

CHAPTER 4 RESEARCH METHODOLOGY

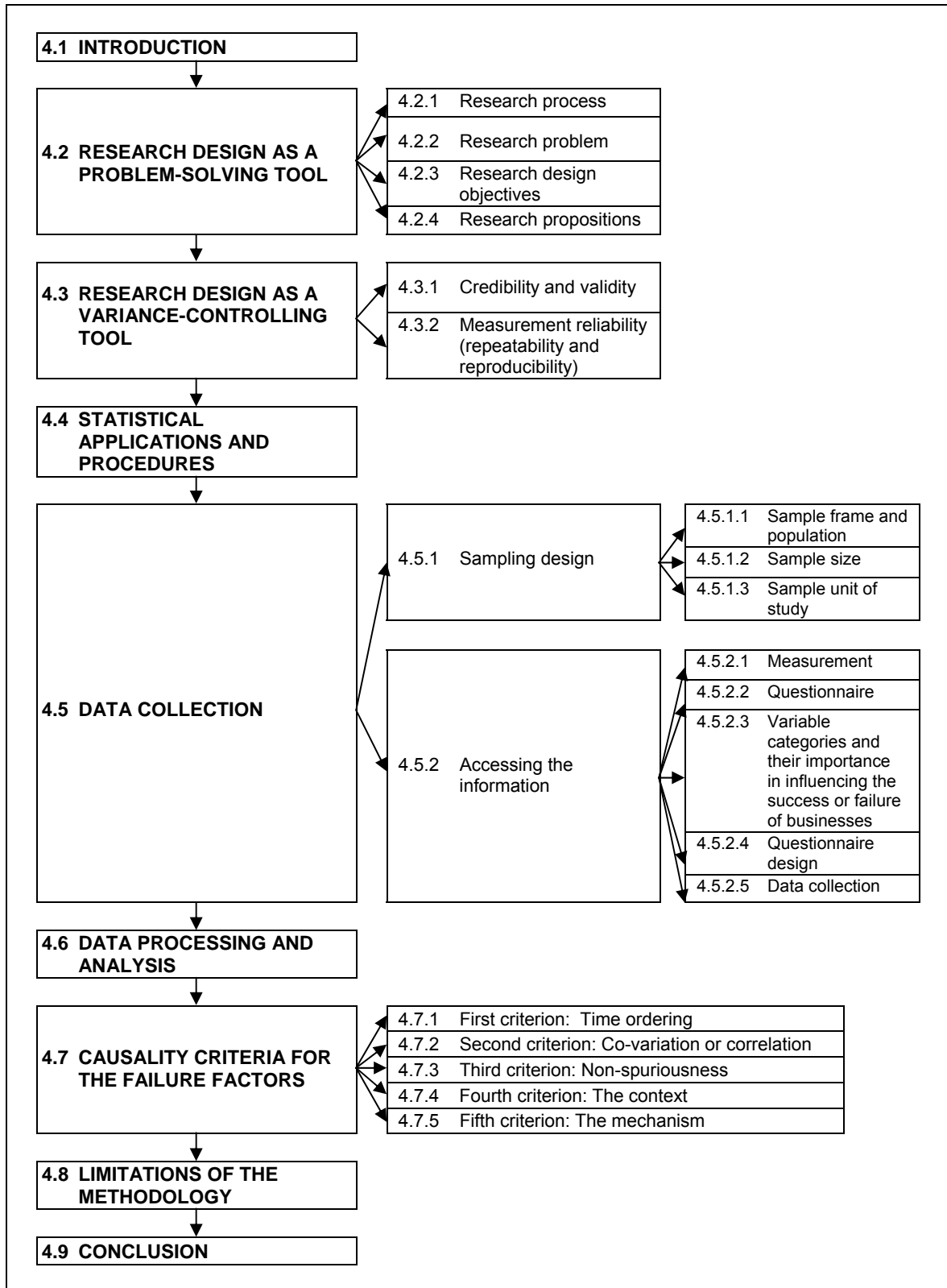


Figure 4.1: Layout of Chapter 4

CHAPTER 4

RESEARCH METHODOLOGY

4.1 INTRODUCTION

In keeping with the issues addressed in Chapter 2 (Literature Review) and Chapter 3 (Conceptual Framework for the Research), the procedures for data collection and analysis in this chapter involved obtaining an account of what the owners of failed small businesses perceived as having caused their businesses to fail. This task was undertaken to enable this research to establish the causes of failures from the perspectives of the business owners themselves to address the second research question, “What causes do owners of the failed businesses report as having caused their business to fail?”. This chapter discusses the research design, data collection, data processing, causality criteria, and limitations of the research methods.

The data collection procedure involved obtaining empirical data from the owners of failed small businesses about the factors which closed down their businesses, finding statistical relationships between the variables concerned, and developing a causal explanatory model of the business failure processes from the variables. Kerlinger & Lee (2000:450) emphasise the significance of research methodology as a variable controlling mechanism by saying that research design helps investigators obtain answers to the questions of research and to control the experimental, extraneous, and error variances of the particular research problem under study. Further, according to Leedy & Ormrod (2005:93), data are like ore because they contain pieces of the truth but are in a rather unrefined state. To extract meaning from the data, what is commonly known as research methodology is employed. Data and methodology are inextricably interdependent (Juvan, Bartol & Boh 2005:485). For this reason, the methodology to be used for a particular research problem must always take into account the nature/type of data that are collected in the resolution of the problem. It is generally accepted that the nature of

the research problem must dictate the research method to be followed to collect the data.

