EDINBURGH BUSINESS SCHOOL

HERIOT-WATT UNIVERSITY

Introduction to Business Research 2

The Intermediate Submission

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Introduction to Business Research 2

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Learning Objectives

By the time the candidate has completed this module, he or she should understand:

* how the IBR2 sub-process model fits into the IBR courses process model;
* what has to be submitted for assessment within the intermediate submission;
* the difference between the literature review and the intermediate submission;
* the aims and objectives of the literature review, basic theory, pilot study and formal theory; and
* the role of the supervisor.

1.1   Introduction

This is the second of the three *Introduction to Business Research* (IBR) courses that make up the first stage of the DBA programme. IBR2 (The Intermediate Submission) is concerned primarily with how to design, conduct and prepare a literature review that demonstrates a thorough and detailed understanding of the relevant knowledge base.

In the EBS DBA programme the literature review is combined with several other sections and submitted as an **intermediate submission** for review by the DBA Research Committee. The intermediate submission is a formal document that usually comprises several draft chapters that will eventually go on to form part of the final thesis: an introduction chapter, a series of literature review chapters, a

literature synthesis chapter, some kind of statement of research aims and objectives and a section on methodology. It may report on initial pilot work where that has been carried out and has influenced changes in the original methodology.

The intermediate submission is considered by the Research Committee, and the candidate can proceed to the main study and writing up of the thesis only when the Committee is convinced of the continued viability of the research.

The distinction between the literature review and the intermediate submission is reiterated and developed in more detail in Section 1.4.

1.2 Ten Questions about the Intermediate Submission

1.2.1 Introduction

A good way to achieve an overview of the intermediate submission is to consider 10 frequently asked questions. The various terms and processes discussed in the questions are all developed in more detail later in this module.

1.2.2 Ten Questions

1.2.2.1 What Is Meant by the 'Literature'?

In the context of the intermediate submission, **literature** refers to the published work in any given subject area. For example, in the area of climate change there is a wide variety of types of published work, ranging from newspaper articles to journal articles and from government research papers to textbooks. There are also thousands of online literature items, from official government websites to wiki articles. The whole body of published work represents the literature on climate change. Any researcher interested in climate change can consult this to learn about the subject.

1.2.2.2 Where Do I Find the Literature?

Literature is all around. Everyday example sources include newspapers, magazines and websites. More detailed and subject-specific literature may be found in public libraries. Higher-standard research literature may be found in university libraries in both hard-copy and electronic formats. As far as DBA research is concerned, the most likely source of literature will probably be the University online library.

1.2.2.3 What Is a Literature Review?

A **literature review** is a critical evaluation (*see* Section 1.2.2.5) of the literature that helps make the argument for the hypotheses or research question to be addressed in the empirical part of the research programme. The candidate reads the literature base, examines the arguments and schools of thought within it and critically evaluates it to produce a balanced review. The aim is to develop a knowledge and understanding of what has been published in the chosen research field and to

identify a gap to investigate. The candidate does not just read the literature; he or she must critically evaluate it.

1.2.2.4   What Is the Point of the Literature Review?

The literature review allows the candidate to develop a knowledge and understanding of the literature base in the chosen research field. It acts as a foundation for the rest of the research. The research proposal will already have demonstrated there is a viable literature base. A candidate at the intermediate submission stage has to reinforce this at thesis level with a thorough and critical development of the literature that makes the argument for the basic theory in some depth, as outlined in Section 1.5.2. The Research Committee is likely to accept an intermediate submission only if it reinforces the original demonstration and gives systematic and comprehensive proof of a viable literature base.

1.2.2.5   How Do I Critically Evaluate the Literature?

The candidate should read about the chosen research field and build up a balanced understanding of the literature. In some cases, researchers may have published articles that contradict each other. There are several schools of thought regarding the issue of climate change, for example. At the simplest level there are two branches: those who believe that human activity is contributing to climate change and those who do not. Each school of thought contains eminent scientists and researchers, but at least one is wrong. Human activity either is or is not contributing to climate change. As a researcher it is the candidate's task to read both sides of the argument and base the research on a balanced and reasonable viewpoint.

The candidate is encouraged to comment on the situation he or she is describing: not only to point out that both schools of thought cannot be right about climate change but to highlight the nature of the disagreement, where possible. In our example, the issue may hinge on the definition of 'climate change' or on the kind of impact of human activity that each school considers to be worthy of notice. The level of critical analysis is higher if the candidate makes this kind of evaluation.

There is more on this important issue in Section 2.2.4.

1.2.2.6   How Do I Structure the Literature Review and Synthesis?

Once the candidate has obtained the various sources of literature and critically evaluated them, he or she must prepare a literature review, which usually comprises a single chapter with major and minor sub-sections or a series of chapters. It is common for the literature review to be structured to reflect the title of the research. For example, if the research is entitled 'The Impact of Power Generation on Climate Change', the candidate might produce three literature review chapters: one on power generation, one on climate change and one that combines and summarises both subject areas. This third, combined chapter is referred to as a **literature synthesis**.

1.2.2.7   How Do I Use the Literature Review in My Empirical Work?

Once the candidate has developed an understanding of the literature base and a clear picture of the knowledge base, he or she then designs the empirical work so that it contributes to that knowledge base by addressing a set of hypotheses or a research question. This could be achieved in several different ways, but the candidate has to know what the knowledge base is before he or she can design research that adds to it.

1.2.2.8   What Is an Intermediate Submission?

Candidates are required to complete an intermediate submission and submit it to the Research Committee for review before moving on to the main study. The intermediate submission comprises the literature review and synthesis and usually also a chapter on the development of the final research aims and objectives and a chapter on methodology.

1.2.2.9   How Is the Intermediate Submission Evaluated?

The Research Committee critically evaluates the intermediate submission and decides whether it is of an acceptable standard to justify progression to the main study. The Committee looks for evidence that all relevant literature has been identified, read, critically reviewed and synthesised to act as a foundation for the development of the basic theory.

The Committee also looks for evidence that the proposed research methodology has been developed directly from the synthesis. The candidate has to use the intermediate submission to demonstrate that the research has been logically and systematically developed from the existing literature base and will contribute directly to the knowledge base.

1.2.2.10   Is the Intermediate Submission Used in the Final Thesis?

The intermediate submission should take the form of fully developed chapters that will eventually make up a large part of the final thesis. The only chapters still to be addressed will be those on the empirical work: the data collection and analysis, results and conclusions, etc. The literature base is, of course, dynamic. The candidate must, therefore, constantly update the intermediate submission, right up to the time that the final thesis is produced.

