

THE USE OF CASE STUDIES IN PREPARING POSTGRADUATE DISSERTATIONS ON SMALL AND MEDIUM SIZED FIRMS

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ABSTRACT

In recent years the case study methodology has been used much more in conducting research on firms. This increase is due to the needs and requirements, and to the perception that the results obtained by using such a methodology are of superior quality. The growing acceptance of case studies has been impelled by a wider knowledge and discussion of the criteria for assessing quality of case studies, and this has led to a better understanding of how the inclusion of case studies can be used to resolve certain problems connected to the study of organizations, in particular small and medium sized businesses. The present work proposes a design for conducting research suitable for writing a postgraduate dissertation on the subject of small and medium sized businesses. The methodology fulfills the conditions of quality required in a project conducted through the use of case studies. and that it is possible to complete within a limited period of time, thus improving the rate of students who graduate after completing their studies.

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INTRODUCTION

In recent years, the case study methodology has been approved in disciplines where it used to be regarded as unsuitable for conducting scientific research. In subjects like the economy of firms, while not fully accepted as equivalent to quantitative research, there has been an increase in the number of projects using case studies. This has occurred particularly in the study of small and medium sized firms (SMEs). The increased popularity of case studies is due to the specific needs and requirements associated with approaching this particular object of study, but also to a better opinion of scientific results arrived at by following this methodology.

The increasing acceptance of case studies in research relating to businesses has been impelled by a better understanding of the criteria of quality that can be used in assessing a case research projects. The criteria for assessing research has reached a degree of considerable consensus and acceptance, as a result of the publication of papers referring to the methodological debate. The debate continues between researchers who consider the use of qualitative methods to be adequate, and those who claim that the only proper way to contribute to developing the discipline is through the use of quantitative methods (Bonache 1999, Bowen and Wiersema 1999, Cepeda 2004, Dyer and Wilkins 1991, Eisenhardt 1989, 1991, Fong 2003, 2005a, 2005b, 2006, Garcia and Peña 2004, Hamel 1992, Hamel et al. 1993, Kirk and Miller 1987, Martínez 2006, Perry 1998, 2001, Platt 1992, Rouse and Daellembach 1999, Stoeker 1991, Venkatraman and Grant 1986, Villareal 2007, Yin 1984, 1989, 1994).

In the course of this debate, one question that has attracted considerable attention is how case studies in scientific research should be conducted. And, which research projects are most suitable for solving the various problems associated with studying small and medium sized firms. This paper proposes the design of a research project that will be suitable for writing a postgraduate thesis on the subject of small and medium sized firms and meets two criteria. First it fulfills the criteria for quality in research conducted through the use of case studies, and second can be completed within the time limit established by a

postgraduate course for its presentation and defence. This research project is one of the varieties a case study can assume and its principal strength is that it makes research projects that must be conducted in conditions of limited time and resources and usually in the development of a postgraduate thesis viable.

The remainder of the paper is organized as follows: Section 2 briefly introduces the relevant literature. Section 3 discusses the case studies in research into small and medium sized companies. Section 4 provides some criteria for the evaluation of quality and case studies. Section 5 proposes the design of methodologies for case studies the postgraduate dissertations. Section 6 describes the form of the thesis conducted through case studies, and section 7 concludes the paper.

REVIEW OF LITERATURE

Tellis (1997) notes, “the history of case study research is marked by periods of intense use and periods of disuse. The earliest use of this research form can be traced to Europe, predominantly to France. In the United States the case method was most closely associated with The University of Chicago Department of Sociology. From the early 1900's until 1935, The Chicago School was preeminent in the field and the source of a great deal of the literature”. After a long period of disrepute, in which their use was limited to exploratory studies (Platt 1993, Hamel et al 1993), currently this undergoing a boom. Since the seminal work of Yin (1984) there was extensive discussion related to how research should be conducted using case studies. This debate has been improved by the contributions of Stoecker (1991), Platt (1993), Eisenhardt (1989, 1991) Hamel (1992, 1993), Dyer and Wilkins (1991) among many others. The work of these authors includes both epistemological and practical issues associated with using this research method, and have allowed the elimination of prejudice against them.