As the data for this research are historical, the method used is retrospective or *ex post facto*. To answer why the retrospective or *ex post facto* methodology is suitable for this research, the approach was used to obtain information about objects which no longer exist. The retrospective or *ex post facto* design was consequently specific for the data to be collected.

According to Thornhill & Amit (2003a:506) a post-mortem analysis is preferred to other methodologies if the data being used are historic in nature. In approaching the causes of failure from a post-mortem approach, it has become clear that causes of small business failure can only be validated by the owners of the businesses who were present when the failure occurred. An explanatory methodological approach was required which allowed for the identification of the causes of the business failures, “How?” and “Why?” they failed in the research areas as a means to understand the complex nature of the phenomenon of failure.

Using this method there should therefore be no arguments regarding the causes of failure of the small businesses as the owner-managers emerged as the eye witnesses who possess first-hand information on the causes of the failure. As the owner-managers of failed businesses do know what caused the failure of their ventures, interviewing them eliminated any extraneous variables, thereby strengthening the cause-and-effect relations even in the absence of a control, normally used in scientific experiments.

A review of the extant approaches warranted the selection of an inductive, qualitative and quantitative methodology. According to Kerlinger & Lee (2000:558), and Johnson & Christensen (2004:346), in retrospective research, the researcher typically starts with the dependent variable (that is, with an observed result or outcome) and then moves backward in time, locating information on variables that help explain individual’s status on the dependent variable. Retrospective questions ask people to recall something from an earlier time in their lives. In explanatory non-experimental/retrospective research, researchers are interested in theories that explain “How?” and “Why?” a phenomenon operated as it did.

This type of explanatory research can be along cross-sectional or longitudinal time dimensions. Before cause-effect can be established, at a minimum level the three necessary conditions for concluding that the relationship between variable A and variable B is causal are: (1) there must be a statistically correlated/covariance relationship between variable A and variable B; (2) variable A must occur before variable B, and (3) spurious relationships must be eliminated. In retrospective analysis direct control is not necessary. Controlling for any extraneous variables is achieved through (1) matching, (2) restricting the study to a subpopulation, and (3) a statistical control. As far as the limitations of retrospective interpretation are concerned, according to Leedy & Ormrod (2005:85) and Kumar (2005:97), there are three notable weaknesses about which researchers need to be aware:

- The inability to manipulate independent variables;
- The lack of power to randomise; and
- The risk of improper causal interpretation or explanation.

Thornhill & Amit (2003a:506) point out that there is value to be gained from research into failed organisations:

Just as medical science would be unlikely to progress by studying only healthy individuals; organisation theory may also be limited in the knowledge attainable only from the study of successful firms.

The ability to probe the causes of failure by studying specific instances, rather than macro-economic indicators, is a unique strength of the method. It follows, therefore, that the post-mortem methodology is suitable from an ontological and epistemological position to investigate and describe the causes of the small business failures in the research areas. The research design is explained in the next section.

4.2 RESEARCH DESIGN AS A PROBLEM-SOLVING TOOL

The research design as a problem-solving tool follows the processes outlined in Section 4.2.1 as discussed by the following researchers: Zikmund (2003:42); Cooper & Schindler (2008:153); Mouton (2002:193), and Fouché & Delpont (2006:71).

4.2.1 Research process

According to Leedy & Ormrod (2005:85) research design provides the overall structure for the procedures the researcher follows, the data the researcher collects, and the data analyses the researcher conducts. The research process as recommended by the above researchers (p.85) was followed in this research and is depicted in Figure 4.2:

