# Research, Knowledge and Method: the purpose and role of MBA dissertation

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#### Abstract

Many MBA programmes require research to be undertaken and the submission of a project report. Analysis of 100 dissertations from one British business school has shown several departures from the expectations of a scientific model. Based on this evidence and on simulations with random numbers, it is concluded that rigid adherence to the conventional scientific model should be toned down and that the potential benefits of several alternative models of research and knowledge creation should be given greater prominence. It is recommended that the assumptions behind research policy in MBA dissertations should be challenged and that this policy should be informed by learning outcomes relevant to students as present or future senior managers.

Keywords: MBA dissertations, Management projects, Management research, Management development

### The problem

Supervisors of projects and dissertations at Masters' levels are often concerned about the nature of guidance that should be given to students on general methodology, sample size and the statistical tests and procedures to be applied. Examiners, in turn, might take a more holistic view of the work submitted and take into account good quality (however defined) in one area to offset uninspiring work in another aspect of the project. Is there a right way for determining what is correct? It could be argued that the needs of the student and the policies of the educational establishment should be the starting point. Often, however, such policies or standards do not appear in regulations or have not been considered in detail, even though several UK-based management schools have endeavoured to address this issue and continue doing so within their quality programmes. "We know a good piece of work when we see it", said a colleague from a 'top end of the market' institution. Yet, for the student, the employer, the supervisor, the examiner, the reader and other stakeholders, any attempt at reducing vagueness would be welcome. Even though not all MBAs require the submission of a dissertation, given that some 7000 students graduate with MBAs from institutions in the UK every year and possibly in excess of 100,000 in other parts of the globe, the volume of effort devoted to research is substantial. Given also that several other Master's level programmes in management, in addition to MBAs, require the submission of a report based on research; this means that the present paper has relevance to a wide population interested in management education. It would be useful to balance the effort invested by students. supervisors and examiners, against the usefulness of the research findings, didactic benefits and learning outcomes resulting from that investment. It is the purpose of this paper to consider the recommendations or guidelines issued to students in one institution, then to examine a sample of dissertations with a view to assessing the extent to which they come close to meeting an assumed template or alternative templates. This comparison will give some measure of the discrepancy, if any, between theory and practice. The investigation will be followed by a series of statistical tests on samples of numbers drawn at random, simulating information collected and analysed by students. It is accepted that other sets of numbers or a different sampling approach might lead to different conclusions. To the extent, however, that a similar analysis of dissertations and simulation does not appear to be easily accessible, it is hoped that the outcomes will open the door for further research in both policy and practice in this area.

### What is expected from dissertations?

The literature on MBA programmes shows a constant search for a balance between workrelated relevance and the intellectual and academic rigour that befits a postgraduate qualification. Aims, curricula and MBA teaching and learning methods are regularly examined and it is within this broad area of discourse that the present paper aims to contribute (Carnall, 1995; MacFarlane, 1995; Baruch & Leeming, 1996; Collett, 1998; Daniels, 1998; Kretovics 1999; Segev et al. 1999). Equally, concern has been expressed (Tranfield & Starkey, 1998) about the role and nature of management research, particularly about its theoretical or practitioner sources and for the need for policy in this area. It is outside the present scope to challenge the overall aims or structure of MBAs: the enquiry will be restricted to the dissertation. Received wisdom accepts that sample size and statistics cannot be considered in isolation from the overall thematic aims of a project and of its contribution to the student's education. At the start of the present project a discussion was held over two periods of one hour each, with a view to exploring assumed aims for a dissertation. Four seasoned academics. experienced in MBA dissertation supervision and examination, both internally to their institutions and as External Examiners, each from a different Britishuniversity, claimed that commonly encountered (written or unwritten) expectations were to:

- add to knowledge by creating new ways of looking at what is around us;
- test existing knowledge as it might apply to new situations;
- **familiarise a student** with the literature in a given area of discourse;
- provide a critical structuring of what is known with a view to addressing a problem;
- help develop analytical skills;
- **be an integrating piece of work**, demonstrating that the student has addressed a management problem competently.

They also agreed that aims would change over time, both within and between institutions

and that such change would reflect a quest for continuous improvement. The literature has not addressed these issues satisfactorily but it is acknowledged that academics in several institutions have concerns about such aims for MBA dissertations and are exploring this area. Rigour, a clear storyline and thinking resulting in a tight design were thought to be expectations from supervisors and examiners alike; it was also clear that a conventional scientific research model was preferred by these four academics.