Once the epistemological conflict related to the use of case study method in research was overcome, attention has focused on more practical aspects. The question is not yet if the case study allows academic research, but when it is appropriate to choose this methodological alternative. The answer to these questions is mostly found in the work of Yin (1984, 1989, 1994, 2003). Yin's answer to questions like: What is a case study? When you choose this strategy research? What are the criteria to be used to evaluate the quality of research conducted through this method? have influenced many authors both in English (Eisenhardt 1989, Stoecker 1991, Platt 1992, Remenyi, Money, Price and Bannister 2002 Chetty 1996, Tellis 1997 Perry 1998, Halinen, and Törnroos 2005. etc) and Spanish (Bonache 1999, Cepeda 2004, Fong 2003, 2005a, 2005b, 2006, Garcia and Peña 2004, Martínez 2006, Villareal 2007).

This work proposes a specific model for case studies suitable for conducting postgraduate dissertations and capable of fulfilling the criteria established by Yin. The aim is provide a methodological alternative that overcomes some of the difficulties associated with SME-related research, in contexts of insufficient statistical data. It also provides tools to train new researchers in the use of this method.

CASE STUDIES IN RESEARCH INTO SMALL AND MEDIUM SIZED COMPANIES

If companies have one common feature, it is change. Companies must constantly change in response to modifications to the environment, consumer preferences, in technologies etc. In the case of small and medium sized businesses this situation is even more evident as these organizations are frequently created on the basis of innovations that allow taking advantage of specific market situations. Many of these opportunities are unexpected and the survival of these firms depends on their capacity to transform rapidly so they can keep up with the adjustments in their customers' preferences (Fong 2007).

As a consequence of this process of rapid transformation, which does not always last as long as expected, theories are created to explain their behavior and results for businesses easily lose their applicability. So, they must constantly be checked against reality and if necessary adapted, or replaced, in order to incorporate

the anomalies detected (Kuhn 2006). The search for new and better models to explain the firm requires methodologies that can generate the new explanations through contact with the study object. Given the limitations of quantitative approximations for building new theories, case studies are a particularly useful methodology for research on firms.

The usefulness of case studies is not limited to the creation of new theories. In fact, their usefulness in exploring and describing new or little known features of organizations is widely recognized, and are regularly used in business practice. In spite of this, in academic circles, nearly all the attention given to assessment of research using case studies is associated with determining its capacity for proving a hypothesis. In this area, case studies must compete with quantitative methodologies.

There is an urgent need for to provide methodological alternatives to case studies that deal with resource and capacities. This paper seeks to fulfill this need. These types of issues include variables that are incompatible with the logic of quantitative analysis (Fong 2005a). In some instances, it is accepted that the use of quantitative methodologies represents the best option for verifying theories empirically. In these instances, the decision to conduct research through case studies means additional risks and costs for the researcher who must confront the orthodoxy of the academy (Bonache 1999). It is certain that in research related to organizations there is frequently no alternative.

For this reason, in disciplines concerned with businesses a wide discussion has occurred with the aim of establishing suitable guidelines for conducting case studies, and identifying the right criteria for assessing the quality of studies undertaken. A deeper understanding has developed of when it is appropriate to follow this type of research technique and when it is better to choose a more conventional form, how the research project should be conducted and of how the results should be evaluated and interpreted, when these are not conclusive. In this sense Eugenio Moya (2000 p.190) says “And if it is true that following Popper and in the light of positivism we can claim that nature, that reality, never gives our theoretical proposals a full ‘yes’, it should be emphasized equally that it seldom gives us a flat ‘no’”.

CRITERIA FOR THE EVALUATION OF QUALITY AND CASE STUDIES

In contemporary science, the value of a scientific theory is often determined by whether or not it can be proved correct or wrong. This criterion implies that the researcher assumes the risk of making a statement that might be demonstrably wrong. It further implies that the theory validity must be shown by deriving related hypotheses that can be proved true or false when applied to the real world.