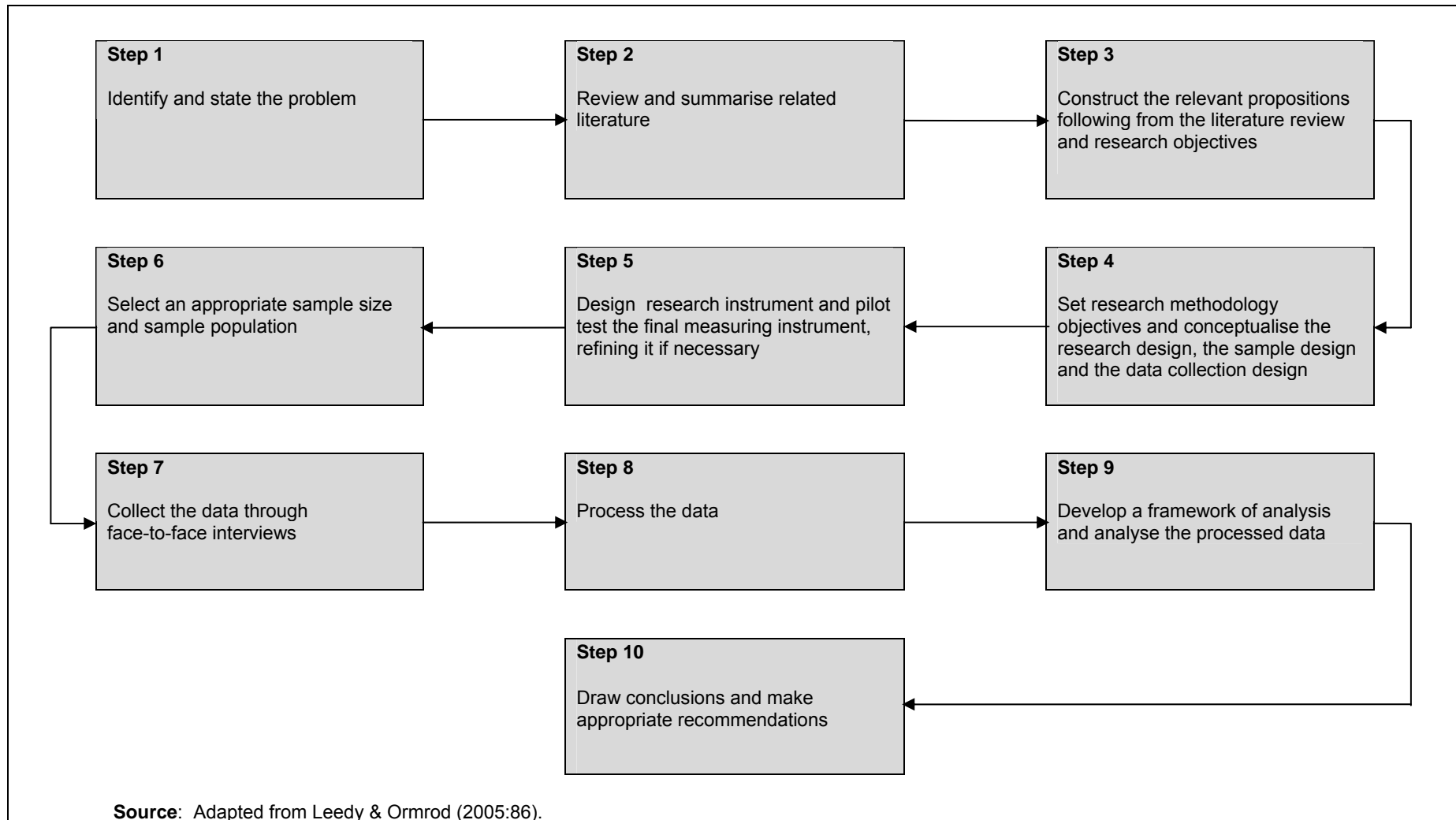


Figure 4.2: Detailed research process followed in this research

4.2.2 Research problem

As noted in Chapter 1, the research questions that prompted the research methodology of this research are restated as:

1. What causes do owners of the failed businesses report as having caused their business to fail?
2. How different are such causes from the existing theories?
3. Can a model for the better understanding of the causes of the business failures be created?

4.2.3 Research design objectives

The objectives underlying the research design are to:

- Handle non-experimental and retrospective data;
- Design a causal modelling methodology;
- State the research propositions underlying the study;
- Address the procedure for data collection; and
- Design a framework for the data analysis.

Having outlined the objectives behind the research design, attention is now focused on the research propositions related to the above design objectives.

4.2.4 Research propositions

The tentative solutions to the research problems stated in Chapter 1 are now stated as propositions in this section. Generally, propositions are tentative statements indicating what the present research expects to find in the field. They are specific expectations to be verified as hypotheses (Mouton 2002:187; Leedy & Ormrod 2005:270; de Vos 2006a:34). Indeed, there are those researchers who use propositions and hypotheses interchangeably (Cooper & Schindler 2008:64; de Vos 2006a:34). By relying on the propositions, one can obtain a good indication of what to expect in the findings of Chapter 5.

Attention is now redirected to the propositions for this research (Section 1.6), which are:

- P₁** Monitoring and control contributes to failure in small businesses.
- P₂** Experience and planning in finance and marketing contributes to failure in small businesses.
- P₃** Income constraints contribute to failure in small businesses.
- P₄** Cash control contributes to failure in small business.

These propositions are critical in disclosing the nature of the concrete or exact causes of the failures of the businesses under study. These concrete causes will emerge in Chapter 5.

4.3 RESEARCH DESIGN AS A VARIANCE-CONTROLLING TOOL

Kerlinger & Lee (2000:455) stress the significance of research design as a variance controlling mechanism by emphasising that the main technical function of research design is to control variance. A research design is, in a manner of speaking, a set of instructions to the investigator to gather and analyse data in certain ways. It is thus a control mechanism.

According to Kerlinger & Lee (2000:456), controlling of variances involves:

- Maximising variances in variables from the hypothesis (dependent variable influenced by the independent variable);
- Controlling variance of extraneous or unwanted variables that may have an effect on the experimental outcomes; and
- Minimising sampling errors or random variance, including so-called errors of measurement.

4.3.1 Credibility and validity

Credibility and initial direction for the interviews were achieved in this research by ensuring internal validity. Initially 10 business people were approached and interviewed in a pre-pilot study (in 2005) on an ad hoc basis to establish what they believed caused small businesses to fail within a period of seven years from their initial start-up (Appendix C).

Using this input, an open-ended structured questionnaire was compiled which was pilot-tested (in 2006) on a further 50 owners-managers of small businesses that had failed within seven years of their start-up (Appendix B). These responses were used to fine-tune the final (2007) questionnaire (Appendix A) which was administered to a different sample of 254 owners-managers of small businesses that had failed within seven years of their start-up.

The aforementioned processes enhanced the internal validity of the instrument, thus avoiding extraneous factors to ensure that the instrument was designed to measure exactly what it was supposed to measure, that is, the small business failure process. The two types of threats to validity in retrospective design are internal validity threats and external validity threats.

Threats to internal validity in this research were reduced by optimising the selection of the sample, as there was no need to control other internal variances (Martella *et al* 1999:178). Threats to external validity were reduced by considering generalisations with reference to this research (Martella *et al* 1999:180). The measurement of the dependent variable (that is, the high failure rate of SMMEs), as well as the interaction of history and treatment effects were also considered.