1.3   The IBR Courses Process Model

The full process model for the research process, as introduced in IBR1, is reproduced in Figure 1.1. The process model shows all the research actions necessary to complete the programme. The actions relevant to IBR2 appear in the centre of the process model.
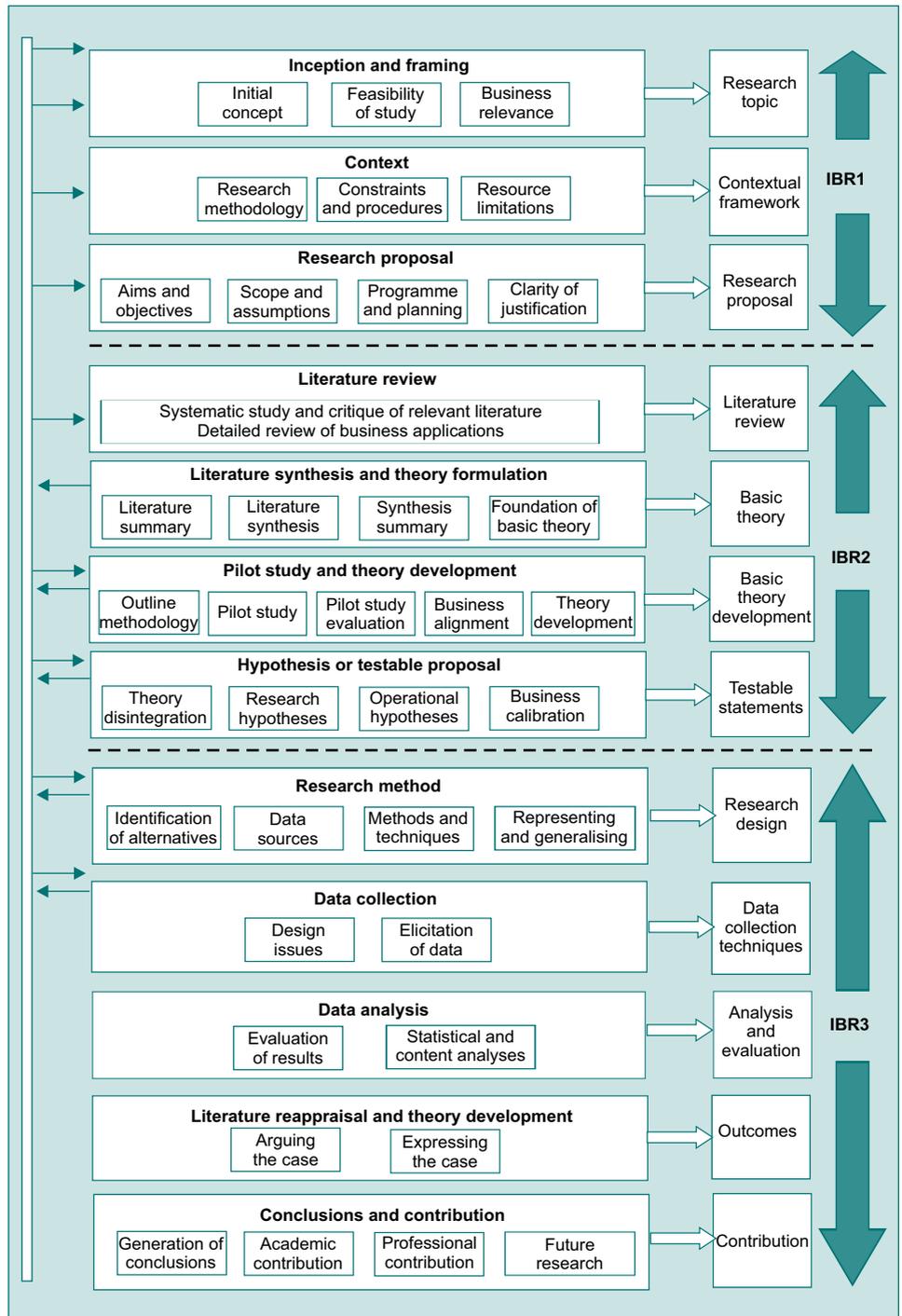
Figure 1.1   The IBR process model

1.3.1   **The IBR2 Sub-Process Model**

The sub-process model relevant to IBR2 is shown in Figure 1.2. In IBR2 the candidate is provided with the information required to produce the intermediate submission.
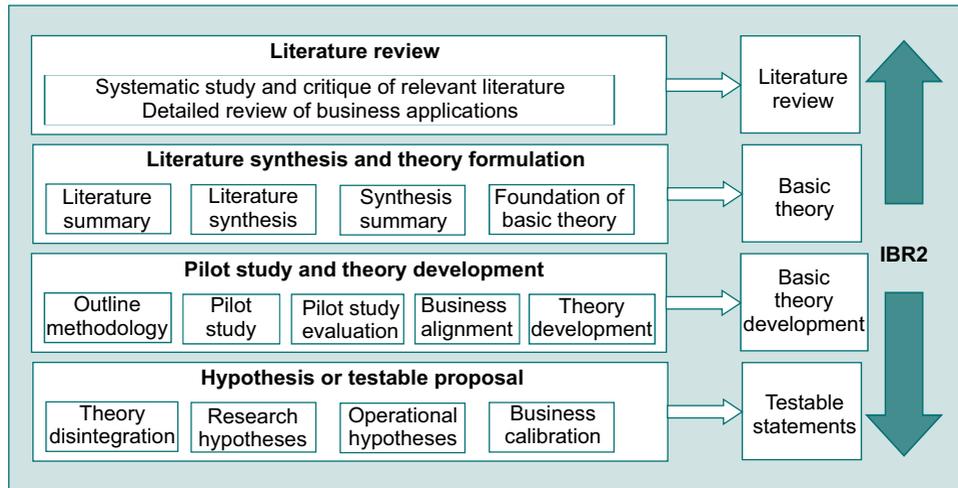
Figure 1.2   The IBR2 sub-process model

1.3.1.1   Literature Review

The **literature review** is the first sub-process. The candidate should thoroughly research the literature relevant to the chosen field, ensuring that all important publications are identified, obtained and critically reviewed. A formal review is built up by summarising the value that each piece has added to the knowledge base. The fact that a piece of work has been published does not necessarily mean it is correct. Publications are made in the research community so that other researchers can read them and discuss the validity, or otherwise, of the findings.

The review will have to be divided into several sub-sections, each examining a part of the existing knowledge base (the concepts, theories and empirical findings that make up a relevant body of knowledge). Each sub-section will require a brief summary of the way it fits into the developing argument. A really complex topic may require the review to be presented in two or more chapters, each with its own sub-sections; this will require an overall literature summary (*see* Section 1.3.1.2).

1.3.1.2   Literature Synthesis and Theory Formulation

The objective here is to generate a testable theory that can be used as the basis for the empirical part of the research programme. The theory must be developed from the literature rather than being, for example, simply an idea that springs into the candidate's mind. It is therefore important that the candidate synthesises the literature during this process. **Synthesis** is a process that combines existing ideas, concepts and findings to create something new. The candidate should address the

material in the **literature (review) summary** and generate a new idea or concept from it. The result of this process is stated in the **synthesis summary**. This is then used for the **foundation of a basic theory** or testable proposal. The result of this sub-process is the **basic theory**.

It should be noted that, in the context of the EBS DBA, the term 'theory' can mean anything from a simple postulation to a proposed direct application, or from an outline testable idea to a more formally stated proposition. It is not necessary to produce a research theory in the more usual sense of the word. The candidate could, for example, work with an existing model and incorporate it into a theory that applies to his or her own company or sector.

At this point it is useful to know that the terms 'model' and 'theory' differ, and to understand *how* they differ. A **model** is a description of the elements that make up a process, and an indication of how they interrelate, stated from a given point of view and for a given purpose. It does not have to be complex. Place an orange on a stick and a pea on a toothpick, move the former round the latter at a slight angle to each other and you have a pre-Copernican model of the solar system. Move the latter round the former and you have the post-Copernican model. This humble model suits the purpose of describing the fundamental nature and scope of Copernicus's contribution.

It is important to understand that a model doesn't have any explanatory status in itself. It is the business of a **theory** to offer an explanation, which it does by incorporating a model but, in addition, by drawing on a set of principles that embody the results of prior research. The longer established the principles, the greater the likelihood of a good explanation.

If we wish to use the orange and pea as part of a theory – perhaps one that explains the seasons – we would need to have at our disposal some previously established principles, concerning light and heat emission and a variety of climatic processes within the earth's atmosphere, on which we would draw when revolving the pea around the orange. A theory need not be very complex to offer an explanation. That depends on the scope of the research topic in question. The term 'theory' does not suggest or imply the formulation of a complex scientific theory such as Einstein's theory of relativity!

Candidates should understand that they are not required to develop any kind of complex new theory from the existing literature base. This can be extremely difficult, even for the most accomplished researcher. As stressed in IBR1, the requirements for the DBA can be met by the discovery of new facts or by the exercise of independent critical power. The latter could involve applying an existing model or theory in a new area or adding to an existing model or theory.

1.3.1.3   Pilot Study and Theory Development

In this sub-process the candidate must demonstrate that the basic theory or testable proposal is, in fact, workable. There are numerous reasons why a theory developed purely from the literature might be suspect. For example, the candidate may have misunderstood the literature or inadvertently omitted to review and allow for a

particularly important piece of recently published research. In any case, it is advisable to make an initial analysis of the theory before committing to the main research methodology. This is normally achieved through the use of a **pilot study**.