A research project is scientific to the extent that its validity can be empirically proved. At the same time, a theory constructed following the appropriate method is plausible as long as it is not empirically demonstrated wrong, implying that more than one explanation of the same phenomenon can be considered scientific. The criterion of “refutability” implies both a recognition that perfect theories do not exist, and the need to constantly submit one’s theories to new tests in order to demonstrate the range of their applicability. These tests allow better comprehension of reality and also to generate profound debates, where the arbitrator, who establishes the quality of a research project, and the supremacy of one explanation over another, is the scientific community (Kuhn 2006, Kirk and Miller 1986).

Many advances in science have been made when ambiguities are detected in points of view that formerly appeared to be clear, or when it is shown that an alternative theory works better than the generally accepted theory. The truth, or what is provisionally accepted as true, is limited by the tolerance of empirical reality as it is by the consensus of the academic community. The scientific community evaluates the scientific character of a research project as a function of the validity of its explanations. In the natural sciences, the scientific character of the research is demonstrated by attending to two rules that guarantee the fulfillment of both criteria. The first is associated with the reliability of the study. In order to insure reliable, the

experience must be reported in a way to make it accessible to other researchers, so they may reproduce the experience and check the results. The second is associated with the validity of an experiment. To be valid the findings must be expressed in terms of the theory from which the contrasted hypotheses derive, using variables of significance to the theory that must be measured in a way that is justified.

In general terms, the reliability of a study is defined as the scope within which a procedure of measurement produces the same result no matter how or where it takes place. Thus the reliability of the study is the extent to which its findings are independent of accidental circumstances, while its validity is the range within which a test gives the correct answer.

The assessment of a research project depends on obtaining simultaneously as much reliability and validity as possible. Authors such as Platt (1993), Hamel (1992, 1993) and Stoeker (1991) point out that the criteria for determining how scientific a study is do not belong to any one methodology, and that case studies have a place among scientific methodologies. For Yin (1984), indeed, the various research methodologies represent alternative strategies depending on the advantages and disadvantages they offer for reaching study objectives.

After reviewing the criteria that are used to evaluate a research project, it is necessary to explain their characteristics in greater depth. Any scientific study should have validity, but there are various ways of qualifying as valid. This matters because the validity of a case should not be evaluated according to the same criteria as a quantitative study. In the latter, the criteria for validity are statistical, while in a case study they are logical. Ignoring this distinction may lead to underestimating the capacities of case studies for generating objective knowledge. In fact, one of the commonest prejudices held against case studies is the consideration that they provide a very small basis for scientific generalization (Yin 1994).

This criticism could be made of a theory developed on the basis of a single experiment. Where the only criteria for the validity of a study are statistical, it makes sense to wonder whether a general explanation can be derived from a single experiment. However, scientific discoveries are rarely based on a single experiment, and they are most commonly developed from a set of events that evaluate the same phenomenon under different conditions.

The same situation is produced in research using case studies, where each of the cases that go to make up the body of knowledge, represents something of an experiment, whose usefulness resides in the observation of variations generated by a change in the phenomenon conditions. It is a mistake to consider the collection of experiments or set of cases that go to make up a study equivalent to using a sample as the objective of both types of research is to broaden and generalize theories and not to enumerate frequencies (i.e. make statistical generalizations). The method of generalization used in case studies is analytical generalization where the results obtained in each case are used as a reference for comparison to other case studies. If two or more cases support the same theory, the empirical base of the theory may be considered correct and the results have been replicated.

The scientific value of all research depends upon a correct use of the chosen methodology, so the explanations have reliability and validity. Case studies are no exception to this rule, and as a methodology, research using case studies has developed various mechanisms and tests to guarantee reliability and validity are achieved. The incorporation of tests to guarantee research quality of case studies, as well as using them to submit hypotheses derived from already existing theories to empirical comparison, has led to the construction the contemporary study of cases.

This development marks a point of inflection for the methodology of case studies, as this methodology has recovered its position of relevance among possible strategies for conducting scientific research. The new

situation is evident in several fields, such as strategic management, where more frequently, reports of case studies are found in specialized publications (Villareal 2007).