4.3.1.1 **CONSTRUCT VALIDITY**

Construct validity refers to the extent to which a set of measured variables actually represents the theoretical latent construct (unobservable) which they are designed to measure (Grimm & Yarnold 2002:99; Hair *et al* 2006:771; Cooper & Schindler 2008:253). In this research, ensuring construct validity implied at first scrutinising the theory and the instrument at hand. A higher than 0.7 Cronbach alpha value indicates that the instrument measured what it was supposed to measure, that is,

the causes of failure of the SMMEs. In Chapter 5, high Cronbach alpha values are reported, ranging from 0.80 to 0.98 across all the factors (Table 5.10).

4.3.1.2 *CONTENT VALIDITY*

The content validity of a measuring instrument (composite of measurement scales) is the extent to which it provides adequate coverage of the investigative questions guiding the research (Hair *et al* 2006:771). In this research, ensuring the content validity meant including all construct or criterion validity as in the foregoing variables that were relevant to answering the research question and measuring them inclusively, to ensure that they were all included in the final measurement.

4.3.1.3 *CRITERION VALIDITY*

Criterion-related validity reflects the success of the measures used for prediction or estimation (Cooper & Schindler 2008:253). It means predicting present or future outcomes of a condition or behaviour of a theory or construct under consideration. This involves multiple measurements and is established by comparing scores on an instrument with an external criterion known to measure the concept. In this research, the criterion measures were judged by ensuring their relevance, their freedom from bias, their reliability, and availability.

Mouton (2002:17) states that the three forms of validity are interrelated. For example, predictive validity would be handy for estimating the causes of failure from failed small businesses/ventures, while the variables to be used for prediction are introduced into the instrument via the construct validity. To include the full range of the construct to be measured in order to estimate the causes of failure in the small businesses is then a matter of content validity (the full range of all constructs to be estimated for their contribution to the failure).

In summary, when one asks how valid the above instrument is implies posing three questions about the small business failure process:

- What does this instrument mean? What is it in fact measuring, and how and why does it operate the way it does? (construct validity);
- How well does the instrument measure the small business failure process it wants to measure? (content validity); and

- How well does the instrument compare with one or more external criteria purporting to measure the small business failure? (criterion validity).

4.3.2 Measuring reliability (repeatability and reproducibility)

Reliability is the extent to which a variable or set of variables is consistent with what it is intended to measure. If multiple measurements are taken, the reliable measures will all be consistent in their values. Reliability differs from validity in that it relates not to what should be measured (accuracy/exactness), but instead indicates how it is measured (Hair *et al* 2006:771). According to Cooper & Schindler (2008:292) reliability is concerned with estimates of the degree to which a measurement is free of random or unstable error. Reliability is further understood as a partial contributor to validity (p.292). Reliability consists of the following constructs: stability, equivalence, internal consistency, and practicality.

4.3.2.1 STABILITY

Stability in this research was ensured during the interviews by remaining consistent in the method of obtaining answers from the respondents. All the respondents were treated in such a way that if they were to be approached a long time after the interviews, they would still be expected to answer in the same way if the identical question were posed to them under the same conditions or environment.

4.3.2.2 EQUIVALENCE

Equivalence was ensured by allowing the same interviewer to conduct and complete the research, asking questions in the same way while the scales remained the same to allay the fear of the interviewees in the same way. This thereby created some consistency in the manner of approach to the entire sample.

4.3.2.3 INTERNAL CONSISTENCY

Internal consistency or homogeneity in this research was realised during the interview process by making use of the split-half technique, in which similar questions were inserted under different variables. For example, under the factor

“experience and planning in finance and marketing” (factor 2) the same answers were expected although two discernibly different categories of questions were posed (Appendix A.2.2: questions 10 and 14). The high Cronbach alpha among factors obtained in the research served as evidence of the correlation of the assertions.

4.3.2.4 PRACTICALITY

The measurement in this research met the test of practicality by making it cost-effective and convenient for the interviewer to administer and the respondents to interpret.

4.4 STATISTICAL APPLICATIONS AND PROCEDURES

Without statistics, the processing and analysis of the vast array of data would have been a daunting task, since, as stressed by Leedy & Ormrod (2005:30), statistics have two prime functions: to help the researcher (1) describe the data and (2) draw inferences from the data.

The main types of statistics used in handling and processing the mass of data during this research were factor analysis and the analysis of variance (ANOVA).

Lastly, to determine whether the different forms of behaviour of the variables were purely due to experimental interventions, chance or due to methodological designs, the research used inferential statistics, that is, making estimates from samples and applying them to the population. This refers to the statistical method whereby the research arrives at decisions by making inferences from the collected data as explained before.

4.5 DATA COLLECTION

Data collection is a process of identifying samples from which to collect data (Leedy & Ormrod 2005:6). Schematically, it involves the relationship between a population, elements, and a sample. In this research, all small businesses in South Africa constitute the “universe”. All the failed small businesses are known as the

“population”. The failed small businesses in this research are the “sample”. Each failed small business is an “element”. Thus, an Element < Sample < Population < Universe.

4.5.1 Sampling design

Mouton (2002:136) asserts that the key concept in sampling is representativeness. Unless the sample from which we will generalise truthfully or faithfully represents the population from which it was drawn, we have no reason to believe that the population has the same properties as those of the sample.

To overcome the problem of sample bias, this research made use of the systemic random sampling method to select failed small businesses.