The **outline methodology** comprises a statement of the epistemological approach to be adopted, the research design and details of sampling, the research method to be adopted and the techniques to be used (e.g. interviews, questionnaires, investigation of company records and the like), together with a justification for each of these items. It is not a simple description of them but a rationale for them, and should also give an indication of how the results will be used to generate research conclusions. However, this will require that it be thought through carefully: if the candidate is to set up a credible pilot of the main study, he or she needs to have a clear picture of all the empirical work. The outcome at this stage is an outline account that contains sufficient detail so that the Research Committee can see exactly what the candidate intends to do and how it will be done. The level of detail provided must be sufficient to allow the Committee to fully appraise the proposed methodology and then make an informed decision on its viability. It does not have to be complete and finalised in every detail: that will be stated in the full thesis itself.

The research methodology can then be amended in the light of the findings from the pilot study for implementation in the next stage, when the candidate conducts the main study data collection and analysis and writes up the final thesis for examination.

Whether subsequently amended or not, the outline methodology provides a design for the pilot study; this is then executed and the results are evaluated during **pilot study evaluation**. The candidate must then review the pilot study (**business alignment**) to ensure that the basic theory and proposed methodology are sufficiently applied. In **theory development** the theory is modified and/or amended as required. The result of this is the **basic theory development**.

It should be remembered that the literature might already contain the theory that is to be tested or applied or, at least, some of the required principles. The literature review and pilot study might reinforce the theory and provide insights into likely difficulties in applying and testing it.

It is often the case in phenomenological research in which content analysis techniques are to be used that the literature can be a source of the analysis categories themselves; if these have been well developed by other authors so that their reliability can be trusted, a major and time-consuming stage in the candidate's empirical work (that of developing his or her own content analysis categories) can be eliminated. (For more information on content analysis, *see* Section 3.4.)

1.3.1.4   Hypothesis or Testable Proposal

In this sub-process, the theory is broken down, during **theory disintegration**, into its separate components to be developed into a series of testable hypotheses: high-level **research hypotheses** and lower-level **operational hypotheses** in the case of positivist work, and belief statements in the case of phenomenological work.

These are then checked for business alignment and relevance during **business calibration**. The result of this sub-process is a set of **testable statements** that will be addressed by the research during the main study.

1.4 What Has To Be Submitted?

1.4.1 Introduction

This section summarises the components of the intermediate submission, including the literature review. Candidates should note that any submission that fails to address one or more of the components is likely to be rejected by the Research Committee.

1.4.2 The Components of the Intermediate Submission

Before moving on to the data collection and data analysis within the research stage, the candidate must:

- prepare an introduction chapter;
- develop a literature review;
- develop a literature synthesis and formulate a basic theory;
- plan and execute a pilot study, covering design, methodological rationale and results;
- formulate a formal research theory and/or question and/or hypotheses; and
- provide a statement of revised design and procedures for the main study, with methodological justification, if indicated by the pilot.

The introduction chapter covers the aims of the study and provides a rationale for them. The literature review is the candidate's own account of all or most of the published work relevant to his or her own research. It has to be critical, not merely descriptive, and should provide an argument for the basic theory that follows, as introduced in IBR1.

In most cases, there will be a pilot study: a small-scale study during which the theory is tested for suitability and the procedures to be used in the main study trialled. The pilot study has its own research methodology. It is likely to provide a statement and rationale for the main approach, positivist or phenomenological, to be used throughout, and may well provide details of the design, method and procedures to be used in the main study. How much detail to provide before reporting on the pilot and its outcomes, and how much to leave over to precede the main study, depends on the scope of the pilot and the balance between the two. The supervisor's advice is important here.

Wherever the bulk of the material comes, the intermediate submission must contain a detailed outline of how the research will be conducted. This should include a statement of the epistemological approach to be adopted, the research design and details of sampling, the research method to be adopted and the techniques to be used, together with a rationale for each. By the time the reader has

finished the outline methodology section, he or she should have a clear understanding of exactly how the candidate proposes to execute the research. The level of detail should be sufficient for the Research Committee to be able to assess the methodology and make a fully informed judgement on the viability of what is proposed.

Candidates should note that the term 'literature review' means the critical review of the literature relevant to the proposed research. In contrast, 'intermediate submission' means the literature review itself plus:

- the literature synthesis and formulation of a basic theory;
- the pilot study report (where necessary);
- the formulation of a formal research theory and/or question and/or hypotheses; and
- the formulation of an outline research methodology.

The intermediate submission, therefore, is the document submitted to the Research Committee that includes the literature review. This is an important distinction. Candidates should ensure that they understand it fully before proceeding.

1.5   Overview of the Literature Review

1.5.1   Introduction

The literature review is central to the thesis: it acts as the basis for the development of the research methodology and analysis. The Research Committee will consider the literature review in great detail, and it must meet the required standard.

1.5.2   The Literature Review

The basic work flow for the literature review is shown in Figure 1.3. Once the research proposal has been completed, the remainder of the research programme comprises three top-level work breakdown sections that are essential to the successful completion of the research. These are:

- development in depth of the literature review and theory formulation;
- provision of a research design and its methodological justification; and
- data collection, data analysis and the generation of carefully discussed results and conclusions.

In some ways the research methodology acts as a bridge between the literature review and the analytical part of the research. To construct this bridge, the literature review and theory have to be well defined and firmly established; to finalise it, the lessons of the pilot study must be absorbed.
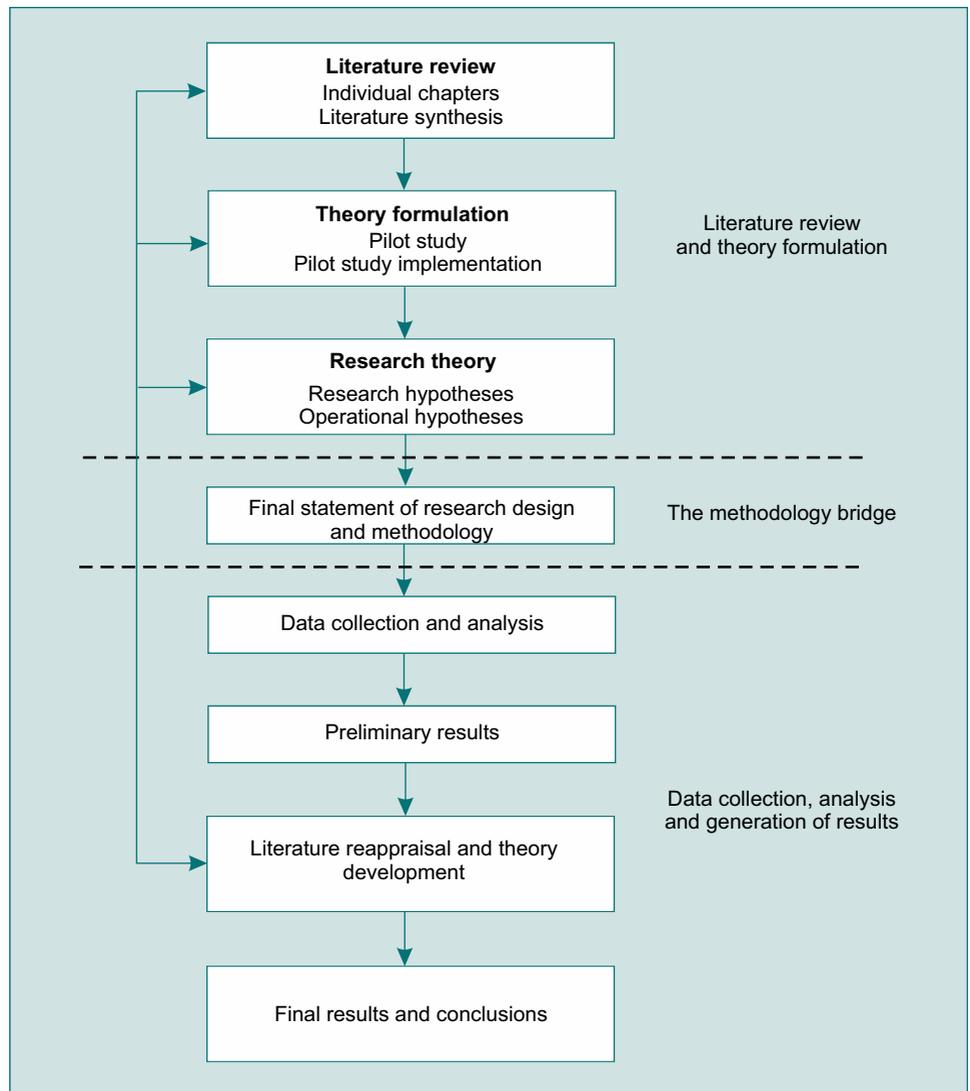
Figure 1.3   Simplified work flow: literature review to conclusions

A number of important objectives of the literature review are considered below.