Table 1 presents some of the principal tests conducted in contemporary case studies to guarantee that the results fulfill the requirements of scientific research:

Table 1: Tests for Validity in Case Studies

Test	Case Study Tactic	Stage of Research and Applicable Test
<p>Construct validity: To establish the variables that should be studied and the correct operational procedures for the concepts chosen for the study</p> <p>Internal validity: to establish causative relations under certain conditions and their variations in other conditions, in order to distinguish spurious relations</p> <p>External validity: to establish the domain within which the results of the study may be generalized</p> <p>Reliability: to demonstrate to what extent the operations of the study, such as the procedures for obtaining data, can be repeated with the same results for other researchers</p>	<ul style="list-style-type: none"> • Use of multiple sources of evidence (triangulation) • Establish chain of evidence • Have key informants review draft case study report • Do Pattern-matching • Do explanation-building • Address rival explanations • Use logic models • Use theory in single-case-studies • Use of replication logic in multiple case studies • Use case study protocols • Develop case studies databases 	<p>Data collection</p> <p>Data collection</p> <p>Composition</p> <p>Data analysis</p> <p>Data analysis</p> <p>Data analysis</p> <p>Research design</p> <p>Data collection</p> <p>Data collection</p>

Table 1 shows tests for validity and reliability in case studies, as well as tactics for its implementation and the stage of research at which test applied
Source: Yin (1993)

Among the tests noted three, which correspond to the stage of obtaining evidence, are particularly important and may be considered principles for obtaining evidence:

Use Multiple sources of evidence: one of the main strengths of case studies is that in research of this kind many sources of evidence may and should be used. No single source can form the basis for case study research. For the evidence to be considered objective, information from two or more sources must converge in the same set of facts. This also allows data obtained from sources that might be off the beaten track to be validated. Behind this principle is the triangulation of evidence, where it is sought to establish converging lines of research. Which is to say that every finding or conclusion of a case study rests on many sources that are corroborated with each other, thus obtaining greater validity and reliability. Triangulation also makes it possible to address the potential problem of the construction validity (study plan), as the distinct sources provide many measures of the same phenomenon.

Crave a Case Study Databases: this consists of recording and ordering the evidence collected. A clear distinction must be made between the evidence in the database and the research report as such. This separation is important, as the former is a great mass of information duly organized so it can be revised later, while the report is the result of an analysis of the base. The logic guiding the elaboration of the database is that it should be constructed in a way that will allow other researchers to use it to corroborate the evidence incorporated into the research report.

Maintain a Chain of Evidence: this is necessary in order to be able to link the hypotheses directing the study to the evidence supporting them and to the conclusions that may be reached. The chain of evidence allows the logic followed in the elaboration of the case study report to be reconstructed, which makes the study more reliable. Also it is possible by following this chain to reconstruct the context in which the evidence was obtained, as well as the criteria and techniques used in its analysis. Further, it makes it easier to interpret the results and to transfer them into the language in which the hypotheses were formulated.

THE DESIGN OF METHODOLOGIES FOR CASE STUDIES: POSTGRADUATE DISSERTATIONS

The postgraduate (i.e. masters or M Phil) dissertation is a special case in academic research. Even though it lacks the scope and the depth of a PhD thesis, it is a mechanism through which the student is able to demonstrate he or she has a knowledge of the principal theories of the world of his discipline, as well as the capacity to do research and come up with significant results, following a method of conducting research that is accepted by the academic community. Normally it takes between 6 months and a year after the conclusion of the required courses to complete the study program.

Fulfilling these requirements leads the majority of students, with the approval of their thesis directors, to choose subjects of study for which there is a public access data. When analyzed following various strategies of quantitative analysis this allows the hypotheses deduced from the literature that are already in existence to be empirically verified.

Approval for thesis proposals using other than quantitative strategies is more difficult, because of prejudices there might be against case studies. In addition, it is thought that to write a thesis using a case study methodology would require a process of intense work in the field, where the researcher ought to invest a considerable amount of time. Time is necessary to create relations of trust with informants and to observe directly the phenomena being studied. In the case of a dissertation or thesis, adequate time may not be available.

