothesis and facts to the validation of a *theory*
THEORY GENERATING A principle (theory) is generated from facts in the case	Inductive	A theory (Conceptualisation)	From facts in a case to *theory*

Table 4.2 Major differences between deductive and inductive approaches to research

Deduction emphasises	Induction emphasises
• scientific principles • moving from theory to data • the need to explain causal relationships between variables • the collection of quantitative data • the application of controls to ensure validity of data • the operationalisation of concepts to ensure clarity of definition • a highly structured approach • researcher independence of what is being researched • the necessity to select samples of sufficient size in order to generalise conclusions	• gaining an understanding of the meanings humans attach to events • a close understanding of the research context • the collection of qualitative data • a more flexible structure to permit changes of research emphasis as the research progresses • a realisation that the researcher is part of the research process • less concern with the need to generalise

Estudo de caso

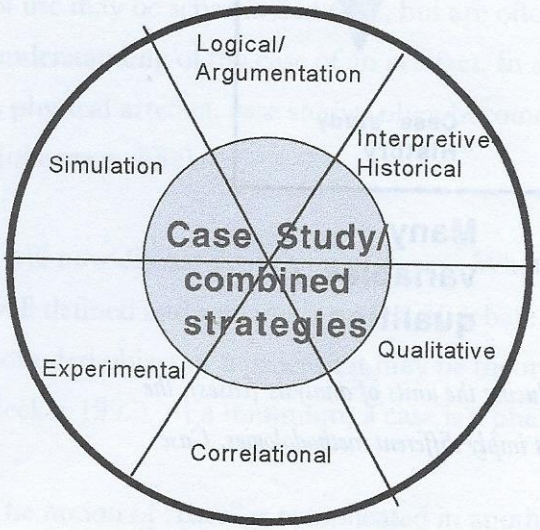

Figure 1. A conceptual framework for research methods.
diagram is simplified by the author.

Box 4.8 Focus on student research

Deductive and inductive research

Sadie decided to conduct a research project on violence at work and its effects on the stress levels of staff. She considered the different ways she would approach the work were she to adopt:

- the deductive approach;
- the inductive approach.

If she decided to adopt a deductive approach to her work, she would have to:

1. start with the hypothesis that staff working with the public are more likely to experience the threat or reality of violence and resultant stress;
2. decide to research a population in which she would have expected to find evidence of violence, for example, a sizeable social security office;
3. administer a questionnaire to a large sample of staff in order to establish the extent of violence (either actually experienced or threatened) and the levels of stress experienced by them;
4. be particularly careful about how she defined violence;
5. standardise the stress responses of the staff, for example, days off sick or sessions with a counsellor.

On the other hand, if she decided to adopt an inductive approach she might have decided to interview some staff who had been subjected to violence at work. She might have been interested in their feelings about the events that they had experienced, how they coped with the problems they experienced, and their views about the possible causes of the violence.

Either approach would have yielded valuable data about this problem (indeed, both may be used in this project, at different stages). Neither approach should be thought of as better than the other. They are better at different things. It depends where her research emphasis lies.

Table 12.5 Statistics to examine relationships, differences and trends by data type: a summary

	Categorical		Numerical	
	Descriptive	**Ranked**	**Continuous**	**Discrete**
To test whether two variables are associated	Chi square (data may need grouping)		Chi square if variable grouped into discrete classes	
	Cramer's V Phi (both variables must be dichotomous)			
To test whether two groups (categories) are different		Kolmogorov-Smirnov (data may need grouping) or Mann-Whitney *U* test	Independent ***t***-test or paired ***t***-test (often used to test for changes over time) or Mann-Whitney *U* test (where data skewed or a small sample)	
To test whether three or more groups (categories) are different			Analysis of variance (ANOVA)	
To assess the strength of relationship between two variables		Spearman's rank correlation coefficient (Spearman's rho) or Kendall's rank order correlation coefficient (Kendall's tau)	Pearson's product moment correlation coefficient (PMCC)	
To assess the strength of a relationship between one dependent and one independent variable			Coefficient of determination (regression coefficient)	
To assess the strength of a relationship between one dependent and two or more independent variables			Coefficient of multiple determination (multiple regression coefficient)	
To predict the value of a dependent variable from one or more independent variables			Regression equation (regression analysis)	
To examine relative change (trend) over time			Index numbers	
To compare relative changes (trends)over time			Index numbers	
To determine the trend over time of a series of data			Time series: moving averages or Regression equation (regression analysis)	

Source: © Mark Saunders, Philip Lewis and Adrian Thornhill 2008.