- **The literature review must demonstrate an adequate literature base.** If there is a great deal of literature in the chosen field, this suggests that it has been thoroughly researched and the knowledge base is extensive. From the candidate's point of view this is positive, because there is a lot of published work on which to base the research and it suggests the field is viable. A large existing literature base could, however, be problematic in that there may be fewer opportunities for developing an original area or for identifying a knowledge gap.

  A small literature base could be good in that the candidate has a 'clean sheet' and can easily identify where an original contribution can be made. It could, however, be problematic in that there is little or no existing work on which the

candidate can found the research. If the candidate chooses a field with little or no published research, this choice has to be considered high risk.

In most cases the viability or otherwise of the existing literature base will have been demonstrated in the research proposal. The full viability of the literature base, however, has to be demonstrated in the literature review.

- **The literature review must be dynamic.** Some candidates make the mistake of thinking of the literature review as a static document. As the research programme progresses, the candidate may choose or be forced to modify the research field and/or scope. This is an explicit and planned component of the grounded theory method, for example (*see* Section 5.5.7 of IBR1), but also applies to the other research methods whether planned for or not. The candidate might, in addition, choose or be forced to modify some of the aims and objectives of the research: if this occurs, he or she will almost certainly be required to carry out additional reading to ensure that the literature review continues to cover the full field.

  Even if no modifications to aims and objectives or scope are required, the candidate should appreciate that the literature itself is dynamic. New publications are constantly being added to the literature base in any particular field. Some of these will address existing research, whereas others will introduce new findings and theories. The candidate must remain fully conversant with the literature right up to the point at which he or she attends the viva voce examination. The literature review is not simply submitted for consideration by the Research Committee and then put aside until the thesis is written. It should be constantly modified and updated throughout the programme. The internal and external examiners have to be satisfied that the literature review submitted as part of the thesis is fully up to date.

- **The literature review must be exhaustive.** The candidate must ensure that the literature review covers all the important research published in the field. The review must reveal the current knowledge on a topic, and its limitations, by evaluating the work of others. The literature not only provides factual information from previous research but will also assist in setting the problem in context. With this knowledge, the candidate will form a reasoned and critical perspective of the work of others in relation to the proposed research. It is clear that all researchers draw upon the theories, methodologies and results of their predecessors, and so it is important to be aware of the present knowledge and the specific developments, disagreements and advances engaging the leading scholars. Reading and critically reviewing the literature can light the spark of creativity in the candidate, leading to new concepts and ideas to be tested.

  A wide range of literature informs business and management research. Apart from specific business disciplines such as finance, marketing or corporate strategy, it is also likely, depending upon the topic chosen, that the candidate may make use of the economics, psychology and sociology literature.

  It may also be worthwhile to read past PhD and DBA theses from different universities. Completed theses can be useful because they contain a large number of references that can be used by the candidate. This applies particularly if

the candidate can identify a good-quality PhD or DBA in an area closely related to his or her own research.

However, the use of theses may also have drawbacks. Doctoral theses are usually highly focused, and it is unlikely that one will be found in exactly the same field as that chosen by the candidate. Additionally, they can be extremely complex, and it may take a considerable amount of time before the candidate can command a sufficient understanding of the work to be able to use it properly. Finally, the primary purposes of DBA and PhD work differ, in the sense that the PhD does not need to make a contribution to professional practice but the DBA does, which could limit the relevance of the knowledge contribution offered by a PhD thesis that initially appears to be appropriate to the candidate's DBA field.

- **The literature review sources must be of an acceptable quality.** In the early stages of the research it is advisable to read widely from textbooks, journals, professional magazines and conference papers. Useful material can also be found on the internet, in newspapers and in trade magazines. These sources are valuable during the preparation of the research proposal, when the candidate is still determining the final research field.

  As a clearly defined research topic becomes evident, the emphasis should be shifted to papers published in peer-reviewed journals and to refereed conference papers and proceedings. Papers that review the literature in the proposed topic are particularly useful, and all valuable references should be noted.

- **The literature review must be multifunctional.** In addition to acting as a foundation for the research, the literature review must also fulfil an evaluative function much later in the research programme. It is advisable to include a literature reappraisal and theory redevelopment section towards the end of the thesis. This is because the candidate's knowledge is expanding all the time. Having conducted the analytical section of the research, the candidate knows more than when he or she finished the initial literature review, which could be anything from six months to years previously. The candidate is now in a better position to read and understand the literature and appreciate fully the work of others.

  In other words, the literature review is used both as the foundation for the research and to evaluate its findings. This is an important distinction: the two roles are entirely different. The research findings may shed new light on the reports of other researchers. In addition, new publications may have appeared since the candidate initiated the literature review. It is important to revisit the updated literature and make use of it to develop the conclusions of the research.

- **The literature review must be used to justify significant aspects of the research.** The literature review is an important justification tool. In the research proposal, when making a case for conducting the research, the candidate has to be able to show that he or she is fully aware of the existing knowledge base in the chosen field and use it to demonstrate that there is a gap in the knowledge base, focusing the research to address the gap.

  Knowledge gaps are attractive to researchers: if there is a gap in the knowledge, the candidate can easily demonstrate a contribution by filling it. This may sound

fairly straightforward, but it is important to consider why such a gap exists. There are plenty of other able doctoral researchers out there, and there may be a good analytical or methodological reason why the gap has not been filled before. In some cases, gaps may exist simply because a field is still in its initial development phase and the sum total of the research carried out is not sufficient to address emergent gaps. In other cases, new research generates new gaps. There is still an underlying danger, however, that a gap is there because other researchers have tried to address it and have been unable to do so satisfactorily. In short, gaps are important to establish but need to be regarded with a critical eye.

- **The literature review must be focused.** Some candidates make the mistake of attempting to pad out the literature review with irrelevant references. Candidates should remember that the external examiner is normally an expert in the relevant field, is usually research active and may have considerable practitioner experience. He or she will almost certainly be familiar with the literature and with most of the references cited in the literature review. External examiners are adept at identifying:
    - superfluous references;
    - contradictory references (without due critique);
    - duplicate references (without due critique);
    - vague references;
    - obvious missing references; and
    - triangulation references that are not properly identified.

Possibly the most common mistake made by candidates new to reviewing the literature is to adopt some of the verbal usages evident in the articles they review, without providing necessary qualifying details. Stating, for example, that 'Smith and Jones (2015) showed that… found that… indicate…' is not helpful unless brief details are provided of *how* the authors made their contribution. Did they simply make an unevidenced assertion, or was it based on careful argument? Was the argument supported by empirical data? Mere name dropping is unacceptable.

- **The literature review must be synthesised.** The literature review normally covers several literature areas. In some cases references may overlap the different areas, whereas in others references may be specific to a given area. In the literature synthesis the candidate brings these together and summarises them collectively to generate a basic theory. This reflects the natural process of problem solving in human cognition. The human brain draws together all known facts about a problem, eliminates unnecessary information and sets the scope of the reasoning process. To solve the problem, the brain considers the pieces of information and attempts to link the areas together in a process of deduction.

Synthesis is the process of deducing new ideas and/or facts from known information. A classic example is that of a detective investigating a serious crime. To work out who committed the crime, the detective first gathers as much information as possible about it. Typical sources include:

- forensic analysis and reports;
- eye-witness testimonies;
- door-to-door enquiries;
- suspect database records;
- photo-fit identification information;
- historical patterns and trends;
- historical information on the victim; and
- CCTV recordings.

Some of the information gathered by these processes may be irrelevant. There could, however, be useful information under some or all of the source headings. The detective goes through the information and eradicates any that is irrelevant. For example, a suspect may come forward with a reliable alibi. Once the alibi has been fully investigated and verified, it may be possible to eliminate that suspect.