This was followed by a “snowball” sampling technique, explained by Cooper & Schindler (2001:194, 2008:388) as follows:

“Snowball” sampling has found a niche in recent years, in applications where respondents are difficult to identify and are best located through referral networks. In the initial stage of snowball sampling, individuals are discovered and may or may not be selected through probability methods. This group is then used to locate other respondents who possess similar characteristics and who, in turn, identify others. Similar to a reverse search for bibliographic sources, the snowball gathers subjects as it rolls along.

A list of 55 000 failed small businesses was obtained in 2006 from the **dti** department responsible for registering small businesses (the Companies and Intellectual Property Registration Office). Additional lists of failed small businesses were obtained in 2006 from the Limpopo Development Corporation, the Mpumalanga Economic Empowerment Corporation, and the Botswana Development Corporation.

From these lists, a random selection of 254 failed small businesses was made for the purpose of addressing the objectives of the research. These ventures had failed between the period 2000 and 2006. At first, every 100th failed venture was selected using names and addresses through a random systematic sampling

method. Those who did not agree to be interviewed suggested the names of other failed small businesses and, using this snowball sampling method, finally 254 interviews were completed. The end result was a sample consisting of 254 failed small businesses in the Gauteng, Limpopo and Mpumalanga provinces of the Republic of South Africa and also from Gaborone in Botswana whose owners were interviewed between January 2007 and December 2007.

4.5.1.1 SAMPLE FRAME AND POPULATION

Business methods researchers, such as Cooper & Schindler (2001:170, 2008:383) and Zikmund (1997:420, 2003:511), define the sample frame as being closely related to the population. The sample frame is understood as the list of elements from which the sample was actually drawn. In this research the sample frame thus refers to all the closed SMMEs in the research area.

4.5.1.2 SAMPLE SIZE

Statisticians maintain that a larger sample is always better because of a lower random sampling error (Cooper & Schindler 2001:170, 2008:385; Zikmund 1997:471, 2003:511). The following parameters of interest dictated what sample and what sample size were needed:

- Variation (heterogeneity) or dispersion within the population;
- The desired precision or repeatability;
- The higher the confidence levels in the estimate, the larger the sample needed for the research.

According to Hair *et al* (2006:112), researchers should not analyse by factorising a sample of fewer than 50 observations, and preferably the sample size should be 100 or larger. As a rule, the minimum is to have at least five times as many observations as the number of variables to be analysed, and a more acceptable sample size would have a 10:1 ratio.

The final sample for this research consisted of 254 failed small business owners-managers as discussed in Section 4.5.1. The geographical areas covered were: Gauteng Province, Limpopo Province, Mpumalanga Province, and Gaborone in Botswana. Table 4.1 provides details of the respondents interviewed in the

research area and is related to the “referral” or “snowballing” method of sampling used.

Table 4.1: Table of respondents

Province	Number of respondents (n)	Percentage of sample (%)
Gauteng	113	44.5
Mpumalanga	51	20.1
Limpopo	76	29.9
Botswana	14	5.4
Total	254	100.0
Source: Own compilation from empirical research.		

4.5.1.3 SAMPLE UNIT OF STUDY

A sample unit is understood as a single element or group of elements subject to selection in the sample (Zikmund 1997:423, 2003:496). The survey unit is the SMMEs that failed in the Gauteng, Limpopo and Mpumalanga provinces of the Republic of South Africa, and Gaborone in Botswana within seven years of their start up (namely, between 2000 and 2006). The list of the businesses in the four research areas is stored both on compact discs and in hard copy format. The information is confidential in accordance with the respondents’ request for privacy.

4.5.2 Accessing the information

Participation and interaction with the owner-managers of the failed businesses enabled them to freely explain the causes of their business failures. The qualitative method used in the research enabled a deeper understanding to be obtained of the meanings attributed to the business management principles by the owner-managers of the failed businesses (Silverman 2001:101; Beaver & Jennings 2005:15).

The researcher undertook all the interviews to collect the data. The data were collected after the instrument had been pilot-tested on 50 owners-managers of failed small businesses and fine-tuned.

Data collection took place between January 2007 and December 2007. The theory of causal comparative (non-experiment) or critical realist retrospective methodology guided the researcher on how the data should be collected.

4.5.2.1 MEASUREMENT

Measurement is the process of quantifying or scoring variables influencing the business failure process. Measurement occurs after the data have been collected (Gay, Mills & Airasian 2006:128). A 4-point Likert scale was used to measure differences among the demographic groups classified as categories. These categories were scored by measuring from “strongly disagree” = 1 to “strongly agree” = 4. The factor analysis method was also used to measure the strengths of the failure variables.

4.5.2.2 QUESTIONNAIRE

The designed questionnaire sought to explore the possible causal relationships between the variables (Gall, Borg & Gall 1996:373). The chosen design was retrospective, causal-comparative or non-experimental. According to Charles (1998:350), causal-comparative research highlights cause-and-effect relations. The retrospective or *ex post facto* design is specific for the collection of data. Thornhill & Amit (2003a:506) are of the opinion that a post-mortem analysis is preferred to other methodologies in investigating failure mainly because it deals with instances of failure, as already stated.

In using the variables collected from the field to build causal models, it was ensured first that the variables selected complied with the principles of empirical associations, appropriate time order, non-spuriousness, the identification of a mechanism and external validity (as discussed in Chapter 1).

The complete questionnaire used in 2007 is provided in Appendix A and consists of 15 close-ended questions and one open-ended question. The reasons certain variables were chosen for inclusion in the questionnaire follow in the next sections.