The conflict lies in the fact that many aspects of the firm and several theories associated with it cannot be researched using quantitative techniques. Some aspects of the firm, which represent principal lines of discipline development need methodological approaches like that of case studies. Thus, the case study methodology may not always be the best option for doing a postgraduate thesis, but for some research projects, it may be the only one possible.

This is commonly the case with dissertations where small and medium sized companies are chosen as the subject of investigation. The general factors determining the choice of case studies in conducting firm level research combine with others such as lack of adequate data bases that limits other forms of research (Fong 2007). In the case of Mexico, in spite of the efforts made by a number of institutions, such as the National Institute of Statistics, Geography and Digital Information, INEGI (*Instituto Nacional de Estadística, Geografía e Informática*), to construct statistical information, the possibilities for analyzing small and medium sized firms from a quantitative point of view are still limited. This is complicated by the rapid transformations that occur in the sector, associated with cycles of creation-transformation-mortality, changes in surroundings, etc. These transformations make data bases lose their currency and relevancy rapidly.

In spite of difficulties associated with producing a thesis related to small and medium sized businesses, the interest is increasing. This is not surprising given the economic importance of this sector for Mexico. Currently 99.67% of establishments in the country belong to the micro, small and medium category (De la O, Ramírez, Ayala and Bonilla, 2007 p. 95). Further, the number of students choosing to conduct research into topics related to this object of study has increased, both in programs traditionally related to the study of the firm, and in others where interest in the firm has arisen from a perception of how important its performance is in areas like regional development, public policies, or migration movements.

With the objective of providing a viable option for a postgraduate thesis in the area of small and medium sized firms where the quantitative type of strategy proves inadequate, we present a case study methodology with which the student can demonstrate the skills that are expected of him or her and will

allow him or her to complete the research in the time available to do so. In general terms, this design features three elements that should be taken into account, as they define its nature:

The first is that this design forms part of the dominant tendency in understanding case studies today and it seeks to be compatible with what the tendency has established. From the seminal proposal of Yin (1984), a high level of consensus has been established to the effect that there are five aspects of designing a research plan which are decisive for the quality of a study conducted through the use of the methodology of case studies: 1) The phenomenon to be addressed in the study, 2) Its propositions or hypotheses, 3) Its units of analysis, 4) The logic linking the data to the propositions 5) The criteria for interpreting the findings.

These factors, which define the way in which the case studies methodology should be used, may also be useful for evaluating the quality of a report, as they set out which aspects in particular should be attended (Fong 2003, 2006, Villareal 2007, Yin (1994).

The second element in this kind of design represents a particular type of a general model of case studies. According to Yin (1984) it is a Type 4 design, that is, it is one with many units of analysis are used instead of adopting a holistic approach and is one of varied character (see Table 2). This design allows the student to centre on the specific aspects of the case that are relevant to contrasting hypotheses in the dissertation, and conducting more than one case study, makes it possible to replicate cases, which increases the potential for generalizing from the findings.

Table 2: Case Study Typologies

	Design for One Case	Design for Several Cases
Unit of single or holistic analysis	type 1	type 3
Unit of multiple analysis	type 2	type 4

Table 2 presents typologies Case study, taking into consideration the number of cases that includes the study and whether the focus of each case is holistic or includes several units of analysis. The proposed model this work corresponds to type 4: A study involving multiple cases and explores a range of units in each. Source: Yin (1984)

The third relevant element of this design is that it seeks to reduce the time spent on fieldwork to a minimum. To achieve this every moment dedicated to fieldwork must be fully exploited, which requires the research be prepared in minute detail, especially the empirical part.