Box 2.8 Focus on management research

Clarifying what theory is not

Sutton and Staw (1995) make a useful contribution to the clarification of what theory is by defining what it is not. In their view theory is not:

1. *References.* Listing references to existing theories and mentioning the names of such theories may look impressive. But what is required if a piece of writing is to 'contain theory' is that a logical argument to explain the reasons for the described phenomena must be included. The key word here is 'why': why did the things you describe occur? What is the logical explanation?
2. *Data.* In a similar point to the one above, Sutton and Staw argue that data merely describe which empirical patterns were observed: theory explains why these patterns were observed or are expected to be observed. 'The data do not generate theory – only researchers do that' (Sutton and Staw 1995:372).
3. *Lists of variables.* Sutton and Staw argue that a list of variables which constitutes a logical attempt to cover the determinants of a given process or outcome do not comprise a theory. Simply listing variables which may predict an outcome is insufficient: what is required for the presence of theory is an explanation of why predictors are likely to be strong predictors.
4. *Diagrams.* Boxes and arrows can add order to a conception by illustrating patterns and causal relationships but they rarely explain why the relationships have occurred. Indeed, Sutton and Staw (1995:374) note that 'a clearly written argument should preclude the inclusion of the most complicated figures – those more closely resembling a complex wiring diagram than a comprehensible theory'.
5. *Hypotheses or predictions.* Hypotheses can be part of a sound conceptual argument. But they do not contain logical arguments about why empirical relationships are expected to occur.

Sutton and Staw (1995:375) sum up by stating that 'theory is about the connections between phenomena, a story about why events, structure and thoughts occur. Theory emphasises the nature of causal relationships, identifying what comes first as well as the timing of events. Strong theory, in our view, delves into underlying processes so as to understand the systematic reasons for a particular occurrence or non-occurrence'.

Research methods for business students

Mark Sunders
Philip Lewis
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Box 2.2 Checklist

Attributes of a good research topic

Capability: is it feasible?

- ✔ Is the topic something with which you are really fascinated?
- ✔ Do you have, or can you develop within the project time frame, the necessary research skills to undertake the topic?
- ✔ Is the research topic achievable within the available time?
- ✔ Will the project still be current when you finish your project?
- ✔ Is the research topic achievable within the financial resources that are likely to be available?
- ✔ Are you reasonably certain of being able to gain access to data you are likely to require for this topic?

Appropriateness: is it worthwhile?

- ✔ Does the topic fit the specifications and meet the standards set by the examining institution?
- ✔ Does your research topic contain issues that have a clear link to theory?
- ✔ Are you able to state your research question(s) and objectives clearly?
- ✔ Will your proposed research be able to provide fresh insights into this topic?
- ✔ Does your research topic relate clearly to the idea you have been given (perhaps by an organisation)?
- ✔ Are the findings for this research topic likely to be symmetrical: that is, of similar value whatever the outcome?
- ✔ Does the research topic match your career goals?

Table 2.2 Examples of research ideas and their derived focus research questions

Research idea	General focus research questions
Advertising and share prices	How does the running of a TV advertising campaign designed to boost the image of a company affect its share price?
Job recruitment via the Internet	How effective is recruiting for new staff via the Internet in comparison with traditional methods?
The use of aromas as a marketing device	In what ways does the use of specific aromas in supermarkets affect buyer behaviour?
The use of Internet banking	What effect has the growth of Internet banking had upon the uses customers make of branch facilities?

Box 3.2 Checklist

Evaluating the content of your critical literature review

- ✔ Have you ensured that the literature covered relates clearly to your research question and objectives?
- ✔ Have you covered the most relevant and significant theories of recognised experts in the area?
- ✔ Have you covered the most relevant and significant literature or at least a representative sample?
- ✔ Have you included up-to-date literature?
- ✔ Have you referenced all the literature used in the format prescribed in the assessment criteria?

Box 3.3 Checklist

Evaluating whether your literature review is critical

- ✔ Have you shown how your research question relates to previous research reviewed?
- ✔ Have you assessed the strengths and weaknesses of the previous research reviewed?
- ✔ Have you been objective in your discussion and assessment of other people's research?
- ✔ Have you included references to research that is counter to your own opinion?
- ✔ Have you distinguished clearly between facts and opinions?
- ✔ Have you made reasoned judgements about the value and relevance of others' research to your own?
- ✔ Have you justified clearly your own ideas?
- ✔ Have you highlighted those areas where new research (yours!) is needed to provide fresh insights and taken these into account in your arguments? In particular:
  - ✔ where there are inconsistencies in current knowledge and understanding?
  - ✔ where there are omissions or bias in published research?
  - ✔ where research findings need to be tested further?
  - ✔ where evidence is lacking, inconclusive, contradictory or limited?
- ✔ Have you justified your arguments by referencing correctly published research?

Box 3.4 Checklist

Evaluating the structure of your literature review

- ✔ Does your literature review have a clear title which describes the focus of your research rather than just saying 'literature review'?
- ✔ Have you explained precisely how you searched the literature, and the criteria used to select those studies included?
- ✔ Does your review start at a more general level before narrowing down?
- ✔ Is your literature review organised thematically around the ideas contained in the research being reviewed rather than the researchers?
- ✔ Are your arguments coherent and cohesive – do your ideas link in a way that will be logical to your reader?
- ✔ Have you used sub-headings within the literature review to help guide your reader?
- ✔ Does the way you have structured your literature review draw your reader's attention to those issues which are going to be the focus of your research?
- ✔ Does your literature review lead your reader into subsequent sections of your project report?