Statements of aim, such as those highlighted during the discussion, can be found in programme descriptions or other literature available to students. In one institution familiar to the authors, a module on Research Methodology, which used to be part of the MBA programme, showed two aims for that module:

- to help the student to become a more informed reader of research published by others;
- 2. to prepare the student for undertaking the dissertation.

In turn, the dissertation was specified as a substantial piece of work, of about 20 000 words, written with a view to proving or disproving something and thus adding to or creating new knowledge. Although students can think about the project for about 9 months while engaged on other academic work, they have the equivalent of about 10 weeks on a full time basis to complete the dissertation. The project has to fit in one of the following:

- a critical review and discussion of the literature on a specific topic;
- a case study that goes beyond simple description; it has to contain the analysis of hitherto unpublished material;
- testing the application or limitations of some known principle in a particular situation;
- a comparison and contrast between two or more ideas, issues, policies, principles, in two or more situations (countries, industries).

### Concerns about the literature review

It was expected that a critical review of the literature would be developed and that it would be based mostly on work published in academic journals. Findings from other studies would be discussed, particularly for their contribution to theory formation and theory testing. Streams of thought would have to be trailed and major changes to a concept discussed for their theoretical and empirical implications. Understandably, there are no rigid rules on how far back in time one needs to track the literature and rarely is there a pointer to the number of references to be consulted. Not every investigation has to start with Aristotle or Adam Smith but it is expected that the status of managerial thought in the area under investigation would need to be established, i.e. the student has to take an intellectual position within the topic. It is accepted though, that all topics can be subject to fashion. More is likely to be published when a topic is popular, yet this popularity might not. in itself, be a proxy for the importance of the management problem addressed. Editors, editorial boards and referees of journals are themselves likely to be prone to fashion, other things being equal, yet they do determine what gets published merely by acting as gatekeepers. So, would citing 100 papers during the fashionable phase of a topic carry more weight with the examiners than 20 papers during an unfashionable phase? It could be argued that citing 2 or 3 metaanalytical reviews would capture more of the nature of a discourse than a larger stochastically determined citation of papers. Thus, there is some uncertainty, even with the source of material for literature reviews.

### Concerns about the method

The use of grounded theory, on its own, would probably prove inadequate to justify the award of a pass towards the MBA in some institutions. The sufficiency of one case study, or the need for two or more with a view to a comparison, is also unresolved. The practical answer probably lies in the extent to which previously unavailable, pertinent information can be published in its right contextual form. Replication, if undertaken, would be with a view to validation of specific observations rather than for extension of the findings to other settings. Within the context of a competitive economy, it is unlikely that confidential commercial information would be made available for a case study, let alone released for publication. This would also be true where there is the prospect of litigation through disclosure of some contravention (e.g. tax evasion), defamation, or breach of some aspect of confidentiality relating to individuals. Disguising identities is often not advisable in academic work, not only because some of the contextual issues may get lost but also because it reduces significantly the opportunities for independent verification and replication. Concerns about grounded approaches, replication and the disclosure of identities are probably (pure speculation by the authors) among the causes precluding work from being undertaken or published, which would otherwise be found of high quality and relevance to informing management education.

The following is an extract from a set of guidelines that were issued to students in the above-referred institution, shown purely for illustrative purposes:

#### A little theory

An important decision for your dissertation is the determination of sample size. A very small sample (which will probably require you to use non parametric statistics) might be a freak and thus lead you to conclusions that, although true of the sample, do not represent the situation for much of your population. It does, however, have the advantage of low cost and speed. A large sample might allow you to measure a broader range of instances and thus get a better understanding of what is happening in your population (representativeness) but it does cost more to approach and takes much longer to gather the information and possibly carry out the analysis. Sample size and research design are interdependent, so you will have to come back to this topic later on in this module. The design influences both the sample size and sampling approach and, conversely, the realities of the sample that can be approached within the time, cost and other constraints determine which design ought to be chosen. Remember that the theoretical ideal might not be feasible and that, like with most decisions in management, you have to balance pragmatism with idealism. In research, you have to demonstrate that you are aware of the implications of your decisions and to draw the important ones to the attention of your reader. Thus, there is no perfect way for determining sample size in business research,

nor an ideal method for its selection; you should, however, be aware of the advantages and drawbacks of the choice that you are making. The guidelines below serve as a first start; it is imperative that you pay attention to the comments of your supervisor who would be able to help you balance the various considerations. Here are the views of the present writer:

Case studies: carry out at least two so that you have the opportunity to compare findings. Remember, however, that in practice case studies are very difficult to carry out properly in commercial areas due to at least two factors: first, the information needed is often not available, either because it is not recorded or some of the records are inaccessible: second. the information might be considered confidential. It is a common request from companies providing the information to dilute or remove certain data or identities. Managers are concerned about competitors getting hold of key information and about the possibility of legal and other implications. Sometimes companies consider it too costly to allow access to their premises and try to issue researchers with published material; this is most unlikely to help with a case study.

<u>Small scale studies of companies</u>: if you are comparing **two** groups of companies, say in two different industrial sectors or sizes or styles of ownership, try to obtain information from at least 15-20 from **each** group; 25-30 would be safer. If you are comparing **three** different groups of subjects (e.g. companies) try to obtain information from at least 10-15 in **each** group.

<u>Medium scale studies</u>: if you are approaching individual consumers or looking at the records of staff in a personnel department (with a view to contacting individuals), aim for at least 20 in **each** group if you have three groups, or, if you have two groups, aim for at least 25-30 in **each** group.

Larger scale studies, are usually in the form of a survey, where you would be expected to aim for **at least** 75-100 observations. Examples of these would include consumer research or looking at employee records.

Remember, the guidance is: the more questions you need to ask, the smaller the size of the sample that you will be able to manage; the smaller the number of questions to ask, the greater the possibility of taking a large sample. Ask all the questions that are required for your hypothesis but do make sure that you do not ask superfluous questions and thus collect unnecessary data and at the same time take your respondents' valuable time! Although it is not necessary to select a sample much larger than shown in these guidelines, you should be careful not to go below either, otherwise you might encounter several other problems.

Two standard textbooks on research methodology and a statistical package were issued to each student, these being updated annually (for the period covered by the sample these were: Ghauri et al, 1995; Rudestam & Newton, 1992; Steagall & Hale, 1994). A reading list, structured under a number of headings (e.g. questionnaire design, nonparametric statistics), was also issued at the start of the programme. As would be the case with most universities, students also have access to extensive library material on statistics and methodology and to successful past dissertations. An experienced supervisor was acting as a mentor to each student.

### Analysis of a sample of dissertations

### Population

The following analysis compares practice with what would normally be expected if guidelines, as shown earlier, were to be applied by students. The population consisted of successful MBA dissertation submissions at a Business School of a chartered British University in 1995, 1996 and 1997 (the same institution from whence the above extract was taken). The regulations stipulated that 50% marks would attract a pass and 70% would contribute to a distinction. It was not possible to access failed submissions. The dissertation is a mandatory and assessable part of the programme, carrying a weight of one third of all the MBA credits. A typical dissertation would be of 20 000 words, plus references and appendixes.

### The sample

The frame consisted of 507 bound dissertations ranked in alphabetical order by author. The 254<sup>th</sup> dissertation (median) was chosen as the starting point and then every 10<sup>th</sup> item identified to join the sample, with continuous iteration until the pre-set quota of 100 was reached, thus representing about 20% of the dissertations present. Several variables (extracted from the guidelines and from the discussion) were then measured, vielding the information shown below. The present authors have added a qualitative comment to the observations. The reader would appreciate that measurement in some areas was not easy, thus highlighting the role of judgment or personal preference by the examiner when attempting to establish a value. A proportion (5%) of the sample was revisited with a view to verifying the data collected. Audit trailing the records for the 100 dissertations, led to the estimate that there were 29 different dissertation supervisors involved, 27 different internal examiners and 8 additional examiners external to the university. External Examiners were concerned, amongst other things, with comparability of standards between institutions as well as consistency of marking within the institution.