The model proposed is based on developing the five case study components mentioned above and the construction of an explicit protocol, which in this case has the function of documenting aspects that will be evaluated in the dissertation. Doing so allows the different cases incorporated into the study to be comparable, and student training to deal with his or her field work in the best and most efficient way possible. As this proposal is for a particular study plan within the general model of case studies, it is worth specifying the particularities of each of its components:

The phenomenon to be addressed in the study. As the objective of the research is to write a thesis, the phenomenon addressed in the study should be susceptible to being handled from a deductive-hypothetical point of view, which means it can be framed in an already existing theory. This implies giving up many of the possibilities offered by the case study methodology, as the use of the case studies might lead to achieving other goals, such as exploring or describing the phenomenon addressed or even building a new theory up about it. But, these are not the usual objectives of a postgraduate thesis. Certainly, some courses accept a thesis describing the situation of a firm as a case study, for didactic purposes, or to solve a real *problem*. In these cases the theory is not explicitly expressed, but it is necessarily present in determining the aspects to be included in the description. In this sense even when the objective of the dissertation is not to prove a hypothesis, it is fundamental that the phenomenon studied be clearly framed in a theory.

Renouncing these potentialities has to do with the goal of writing a thesis and with the time and resources available for doing it. If there is only a limited amount of time for the study, the prior existence of a solid theory provides support and makes completing the task viable.

The propositions or hypotheses of the dissertation. Although in the general model of case studies, the function of the hypothesis is limited to pointing out areas where special attention should be paid, in a dissertation its function is to contribute to verification of a theory. This is achieved when the hypotheses are empirically contrasted, and whether they are accepted or rejected this exercise contributes to increasing the knowledge related to the object of study. In research into small and medium sized companies it is convenient for the general hypotheses derived from the theory or the theories used, to be identified and clearly explained. It is plausible that there might be two or more competing explanations of the object of study and it would therefore be advisable to have various sets of particular alternative hypotheses, with the aim of creating a margin of adjustment to the various situations that may present themselves in the course of the field work.

The units of analysis of the research. The intention behind renouncing holistic focuses is for the researcher to concentrate only on the aspects of the company that are of concern to the hypothesis being examined. This does not imply that an analysis of the context should be omitted, but it does focus the attention and allows the time dedicated to fieldwork to be reduced. It is recommendable that the least possible number of units of analysis be established.

The logic linking the data to the hypothesis of the study. One problem that postgraduate students face when they write their thesis is how to link the theory to reality. Many dissertations have an excellent review of the literature but poor empirical tests and show no clear relation between the evidence presented, the theoretical model used and the objectives of the work. In a quantitative kind of work this tends to be associated with the limitations related to the characteristics of the database, but in research through case studies, it needs to be anticipated and checked.

With this design the student can take advantage of the fact that, having the support of a theory, one can explain both in academic terms and in terms suitable for the field work which evidence is necessary for accepting or rejecting the hypotheses. The student can identify which sources such evidence may be obtained, how it should be triangulated to guarantee its objectivity, which are the scales of measurement, and so on. This leads to the formulation of a protocol, which not only shows the logic uniting the hypothesis to the data collected, but also forms the basis of the dissertation, which the research will result in.

The criteria for interpreting the data obtained. One of the most complicated aspects of research through the use of case studies is interpreting the data. The advantage of the research project design presented here is that as the study is framed in a theory that already exists and as the logic, uniting the evidence to be collected with the proposals of the study is made explicit, it is only possible to interpret the data in the light of the theory being examined.

THE FORM OF THE THESIS CONDUCTED THROUGH CASE STUDIES

As pointed out by Perry (1998, p.797) “a thesis using the case study research methodology can be structured like a traditional theses”. In this section, then, the features of the research protocol that should be incorporated in the final document of the dissertation are presented. The following are the ways in which a study conducted through case studies makes it plain that it fulfills the requirements of objectivity associated with scientific research:

A profile of case studies. Even though the profile is prepared in order to inform the agents related to the investigation of the objectives of the project, of the relevant literature and of the findings expected from

the study, its incorporation in the dissertation also has other functions. The following stand out: to show that the student is familiar with the theories associated with his object of study, that he has been able to discern the state of the art of the subject and what the enigmas still to be resolved directing the field work, and that he is capable of making a contribution to their resolution. Furthermore, as the student is expected to use the instruments and methodologies correctly.