When the detective has been able to eliminate all known irrelevant information, he or she then considers the remaining material in detail and attempts to synthesise it. In effect, he or she attempts to generate new information (knowledge) by bringing together a large amount of existing information (knowledge). The detective might combine, for example, information from CCTV recordings and eye-witness accounts. These two sources are entirely different (unless the eye witness is also the CCTV operator), and the information provided by each is generated separately. If the CCTV and eye-witness accounts agree, there is evidence that the eye-witness account is accurate, and the detective may decide to study it in more detail, perhaps by conducting further interviews with the witness.

By synthesising the available sources of information, the detective is able to utilise the information to produce new ideas. These can be developed into investigation theories to be researched in more detail. For example, by comparing CCTV and eye-witness accounts, the detective might decide that suspect B is the prime suspect and should be questioned in more detail. The detective may then compare the detailed statement made by suspect B with other information from the investigation *that was not apparently relevant earlier in the investigation*. The detective thereby develops a theory that suspect B is the offender and again reviews all information. The process is refined until a sufficient case has been developed for the suspect to be charged with the crime.

The candidate follows the same process to develop a basic theory from the literature. The synthesis is the process by which the various literature review subsections are drawn together as the basis for the theory, shown in Figure 1.4.
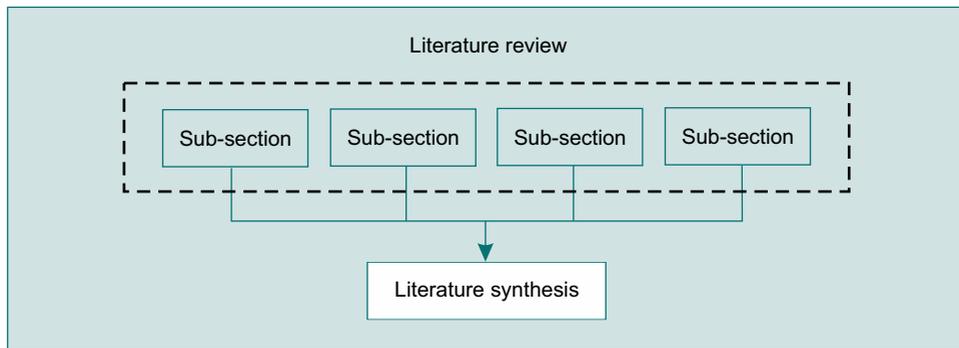
Figure 1.4   **The development of the literature synthesis**

1.6   Overview of the Basic Theory

1.6.1   Introduction

This section explains how to establish the basic theory and illustrates its importance in the development of the formal research theory and/or question and/or hypotheses. In many cases the basic theory is different from the formal theory used to design the main research.

It should be remembered that in this context 'theory' does not imply a complex scientific theory involving many interrelated principles that will form the basis of a new school of scientific thought. Rather, it could mean any of the following.

- A detailed investigation of a data set to produce an interpretation in the form of a simple model of the relationships involved.
- An evaluation of if/how well an existing theory or model can be applied to a new case study.
- The modification of an existing model or theory for a new use or application.
- An entirely original speculative thought.
- A postulation to explain a set of observed phenomena.
- A set of interrelated hypotheses.

1.6.2   The Basic Theory

The basic theory is a direct product of the literature synthesis (as shown in Figure 1.5) and represents the candidate's initial thinking, based on what has already been published. The theory should address the existing literature and be correctly positioned, where appropriate, in relation to any obvious gaps or overlaps in the knowledge base.
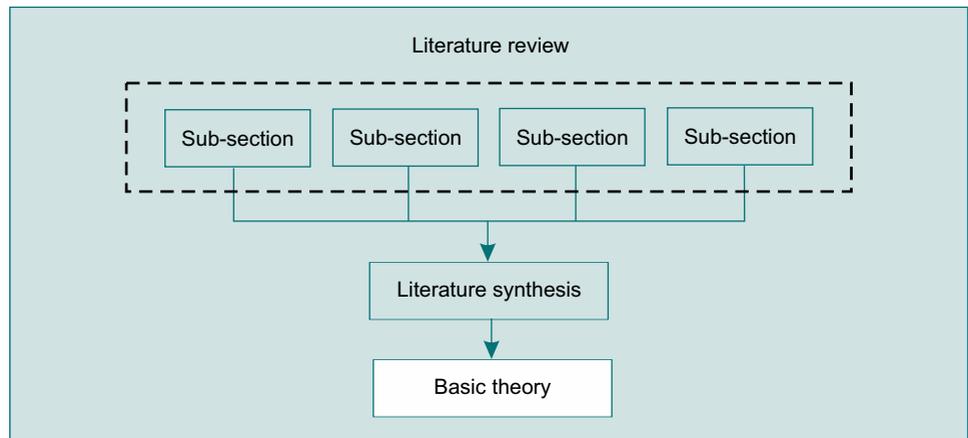
Figure 1.5 The development of the basic theory

The basic theory should:

- be consistent with the research topic and the field on which it draws;
- be developed directly from the literature synthesis;
- demonstrate the potential for development at doctorate level;
- be compatible with the available data sample;
- go beyond the literature by positing testable hypotheses or belief statements; and
- have the potential to contribute to the knowledge base.

The basic theory is not the same as the formal theory. It evolves into the formal theory as it is evaluated, usually by carrying out a pilot study.

Consider two examples of simple basic theories.

> There is a positive functional relationship between the use of collaborative progress planning tools and the degree of collaboration in construction projects in Germany.

> There are six primary drivers that dominate the transition process for organisations that must meet SOA-equivalent transparency compliance in France.

In the first example the theory is centred on showing the relationship between the two stated variables. In the second the theory is based on an evaluation of the six primary drivers that determine the transition process for organisations that are trying to meet the equivalent requirements of the Sarbanes–Oxley Act.

In both cases the theory is stated in the form of a hypothesis that expresses the relationships the candidate is trying to establish. It is important to stress again that the theory may already exist in the literature and the candidate may simply be seeking to apply it to a new data set (such as his or her own country, sector or company). In other words, the theory does not have to be developed from scratch: it is acceptable to apply an existing theory, provided this contributes to the knowledge base in some way.

In some cases the basic theory may prove to be unsuitable for development into the formal theory. Typical reasons include the following.

- **The candidate may have made incorrect assumptions.** When interpreting the literature, the candidate is required to make certain assumptions. For example, a new theory in the literature may appear to be sound because it has not been falsified. The candidate might choose to develop the research based on this theory only to find, perhaps three months later, that new research has acted to falsify it. This type of occurrence can be frustrating for candidates and can result in abortive work.

  It should be stressed that direct falsification is easier to achieve in the natural sciences than in the social sciences. In most social science applications it is unlikely that a researcher would be able to prove falsification. In fact, the discovery of any new facts or associations that suggest falsification might themselves act as the basis for encouraging the research. The research could be adapted to focus on the acceptance or rejection of the suggested falsification. In other words the apparent falsification could actually encourage the research and provide a basis for continuing with it rather than acting to discourage or invalidate it.

- **The basic theory may prove to be a dead end.** In some cases the literature can suggest a promising research field. However, when the candidate attempts to develop the field it can transpire that it is unsuitable. The basic theory may prove to be a paradox, or there may be insufficient sources to provide enough data for collection and analysis.

- **Another researcher may publish.** This is potentially frustrating. The candidate may formulate an interesting basic theory and progress down the line of developing it into a formal theory only to learn that another researcher has since published results in exactly the same field. It can be difficult to identify other researchers active in the same field unless they publish. Most experienced researchers publish on a regular basis in their known areas of specific interest. There is, however, always a possibility that the candidate will be taken by surprise.

  It is important to stress that publication by another researcher does not necessarily render the research focus invalid: corroboration of a new theory or finding can act as a contribution to the knowledge base in its own right. In other cases, for example where the research is based on the application of an existing theory to a new data set, publication by another researcher may simply add to the knowledge base used for the research. In other words, it may strengthen the existing theory and, by default, enhance the research.