## Methodologies employed in the sample dissertations

| Case Studies | 5  |  |
|--------------|----|--|
| Surveys      | 92 |  |
| Unclear      | 3  |  |

## Table 1: Methodologies employed in the sample dissertations

Comment: adequate justification of the method chosen in 9 instances; insufficient discussion in 77 instances; no explanation in 14. The possible division between exploratory and confirmatory work did not appear to have been perceived by the student; the role of induction and deduction and qualitative or quantitative approaches was not discussed in any of the dissertations in the sample. Yet, there were 19 instances where students combined qualitative and quantitative work as a means of triangulation. Although academic staff of that particular institution would claim that a broad range of methodologies would be acceptable, it was noted that no dissertation in the sample reported on a reflective diary, action learning or action based research. It was not possible to visit published work by these academics, particularly the supervisors and to form a view on the extent to which this pattern reflected their own research practice.

The low incidence of case studies was noted but there was no time available for comparison with statistics from other institutions.

### Approaches used for data collection

| 7<br>78     |
|-------------|
| 78          |
| -           |
| 2           |
| 2           |
| 1           |
| 0           |
| ed for data |
|             |

 Table 2: Approaches used for data

 collection

<u>Comment</u>: all (but one) questionnaires were designed ad hoc; 67 (86% of 78) mentioned pre-testing. Generally acceptable in design but 13 questionnaires (of 78) contained at least one leading question each. Only in one instance was a properly tested instrument from the literature used. Discourse analysis was used in one case but the method of data collection and the tool for analysis were not disclosed.

| Scales used          |                               |  |
|----------------------|-------------------------------|--|
| Nominal              | 10                            |  |
| Ordinal              | 51                            |  |
| Interval             | 4                             |  |
| Combinations         | 28 (mostly ordinal + nominal) |  |
| None mentioned       | 7 (including 5 case studies)  |  |
| Table 3: Scales used |                               |  |

<u>Comment</u>: ordinal scales were on 5-point Likert but in 4 instances these were on 7 and 9 points, which was inappropriate for the sample size, the statistical test used and, more importantly, the nature of the variable being measured. There was no explanation for choosing the boundary points for partitioning ordinal scales. Sample size in the sample dissertations

| Case study<br>Case study<br>Sample size in surveys | 1 (of one case)<br>4 (of 2-6 cases)<br>80.2 mean<br>25 mode |  |
|--|---|--|
|  | 451 highest   |  |
| Table 4: Sample size                               |   |  |

<u>Comment</u>: in 38 instances the justification for the chosen sample size was adequately documented. Only 29 of the 92 survey-based projects defined the population and the sampling frame. In 14 instances the sample was described as random but the method of selection was not adequately documented.

### **Formulation of hypothesis**

There was a statement of hypothesis (or of a research problem) in 86 instances, of which 21 were 'textbook perfect' and another 32 were in acceptable form.

Statistical tests used

| Chi-squared only                    | 17<br>21                           |
|-------------------------------------|------------------------------------|
| Correlation only<br>t-test only     | 37                                 |
| Factor or cluster analysis<br>Anova | 5<br>2                             |
| No tests                            | 9 (including<br>5 case<br>studies) |
| Combination of tests                | 7                                  |

### Table 5: Statistical tests used

<u>Comment</u>: grouping and clustering techniques were used with very small samples. Undefended use of parametric tests on small (n<25) samples in 18 instances; undefended mixing of parametric and nonparametric tests on the same set of data in 11 instances.

### Significance testing

This was evident in 61 cases but could be identified through deduction in another 7 cases.

<u>Comment</u>: level and direction pre-set in 11 instances but justified (explained) in 4 only; choice and reasons for choice of one or twotail testing not explained in 57 instances (the student might claim that the finding was significant but level and direction not be given).

| References reported          |      |  |
|------------------------------|------|--|
| Mean                         | 64.5 |  |
| Mode                         | 72   |  |
| Lowest                       | 8    |  |
| Highest                      | 180  |  |
|                              |      |  |
| Table 6. References reported |      |  |

<u>Comment</u>: appropriate sources were among the references but not used properly (e.g. Ithough an appropriate reference was cited, the most salient contribution of that work towards the message was missed). The most important shortcoming observed was the lack of integration of the literature. Whereas students would source adequate material, the critical pulling together of the ideas and findings in the literature left room for improvement. Although adequacy in this area could be subjective, or prone to collective subjectivity, in only nine out of the 100 dissertations did the present authors consider that there was a tight review of the literature. On technical matters, in 28 out of 100 reference entries examined at random (first 10 reference entries from a sub-sample of 10 dissertations in a row). at least one item was incorrect in each, i.e. the year of publication, publisher or full initials of the author. In three cases where the author's initials were inconsistently cited, tracking down the original source revealed that the student had acted correctly and that the deficiency was in the original material (refereed academic journals). Several different styles of referencing were encountered within each one of the10 dissertations in the sub-sample: these, again. reflected inconsistencies in the source material rather than carelessness by the student. There seems to be room for a common and simple (international) protocol for referencing, particularly in view of increasing access to knowledge bases via electronic means. It is appreciated that some of the comments above bear little influence on the nature of the message in the dissertation; they

are reported because of their deviation from expectations.