Procedures to be carried out. Both in the protocol and in the dissertation itself, an explicit account of the procedures to be followed as part of the research, is the key factor for determining the quality of the study. Fulfilling this requirement leads to the development of three groups of instruments that are required for conducting a case study.

The first group of instruments designed is to make it easier to obtain the necessary data, in the established form, from the various sources that it is considered appropriate to use and following suitable research techniques. These instruments may include questionnaires for in-depth and semi-structured interviews, records of direct observation, etc. It is also advisable to have alternative devices at hand enable appropriate responses respond to unforeseen situations in the field work.

The second group has to do with preparations to make the process of collecting evidence correct and efficient. It includes instruments whose object is to grant access to key organizations and informants, and to organize the activities that must be engaged in during the collection of evidence.

The third group of instruments has to do with guaranteeing that the study fulfils the three principles of data collection that make it easier for the criteria of scientific objectivity to be fulfilled. Table 3 presents an example of an instrument of this kind, where it may be seen how the steps taken to fulfills the conditions mentioned earlier are organized and made explicit. This instrument also makes it possible to insure that the instruments necessary for the collection of data are available and that the evidence is gathered in the correct sequence. As multiple units of analysis might well be called for, it encourages the best possible form of using the time of the informants by getting all the relevant information in a single interview. This instrument also defines the way in which the base of evidence of the case should be organized.

Case study questions. It is important to be clear that case study questions are not the questions asked of the informants, but those contained in the instruments referred to. They are for the researcher to answer in the light of the evidence collected and its analysis. In a thesis, the questions must give way to formulating hypotheses deduced from the theory that is taken initially as the best answer to the research questions. It is not so much a question of seeking the right answer as verifying that the answer is correct. So what is relevant in a thesis is to contrast the hypotheses of the study empirically. To the extent that their correctness is verified the theory is also validated.

As a question may have many answers, whereas a hypothesis should be accepted or rejected on the basis of well defined criteria, to answer a question may require the establishment and the verification of more than one hypothesis. Table 3 shows how a research question is transformed into a hypothesis.

The design of a research project presented here has been developed with the specific intention of making it easier to write a typical postgraduate dissertation, but there is no doubt that each and every one has its own particularities and these should be taken into account. For this reason I have considered it necessary to explain the methodological criteria used in producing this design, so that the model may be correctly adjusted to the characteristics of each particular thesis. Figure 1 presents the activities considered in this research plan in sequence.

Table 3 Design of the Fieldwork (Question 3)

Research Question	Hypothesis	Evidence / Criterion For Acceptance	Source	Triangulation Mechanism
3. What is the relation between the <i>advertising</i> produced by SMEs, and the reputation of the firm in the relevant milieu?	3) The greater the amount of <i>advertising</i> put out by the company, the greater the amount of information on the company that is perceived in the relevant milieu (Barney, 1991; Basdeo, Smith, Grimm, Rondova and Derfus, 2006). 4) <i>Advertising</i> , as an explicit mechanism for emitting information about the company, does influence in the perception (reputation) among the agents related to the firm (Basdeo, Smith, Grimm, Rondova and Derfus, 2006). 5) <i>Advertising</i> allows a reputation to grow through the provision of information, about the company or about the product (Barney, 1991; Basdeo, Smith, Grimm, Rondova and Derfus, 2006).	Acceptable if there is a management strategy to advertise the company and the products / services it is known for or provides, and there is knowledge of the brand, product, service and its features among related agents. Indicators: Existence of an explicit advertising strategy Expenditure on advertising Recognition of the brand Appreciation of the brand Recognition of the product Appreciation of the product Identification of the company's advertising	Company (Semi-structured interview with members of the management). <u>Market</u> (Interviews with direct clients of the firm, chambers of commerce, competitors, secondary sources, etc., and with other key agents: suppliers, distributors, other collaborators, etc.).	Comparison of the perception of the importance of its advertising by the company, with the perception by the market of the advertising and the influence it has on the decision to buy the reputed product/ service.