- **The proposed method may be unsuitable.** In many cases the candidate will be able to use an existing method and some associated techniques 'off the shelf'. Provided the methodology that underlies the method and techniques is compatible with the proposed research design, there should be no problem. Alternatively, the candidate might adapt what is available for use in this particular piece of research. The problem arises if there are no existing compatible approaches and the candidate is faced with the prospect of designing a new approach for this specific application. In such cases the basic theory may be

acceptable, but there could be problems developing a suitable set of procedures. The supervisor may point out weaknesses, perhaps in terms of reliability and/or validity of a proposed technique or perhaps in the applicability of the method proposed by the candidate, given the epistemological approach adopted. The candidate is then faced with the high-risk option of designing an entirely new research approach with little or no literature base, or with the lower-risk option of redefining the basic theory.

- **The basic theory may be unsustainable.** The basic theory may be acceptable in itself, but the candidate or supervisor may realise that it is unsustainable because, for example, it cannot act as the basis for a research programme that will generate results that are sufficiently applied or significant. In such cases the supervisor may advise modifying the basic theory.

- **The basic theory may be misaligned.** It is common for candidates to develop a research field, conduct a wide-ranging literature review and then formulate a basic theory that includes elements that fall outside the scope of the research. This problem often arises if the candidate has read extensively along the borders of the research field and has become distracted by interesting results that are only partially relevant. The research field can be changed, although this may involve the development of new research aims and objectives and could result in abortive work.

- **The basic theory may not support a formal research theory or question.** It will be recalled from IBR1 that the formal theory should address a set of clear aims and objectives. These are developed directly from the research question, which in turn evolves from the basic theory. The basic theory developed from the literature could be as shown below.

> Organisations should try to engineer the greatest possible degree of strategic alignment when considering potential target organisations for acquisition.

The candidate may carry out a pilot study, the results of which will be integrated with the literature synthesis. This process allows the candidate to generate a formal theory, provided the basic theory is sufficiently reliable and robust. The formal theory derived from the basic theory might be as shown below.

> Organisations that make acquisitions on the basis of increasing their degree of strategic alignment increase their likelihood of achieving long-term strategic acquisition success.

In this case the formal theory has evolved from the basic theory: it has become more focused. The focusing is enabled by the results of the pilot study.

1.7   Overview of the Pilot Study

1.7.1   Introduction

On the face of it, a pilot study is not always necessary, for example if the candidate is using an established methodology on a fully reliable sample. However, in all cases, the procedural arrangements for the main study should be addressed, and the candidate should seek advice from the supervisor before making a decision on the scale and objectives of the pilot study.

Possibly, all that is needed is a run-through with a few respondents characteristic of the sample to be used in the main study, to check the procedures, timings and practical arrangements the candidate has planned. If he or she intends to conduct 12 half-hour semi-structured interviews per day over a week to achieve the intended coverage of a 60-person sample, a pilot with a handful of respondents may reveal that:

- the interviews are taking closer to an hour;
- 12 interviews per day is exhausting, unless the interview is structured around a fairly trivial, market-research-style checklist;
- insufficient time has been allowed for travelling between interviews; and
- additional resources such as flashcards, audio recorders or an assistant, perhaps where the interviews are using a focus group technique, are required.

1.7.2   The Pilot Study

The pilot study is a self-contained and small-scale piece of research designed to assess the basic theory and the proposed methodology, and to evaluate the practicalities of the main study. It is advisable to adopt a similar research method for the pilot and the main study. The more similar the research methods and sample characteristics, the greater the extent to which the pilot and main study findings will be compatible and directly comparable.

Pilot studies can be carried out in various ways. The pilot could be a longitudinal study in which the sample is analysed over several weeks or months, or it could comprise one or more short-term cross-sectional studies. It may be the case that the pilot study is executed when the literature review is largely complete, or it could be designed and executed as the literature review progresses; the latter is particularly likely if the researcher is learning a new technique and needs to provide a literature review on the theory on which the technique is based. Invariably, the pilot study, if required, has to be completed before the formal theory can be developed.

The intermediate submission and the final thesis should contain a pilot study report. The size of the report will depend on the scale and scope of the study and on the range of issues addressed by it. The position of the pilot study in relation to the literature review and literature synthesis is shown in Figure 1.6.
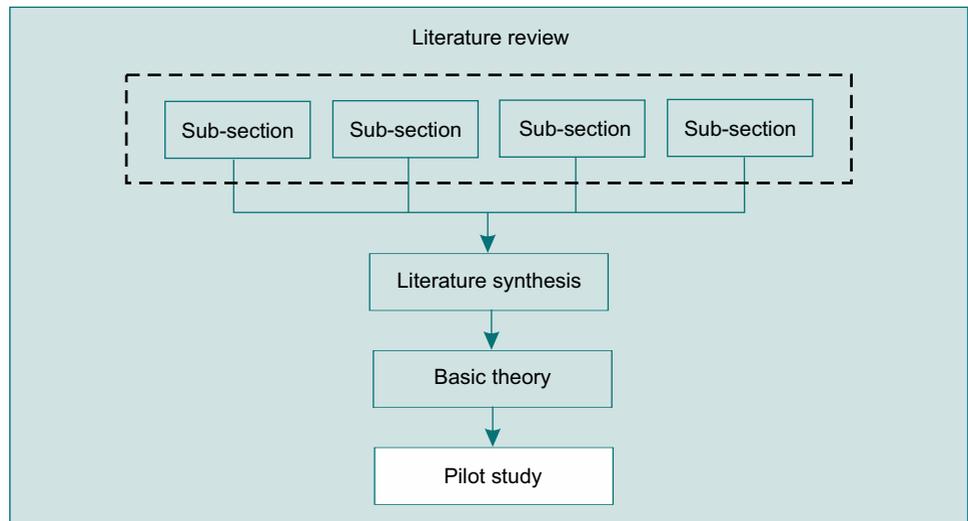
Figure 1.6   The development of the pilot study

A typical pilot study report might contain the following sections.

- **Introduction.** This highlights the aims and objectives of the study and establishes it in the context of the main study. The most obvious reason for a pilot study is to test the basic theory using data generated in an applied environment.

- **Respondent details.** This provides details on the respondents. In the case of a single-sample pilot, typical information would include the company size, number of employees, core business activities, degree of strategic alignment and so on.

- **Methodology.** The research methodology in the pilot study is usually related to the methodology to be used in the main study. In many cases the pilot study allows both the basic theory and the proposed main study methodology to be assessed simultaneously. The choice of approach, method and techniques is usually supported by reference to researchers who have carried out compatible research in related areas. In some cases the components used for the pilot study are adapted as the pilot study progresses and become the foundation for the main study; methodological justification will be required for the new components.

- **Results.** The results generated by the pilot study are presented in a logical sequence, reflecting the order and delivery of the literature synthesis.

- **Pilot study summary.** The summary presents the main conclusions generated by the pilot study.

- **Integration of the literature synthesis and pilot study results.** In many ways this is the most important part of the pilot study report. There should be a clear distinction between the outcomes generated by the literature synthesis and those generated by the pilot study. In some cases these two sets of results will agree, and in others they will differ.

- **Section summary.** The section summary highlights the main points to have emerged from the integration of the literature synthesis and the pilot study re-

sults. This is important because it establishes the framework for the development of the formal research theory and/or question and/or hypotheses.