4.5.2.3 VARIABLE CATEGORIES AND THEIR IMPORTANCE IN INFLUENCING THE SUCCESS OR FAILURE OF BUSINESSES

The interactions with the owner-managers of the failed small businesses led to the emergence of the concepts and variables associated with the business failures.

The variables are discussed under two headings:

- those related to the production, sales and monitoring processes in business management (the internal environment); and
- those related to the activities of the stakeholders/supportive or networking business environment associated with the owners of the businesses (the external environment).

In terms of the foregoing, the review of the causes of the business failures suggests 51 possible variables. Those variables relate to the state of the finances of the business, the demand factors, the extent of innovation adoption, and the overall sustainable management of the business. The variables were informed by the Literature Review (Chapter 2); the discussions in Chapter 3; the information garnered from the pre-pilot and pilot tests and from the hindsight information emanating from the owner-managers of the failed small businesses. The 51 variables which were used represent the answers the respondents gave for the failure of their businesses. In the questionnaire, the respondents were given the opportunity to indicate their opinions on the influences they felt the variables imposed on their normal operations and the steps they took before the businesses finally closed down.

One cannot readily make sense of such a large number of apparently unrelated variables. A method of reducing the large numbers into a manageable set of groups therefore became necessary. The data were thus subjected to reduction using the method of factor analysis. The factor analysis-based classification produced the ultimate/final groups upon which the recommendations of the research are based.

4.5.2.4 QUESTIONNAIRE DESIGN

Ten business people were approached and interviewed in 2005 in a pre-pilot study on an ad hoc basis to establish what they believed caused small businesses to fail

within seven years from their initial start-up (Appendix C). From this input, a qualitative questionnaire was designed (Appendix B) and tested in 2006 on 50 owners-managers of small businesses that had failed within seven years of start up to check for validity and accuracy. The input obtained from the pilot study (Appendix B – conducted in 2006) was used to fine-tune the final research questionnaire which was administered in 2007 (Appendix A). The set of owner-managers who was interviewed for the 2006 pilot study was not interviewed again when the final instrument was administered to avoid test bias. A fresh set of 254 owner-managers of small businesses that had failed within seven years of start up was identified from the Gauteng, Limpopo and Mpumalanga provinces in the Republic of South Africa as well as from Gaborone in Botswana and interviewed to collect the final data.

4.5.2.5 DATA COLLECTION

Data were collected in 2007 by conducting face-to-face interviews with 254 owner-managers of small businesses that had failed within seven years of start up in the Gauteng, Limpopo and Mpumalanga provinces of the Republic of South Africa, and Gaborone in Botswana. The method of face-to-face interviews was chosen to administer the final questionnaire because it enhanced the accuracy of data collection. It also increased the response rate (which was 100 %) as firm appointments were made to interview the respondents. The appointments were confirmed telephonically prior to the interviews. The final data were collected in two sections, namely, demographics and the causes of the failure.

The interview commenced with the interviewer reassuring the respondents that the outcomes of the research would be made available to trainers, financiers and policy makers of small businesses as input in the future development of the small business sector. This reassurance assisted the respondents to understand that, by participating in this research, they stood the chance of benefiting from small business developers, financiers, as well as the relevant policy makers. The tone of the questionnaire was friendly to reduce the respondents' anxiety during the interviews.

The first part of the questionnaire concerned mainly the small business' demographics and other background information which served as a memory-jogger in retrieving the causes of past failure for those respondents who suffered memory lapses.

The second section of the questionnaire related to the causes of failure variables, such as business management skills, experience and financial management. The last question in this section was unstructured and open-ended to bring the understanding of failure to completion from the owner-manager's perspective and enabled the researcher to obtain freely divulged information to understand the causes of their business failures.

During the interview, the interviewer took notes of hindsight and anecdotal evidence not explored by the questionnaire. These notes were transcribed afterwards and studied to find any nuances that might need further probing to enrich the value of the research.

The processing of data and its analysis is discussed in the next section.

4.6 DATA PROCESSING AND ANALYSIS

The processing of the data entailed the checking of the completed questionnaires, coding, and data capturing as well as the computer processing that involved a methodology known as BMDP4M Factor Analysis from the Statistics Department of the University of Pretoria. The same program was used to execute the factor analysis model. The researcher checked the output from the analysis prior to constructing the tables. The ANOVA involved the use of the SAS GLM computer program¹. Further analysis was conducted by using frequencies for analysing

¹ Copyright (c) 2002-2008 by SAS Institute Inc., Cary, NC, USA.

rankings. The results gave some direction into the statistical empirical associations inherent in the data reflecting the concrete actions of the owner-managers of the failed small businesses.

The results of quantitative data analysis merely disclose statistical associations at the empirical level. To undertake the process of causal modelling within the realist approach, there was the need to follow certain procedures ending in the identification of the causal mechanism behind the business failures and context for the research (Martin & McIntyre 2002:10). These procedures were applied through the causality criteria following in the next section.

4.7 CAUSALITY CRITERIA FOR THE FAILURE FACTORS

As indicated in various sections of this research, searching for the causes of failure of the businesses studied constitutes the key objective of this research (Johnson & Christensen 2004:231). Fleetwood & Ackroyd (2004:169) point out that there are two types of causal relationships: causal description and causal explanation. Causal description refers to describing the consequences of manipulating an independent variable. Causal explanation/causality/causation, in contrast, refers to explaining the mechanisms under which a causal relationship holds (Johnson & Christensen 2004:231). Both causal relationships are applicable to this research. One merit of this research thus relates to its use of both qualitative and quantitative research methods.