Table 3 presents an example of an instrument that allows the study fulfils the three principles of data collection that make it easier for the criteria of scientific objectivity to be fulfilled. Source: Macías López, Gisela (2007)

CONCLUSIONS

This work proposes a research plan suitable for writing a postgraduate thesis in the area of small and medium sized firms, that will at the same time fulfill the criteria of quality established for research using case studies, and make it viable for the thesis to be completed in the given time. This proposal originates in the need to provide an alternative methodological design to those of a quantitative nature, which are traditional in the field of companies. Doing so gives an answer to the increasing demand for doing postgraduate theses on the subject of SMEs that could not be done using the traditional quantitative method.

The design presented here represents one of many variations that a case study may assume and its principal strength is that it makes viable research projects that need to be conducted with few resources and in a limited period of time as tends to be the case with writing a postgraduate thesis. It has been tried in practice with good results, and the model is flexible enough to be adjusted to the needs of each particular project. This gives it great potential for being used within as well as outside the field of small and medium sized business studies.

Amongst its weaknesses are that it has been designed for a particular situation, thereby giving up some of the principal strengths of case studies. Specifically, it limits the potential this methodology has for exploring and going deeper into aspects not considered in the original research plan.

Figure 1: Sequence of Activities to Be undertaken in a Postgraduate Research Project Using Case Studies

<p>THE PHENOMENON ADDRESSED IN THE STUDY</p>	<p style="text-align: center;">ACTIONS TO BE TAKEN IN ANY KIND OF DISSERTATION</p> <ol style="list-style-type: none"> 1. Preliminary analysis of the question to be studied 2. Identifying the theoretical models that apply to the question to be studied 3. Definition of the object of study 4. Choosing the appropriate strategy for making empirical contrasts <hr/> <p style="text-align: center;">CHOICE OF A STRATEGY FOR A CASE STUDY RESEARCH PROJECT: PREPARING THE PROTOCOL</p> <ol style="list-style-type: none"> 5. Choosing the most appropriate theory to frame the object of study 6. Identifying the general hypotheses of the theory chosen 7. Establishing the state of the art of the theory chosen 8. Identifying the enigmas still to be resolved of the theory and the principal paths of development 9. Identifying the general hypotheses of rival theories 10. Establishing the state of the art of the rival theories 11. Identifying enigmas still unresolved of rival theories and the principal paths of their development 12. Joint analysis of the theories concerning the object of study to identify complementary and incompatible aspects 13. Writing up the theoretical part of the thesis
<p>HYPOTHESIS OF THE STUDY</p>	<p style="text-align: center;">DESIGNING THE EMPIRICAL TEST OF THE THESIS</p> <ol style="list-style-type: none"> 14. Identifying and analyzing the context in which the empirical test will be made 15. Elaboration of the research questions 16. Deduction of specific hypotheses from the chosen theory 17. Deduction of specific alternative hypotheses from rival theories 18. Establishing the evidence and the criteria needed for verifying each of the hypotheses (including the alternatives), in particular the criteria for measuring each of the variables involved
<p>THE UNITS OF ANALYSIS</p>	<ol style="list-style-type: none"> 19. Identifying units of analysis adequate for obtaining the relevant empirical evidence 20. Revision of specific literature on the units of analysis
<p>THE LOGIC LINKING DATA TO THE HYPOTHESES</p>	<ol style="list-style-type: none"> 21. Design of the instruments to: Guarantee that the principles for collecting evidence are followed, Obtain the necessary evidence and Organize and control the field work 22. Gathering the evidence 23. Organizing the evidence in data banks 24. Analysis of the evidence
<p>CRITERIA FOR INTERPRETING THE FINDINGS</p>	<ol style="list-style-type: none"> 25. Transcription of the evidence into terms used in the theory 26. Acceptance or rejection of the hypotheses 27. Elaboration of the conclusions and implications of the study 28. Writing up the empirical part of the thesis 29. Revision by key informants <hr/> <p style="text-align: center;">ACTIONS TO BE TAKEN IN ANY KIND OF DISSERTATION:</p> <ol style="list-style-type: none"> 30. Joint revision of the theoretical and empirical parts of the thesis 31. Designing a strategy for presenting the findings 32. Conclusion of the thesis

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