The intermediate submission will therefore contain two levels of synthesis. These are the synthesis of the literature and the integration of the pilot study results and the literature synthesis. Both levels of synthesis are required for the development of a formal theory. This double-synthesis approach generates a larger number of potential research concepts and factors for consideration than a single-synthesis approach. The concept is shown diagrammatically in Figure 1.7.
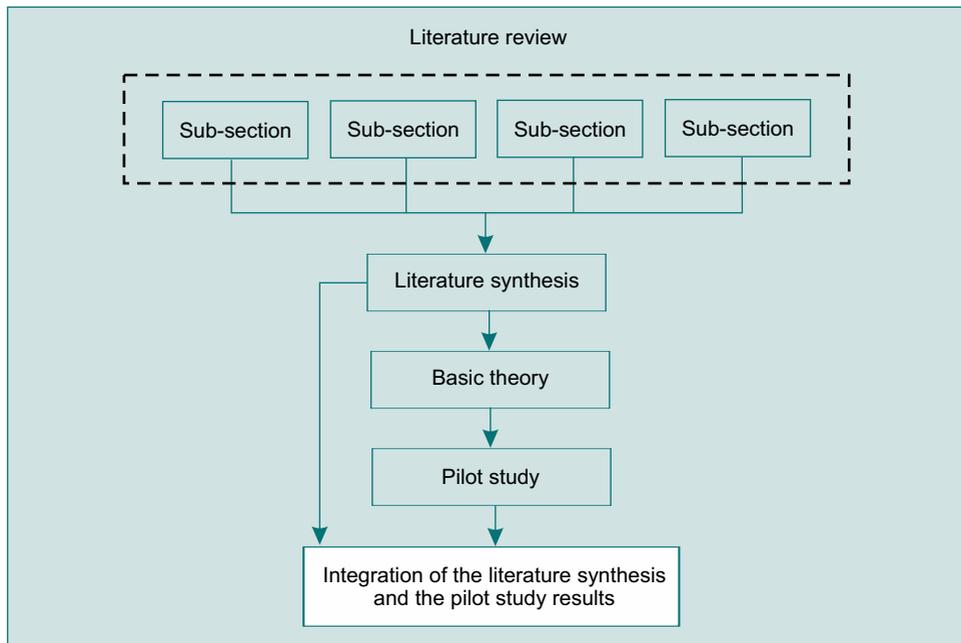
Figure 1.7   The integration of the literature synthesis and the pilot study results

In general terms, the pilot study should:

- be compatible with the basic theory;
- generate results that can be used to assess and evaluate the basic theory;
- prepare the ground for the design of the main study and its methodology;
- generate results that can be used to test the procedures involved;
- where relevant, use a sample sufficiently large for the results to be statistically meaningful;
- where relevant, use respondents who represent the kinds of organisation to be used in the main study; and
- generate results that are both valid and reliable.

1.8 Overview of the Formal Theory

1.8.1 Introduction

This section demonstrates the way in which the pilot study and its results shape the basic theory into the formal theory. The formalisation is quite strict in the case of positivist research, leading to hypotheses whose testability has been established and level of detail increased. It is less strict in the case of a phenomenological approach; nevertheless, the outcome is testable belief statements expressed as research questions that give precision to the original statement of issues to be investigated.

1.8.2 The Formal Theory

The formal theory is developed from the integration of the literature synthesis and the pilot study results, as shown in Figure 1.8. The basic theory is modified as necessary and put forward as the formal theory, which acts as the basis for the research question and research and operational hypotheses.
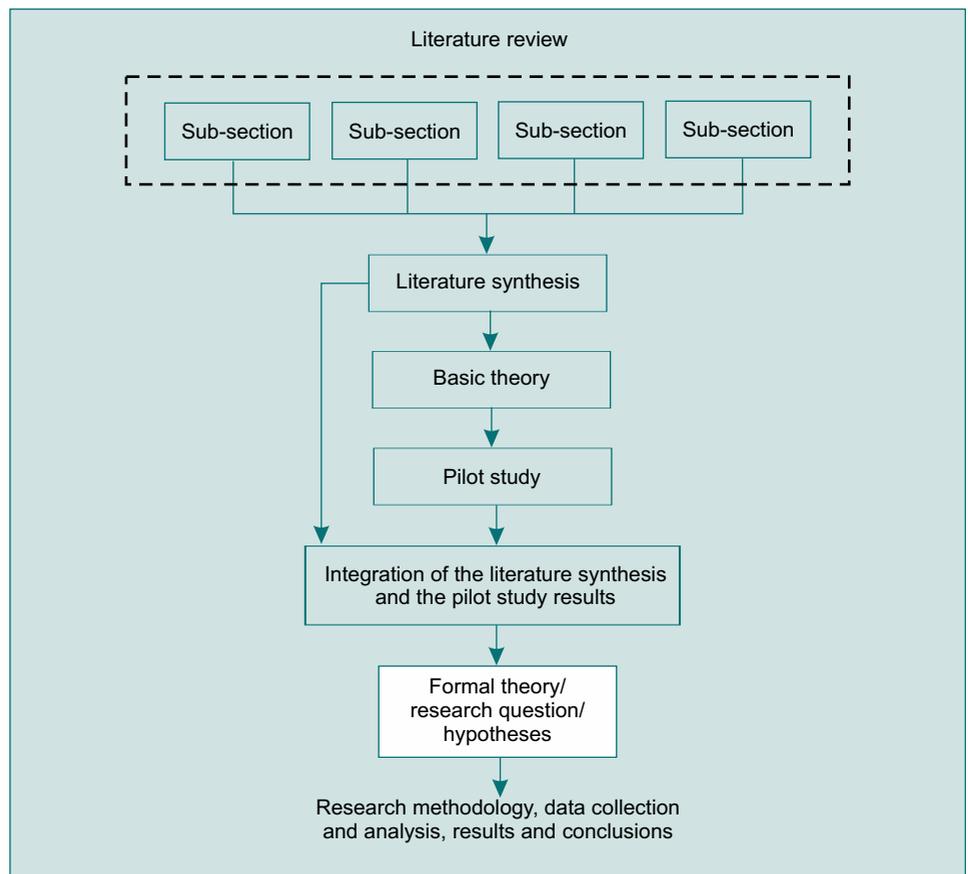
Figure 1.8   The development of the formal theory

The formal theory can take many forms, including that of:

- a single sentence;
- a paragraph;
- a mathematical formula or series of mathematical formulae;
- a diagram (with explanation);
- a process model (with explanation);
- a model; or
- a statement of the variables that comprise a set of principles on which the theory rests, together with their interrelationship.

For example, Sir Isaac Newton's law of universal gravitation states that:

> **Every object in the universe attracts every other object with a force directed along the line of the centres of the two objects that is proportional to the product of their masses and inversely proportional to the square of the distance between the two objects.**

In other words, the gravitational force between two objects acts in a straight line and is a function of both mass and distance. The distance, or separation, is 'more important' than mass because it acts as an inverse square driver of gravitational field. For example, if the mass of one object is doubled, the gravitational force is doubled. If the distance between the object and another object is doubled, the gravitational force is not halved; it is, in fact, quartered.

Newton's law of gravitation is a clear example of a formal theory. It is stated in the form of a paragraph of text, and the relationships between the variables are described. The same theory can also be expressed as a mathematical formula:

$$F = G \frac{m_1 m_2}{R^2}$$

where:

F = the gravitational force (in newtons)
G = the gravitational force constant
m = the mass (m_1 and m_2) of the two objects (in kilograms)
R = the distance between the two objects (in metres).

The mathematical formula says exactly the same as the text version of the formal theory. It simply expresses the variables in a mathematical relationship. Newton was able to link mass, distance and gravitational force using a constant (non-variable) element. In this case the constant is the gravitational force constant (G).

The theory could also be illustrated by presenting the model that underlies it. Newton's law is often represented using the famous example of a cannonball being fired from a cannon on top of a very high mountain. The cannon is high relative to the ground, so when it is fired the cannonball moves horizontally and also vertically because of the force of gravity. The cannonball will take longer to hit the ground when fired from a mountain, simply because the ground is further away. Newton already knew from Galileo's work that gravity acts as a force on an object (independent of its mass), and that force on earth is directed downwards. Newton also

knew that the earth is round. The cannonball, if fired fast enough, will travel a long way from the cannon before it eventually hits the ground due to the gravitational force. The cannonball example says exactly the same as the written theory and the mathematical formula, but in this case attention is focused on a specific model to which some causal statements are added. This focus can make the theory more readily understandable.