Researchers are continually being required to place the construction of “causal models” at the forefront of theories in business and social research. This development stems from the increasing realisation that the success of specific social interventions and the consequent credibility of social research in general depend on our knowledge of the specific mechanisms which make certain things to happen (Danermark *et al* 2006:54).

“Causal modelling” involves identifying a group of independent (predictor) variables which influence the object of research to yield certain outcomes or effects (dependent variables). Fleetwood & Ackroyd (2004:152) opine that an action (X) is causal if its outcome (Y) is produced by a mechanism operative in a

given context. According to Cooper & Schindler (2001:151, 2008:153); Johnson & Christensen (2004:231); and Gay *et al* (2006:334) research organised within the framework of causality needs to satisfy a number of conditions/criteria. In this research the three historical criteria have been extended for the completeness of causality testing to the five criteria which follow:

4.7.1 First criterion: Time ordering

This indicates that the action of the cause comes first in time. This implies that researchers must ensure that the one that occurs first is the cause of the one that occurs second – that is, the cause X actually creates the effect Y. Thus, in this research, the researcher ensured that the factors behind the business failures were there before the businesses failed (precursors), and not the other way round. In Chapter 5, four such factors are identified.

4.7.2 Second criterion: Co-variation or correlation

Even if the first condition has been satisfied, the second condition is that the variables concerned must also co-vary. The variables must move together in some patterned way. Statistical correlations have been used in Chapter 5 to satisfy this condition by relating the SMME failures to a number of variables which were subsequently reduced to four factors. Such statistical correlations do not, however, “make” causal explanations.

Before one can be sure that one has found a causal connection between any two variables, one must satisfy a third requirement for causality which is that the relationship must not be spurious (an extraneous intervening variable should not influence the relationship between two variables, X and Y, that are understood to have a causal relationship).

4.7.3 Third criterion: Non-spuriousness

A spurious or intervening relationship exists when there is an apparent but not a genuine causal connection between two variables, X and Y. With a spurious relationship, the appearance of a causal connection between two variables X and

Y is due to the fact that both variables are causally linked to a third variable, Z. If one is unaware of the presence and influence of Z, one can mistakenly conclude that X is causing Y whereas, in fact, Z could cause X and/or Y. This condition has also been satisfied in this research by ensuring that the questions posed to the respondents in Appendix A sought to establish direct links between the business failures and the underlying causes.

After the above three conditions have been met, for completeness, a further two criteria are also important. These conditions are: the context and the mechanism.

4.7.4 Fourth criterion: The context

When relationships among variables differ across geographic units like countries or across other social settings, researchers say there is a contextual effect. Identification of the context in which a causal relationship occurs can help to understand that relationship (Fleetwood & Ackroyd 2004:152). In this research, it needs to be noted that the context refers to the circumstances under which the data were collected from the 254 respondents. This also includes the critical position occupied by the SMMEs in their development of South Africa's economy.

4.7.5 Fifth criterion: The mechanism

Lastly, this research applies processes or mechanisms operating at the real level in explaining the causes of the business failures as central to this research (Fleetwood & Ackroyd 2004:152; Danermark *et al* 2006:55).

In Chapter 3, a model (Figure 3.3) was presented as constituting the broad conceptual framework for this research. It was indicated that the critical realist approach was going to be used to conceptualise the business management principles and the business environment/stakeholders as groups of related elements which could be interpreted by the owners of the businesses to produce some particular outcomes. These appear in Figures 4.3.

Fleetwood & Akroyd (2004:152) classify real objects into four: materially real, ideally real, artefactually real and socially real. The mode of realism employed in

this research belongs to the second and fourth versions. These two elements of the real concept in the application of critical realism were selected to address the issues that were raised under Section 3.5. They explain that ideally real focuses on how the ideas, beliefs, opinions and meanings impact on the concrete actions of agents. Socially real in this research will apply to elements such as the stakeholders, laws, rules, and guidelines on business management principles that need to be adhered to to enable certain things to happen (as illustrated in Figure 3.3).

Figure 4.3 is a model indicating how the business management principles element is positioned in the real level of the realist stratification model as rules, key success factors, resources or opportunities.

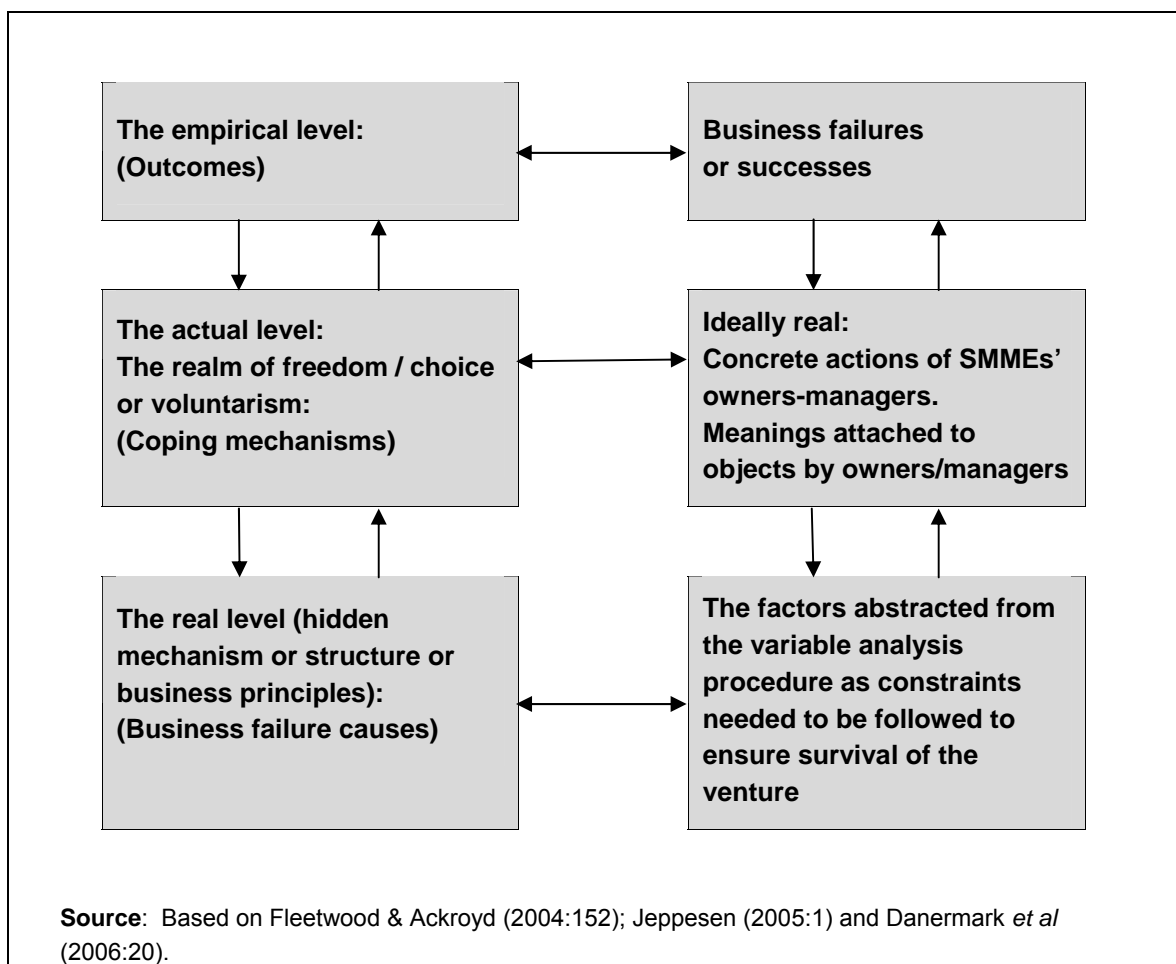


Figure 4.3: The real, actual and empirical levels indicating the two perspectives of the research objectives

Further, Figure 4.3 focuses on the activities of the owner-managers of the failed small businesses by indicating the relations between the concrete business management failure factors and the meanings which the business owner-managers attach to them. The business failure factors now occupy the real level. This model (Figure 4.3) is thus based on the critical realist three-tiered ontology comprising the real, the actual level and the empirical levels as discussed below (Sayer 2000:15; Fleetwood & Ackroyd 2004:21,79; Jeppesen 2005:1; Danermark *et al* 2006:80).

Critical realist work identifies the relationships between what one experiences (“What?”), what actually happens (“How?”) and the underlying mechanisms (“Why?”).

A brief account of the levels follows.

- The **real level** in these models indicates the mechanism (the sets of related variables under which the businesses operate). This socially real level is constraining and enabling in the sense that the individual entrepreneur can interpret the powers of the mechanisms differently to produce different outcomes.
- The **actual level** is the realm of events. The entrepreneur can interpret the constraints, resources, opportunities, and tendencies in the real level in various ways to produce different outcomes at the empirical level. The actual level then represents the location of freedom or agency where the entrepreneur can take concrete decisions to address particular goals. Wickham (2006:152) opines that owners of businesses who are predisposed to believing in failure will obviously fail. Such business owners would reify the business challenges and problems, seeing them as somehow immutable. Owners of businesses who see nothing but success in their business operations would, however, have the tendency to succeed.

One virtue of the critical realist approach is that new information and other forms of assistance can always be given to agents (the owner-managers of the failed small businesses in the present case) to enable them to overcome their weaknesses, threats, problems and challenges and also make maximum use of their opportunities, resources, strengths and potentials. Such resources and

opportunities can, in fact, be used to transform the nature of the processes within the real level. The realist approach is therefore an open-ended and action-oriented research.

- Finally, the **empirical level** represents the outcomes of the interactions between the real and actual levels. Here, everybody can observe intended outcomes (business successes) and the unintended outcomes (business failures). Figure 4.3 thus indicates that, to understand the business failures, one has to examine the processes in both the real and actual levels.

The models above thus give a picture of the importance of understanding the nature of processes occurring both within the real and actual levels.

The research findings and analysis in Chapter 5 will focus attention largely on how the real and actual levels have operated to influence the outcomes (business failures) in the empirical level.

4.8 LIMITATIONS OF THE METHODOLOGY

A research report without limitations could indicate that the researcher is unprofessional and possibly unethical. Despite the prospects of realist research to establish causal relationships between or among variables, such interpretations were made with caution. A number of problems were faced during the data collection process: some of details regarding the owner-managers of failed small businesses were not updated, making them difficult to trace. Some potential respondents refused to be interviewed because they were still being haunted by the effects of failure and those owing their creditors were afraid to be interviewed as they thought the police were after them.

4.9 CONCLUSION

The chapter introduced the relevant and historic data-specific methods that were used to collect and analyse the data to address the research objectives. In the next chapter, attention is given to the findings and analysis of the research.