An example of a corresponding theory in the economic and social sciences is Maslow's hierarchy of needs. Most readers will be familiar with Maslow's work, because it contributed greatly to the development of the literature base on motivation and motivational theory. The pyramid shape, with its five levels, is a *model* that, when coupled with three basic observations about human needs and one underlying principle as expressed in his text, constitutes a psychological *theory* of motivation. Maslow's model puts forward a motivational hierarchy, ranging from the high-level self-actualisation and esteem, through belongingness, to the more fundamental safety and physiological factors. What turns this into a theory are the observations that a) people are complex and their behaviour is 'multiply motivated'; b) it is rare for several needs to motivate behaviour at the same time; and c) we need to be able to account for which behaviour is likely to be observed at any one time and, thereby, begin to understand what is driving the person's behaviour at any one time. The rest of Maslow's theory constitutes an exposition of the principle involved: the idea of 'prepotency' (i.e. why and how some items in the hierarchy take precedence, based on some fundamental assumptions about biological, social and psychological processes). Without this basic theoretical background, we are left with statements, based on the model alone, that are trivial – as in the common oversimplification 'When lower-level needs have been satisfied, we then "move on to" higher-level ones.' There is no such necessary progression. We may or may not. To decide which, we need to draw on the three observations and one principle that constitute the theory.

1.9   Supervision

1.9.1   Introduction

In the preparation of the intermediate submission the candidate, for the first time, works directly with a supervisor. For most candidates, the idea of working with an expert in the chosen field can be daunting. This section gives an insight into what the candidate should expect from the supervisor and, indeed, what the supervisor expects from the candidate. Module 4 goes into much more detail on the mechanics of working with the supervisor and includes a summary of the formal quarterly progress reports required by the Research Committee.

1.9.2   The Role of the Supervisor

As discussed in IBR1, all supervisors hold a relevant PhD or DBA. All have supervised doctoral research programmes to successful completion, and most will be research active in the appropriate field. This means that they regularly publish

research at a medium to high level within the field. It is reasonable to assume, therefore, that the supervisor has a thorough and detailed understanding of the standard of research required. In completing his or her own doctoral research, the supervisor will also have gained experience of the supervisor–candidate relationship. Supervision is an important responsibility, and a good supervisor can make an enormous difference to the motivation and commitment of the candidate.

The supervisor is introduced to the candidate at the point at which the candidate has completed the courses stage of the programme and has submitted a research proposal that has been accepted by the Research Committee. There are, however, some exceptions to this rule. For example, suitably qualified candidates who already hold a doctorate may be allowed to progress directly to either the mentored phase or the supervised phase without having to complete one or more of the IBR courses.

Therefore, the candidate will *usually* have completed a series of very demanding examinations and developed a research proposal of such a standard that it has been accepted by the Research Committee. The candidate should not feel in any way unqualified to work with the supervisor. The candidate has passed the first checkpoint within the research stage of the programme (the research proposal), and the supervisor is now available to assist the candidate in passing the second checkpoint (the intermediate submission) before he or she proceeds to the main study.

Some candidates make the mistake initially of relying too much on the supervisor. The supervisor is responsible only for giving advice, which the candidate may choose to reject, on the development of the research programme. It is the candidate's responsibility to actually carry out the research. The supervisor is not responsible for close direction of the candidate's work. It should be stressed, however, that the candidate is strongly advised to take the guidance offered. If the candidate chooses to disregard it, the results may be undesirable. It should also be remembered that supervisors are highly qualified and experienced. They are carefully selected by EBS to ensure they are fully competent. In other words, the supervisors really do know what they are talking about, and it would be risky and unwise to disregard their advice.

There is also the issue of professional compromise. The supervisor will offer his or her advice in good faith. If this advice is disregarded, the supervisor may feel that his or her ability to contribute to the redevelopment of the research has been compromised and that he or she is unable to continue in the working relationship. For example, if the supervisor advises that a proposed methodology is not reliable but the candidate insists on using it anyway, the supervisor may feel there is no point continuing to offer supervision: the research is now fundamentally and intrinsically flawed.

EBS recommends that the candidate and supervisor meet at least once (if possible) during the course of the research programme. Thereafter, communication is primarily via the DBA Board on the Student Portal. Limited communication can occur by other media such as phone or email as required or preferred by the candidate, provided the two parties maintain detailed and accurate records of all communications on the DBA Board.

The supervisor is the first level of control over the formal quarterly progress reports to be submitted by the candidate every three months. The candidate completes the report and posts it on the DBA Board, and the supervisor will read it carefully before issuing a feedback report. The supervisor, in his or her feedback, will advise the candidate of any necessary amendments or modifications. The final decision on all aspects of the report lies with the candidate.

1.10 Some Important Issues

1.10.1 Introduction

These issues have emerged during the operation of the EBS DBA programme and are listed here so that new candidates can allow for them as they develop their own research programmes. They are not the only issues the candidate needs to be aware of, but they are particularly important as they have the potential, if not managed properly, to affect the research stage of the programme.

1.10.2 The Size of the Intermediate Submission

The purpose of the intermediate submission is to demonstrate that the candidate has an acceptable understanding of the relevant literature base and has synthesised the literature and formulated research aims and objectives and a suitable research design, with its associated methodology. There is no standard chapter size or word count for any of these components or for the intermediate submission as a whole.

The size of the literature review chapters depends largely on the relevant literature base. As a general rule, the larger the literature base the larger the corresponding review, simply because there is likely to be more literature to review to demonstrate an understanding of the knowledge base. The actual amount of work required, however, also depends on the scope of the research. Therefore, it is difficult to say exactly how large the intermediate submission should be for any given thesis.

As a general guide, the intermediate submission might make up perhaps 60 per cent of the final thesis. In other words, for a typical DBA thesis of 45 000 to 50 000 words the intermediate submission might contain around 27 000 to 30 000 words. Of this total, the literature review and synthesis, excluding the research methodology, pilot study report, etc., might be expected to be in the region of 10 000 to 15 000 words.

These are general figures provided for indicative purposes only. The size of each intermediate submission and its individual components depends on numerous factors, and there is no specific target to aim for.

1.10.3 Plagiarism

It will be recalled from IBR1 that plagiarism is the act of taking the work of a third party and presenting it as one's own. This is a particularly important issue when working on the intermediate submission, because the candidate will be reading large

numbers of publications and assembling his or her own literature review based largely on the work of others.

It is imperative that candidates remain aware of, and comply with, all current University regulations regarding plagiarism. A copy of the latest guidelines can be found at www.hw.ac.uk/registry/resources/PlagiarismGuide.pdf. The document 'Avoiding Plagiarism', available on the Student Portal, provides some helpful additional notes.

1.10.4   Change Control

As discussed in IBR1, the research proposal, intermediate submission and thesis are subject to formal review by the Research Committee. This reviewing system ensures, as far as possible, that the research is progressing satisfactorily at each checkpoint in the collective opinion of the Committee.

The research proposal, once accepted by the Committee, acts as a permanent foundation and term of reference for the rest of the programme. As the intermediate submission develops, all sections must remain aligned to the research proposal. Once the Committee has reviewed and approved the proposal, the approach and focus detailed within it should not be changed significantly without Committee approval. If the supervisor and candidate agree a change would be desirable, it must be referred to the Committee and approval must be forthcoming before the change can be implemented.

1.10.5   Maximum Number of Resubmissions

An intermediate submission that is not accepted after the initial submission and two resubmissions cannot be resubmitted a third time. At that point, the candidate is required to withdraw from the programme. It is important, therefore, that the intermediate submission is not made until the candidate and supervisor are satisfied that it is of an acceptable standard.

Learning Summary

This module has outlined the purpose of the basic components of the intermediate submission and the role of the supervisor in supporting its preparation. The chief points to remember are as follows.

The intermediate submission contains more than a literature review; it is, essentially, an early draft of the first part of the thesis. An introduction should precede the literature review; the latter should end with a synthesis from which the basic theory is constructed in order to address a gap in the knowledge of the subject matter. It should also contain an account of any pilot work that has been done in order to arrive at a formal theory that is going to shape the main empirical study. The methodology underlying the empirical work should be stated.

The literature review itself has three essential characteristics. It should be a complete account of the published research relevant to the candidate's topic; it should be written in a critical rather than a merely descriptive way; and it should provide an

argument that justifies the basic theory and identifies the knowledge gap that the candidate seeks to address.

The pilot study provides an initial test of the basic theory, resulting in a formal theory (in work based on the positivist paradigm). It also serves to check the procedural arrangements planned for the empirical stage of the research.

The supervisor is there to help, offering subject-based expertise and guidance that becomes less directive as the candidate's own knowledge and expertise in the chosen field grow.