### Marks awarded

Out of the sample of 100 dissertations, it was possible to access the marks awarded to 72 of these. A Pearson correlation coefficient was calculated between: sample size, number of references cited, estimated word count and the mark awarded. There was no significant association between these variables, thus leading to the conclusion that 'more' was not necessarily considered 'better' by this particular set of examiners. Although it was not an aim of this project, it was evident (though not tested statistically) that the upper quartile of the marks was awarded mostly to dissertations with the simplest research design and a sample size of about 60. Interestingly, the lowest quartile included dissertations with the better visual appearance. No explanation was sought for this observation but it could be that students attempted to compensate lack of content quality with presentation, or that good quality of presentation allowed the weaker aspects of the project to become more evident.

Since the expectations implied or set in the guidelines were not fully adhered to, should the above observations be interpreted as evidence that the overarching aims required of a dissertation in this institution were not met fully? Notwithstanding the qualitative comments made under each heading, it could be that many of the deviations from the ideal had little impact on the conclusions drawn. In other words, has the student drawn the right conclusions about the problem but based these on intuitive rather than explicit knowledge, analysed under a particular convention? Further, is it relevant to test the learning outcomes from a dissertation and its pedagogical contribution to the student. through measuring performance against some "ideal" research norm or alternative norms?

# Comments on the simulation with random numbers

Some concern was expressed earlier about the determination of a statistical test and the sample size accepted by the student. To address some aspects of this concern, a series of tests was undertaken in the guise of a simulation exercise based on random numbers. Several statistical tests were then applied to these numbers, without regard to their appropriateness for the purpose, as if chosen by poorly informed students. The random numbers were meant to stand for data collected by students. Two large samples and two small samples where randomly selected from a uniform distribution. The large samples consisted of 120 integers in the range 0 to 999 and the small samples 30 integers. For each sample, an integer only appeared once, even though it could be argued that this might not reflect the likely distribution in real situations. The following tests were undertaken:

- Pearson product moment correlation;
- Spearman rank order correlation;
- t-test;
- sign test;
- paired differences test;
- median test;
- tetrachoric correlation;
- Fisher's exact test;
- McNemar change test;
- Phi (coefficient) test;
- chi-squared test.

Generally, the tests supported each other in terms of whether or not there were significant relationships or differences between samples. This observation is in keeping with Andrés et al (1995) in their discussion of a number of statistical tests: "...Less well known are the relationships between a variety of tests designed for apparently distinct situations, which turn out to be equivalent (or give nearly equivalent results) when they are applied in the same context". However, the results of the simulation exercise also suggested that small samples and partitioned samples are more likely to lead to significant differences within and across samples than complete large samples.

### **Discussion and conclusions**

The expectations from dissertations, as shown in the guidelines and other material

issued to students in one particular institution and as expressed by academics in a discussion, support a paradigm akin to the conventional scientific method. The practice, as observed in a sample of dissertations analysed, shows that there are many instances where the expected model is not followed closely. Is there a need to challenge the assumptions behind the requirement for a particular model of analysis and knowledge creation? The observed mismatch between declared intention (method, criteria) and what the sample revealed would suggest that a choice has to be made. Either the expectations should be relaxed and allowed to move further away from the conventional scientific to some other approach, or the requirements need to be applied more rigorously.

A simulation exercise, using random numbers and subjecting these to a series of tests, led to the conclusion that, within the characteristics of that particular sample and the tests undertaken, several instances will occur when a seemingly inappropriate test may lead the student to an acceptable conclusion. The literature on statistics covers adequately the robustness of tests as well as the likely spurious nature of conclusions that may be drawn (Lindsey, 1999). It should be noted that the tests undertaken for this paper covered at least all those encountered in the sample of dissertations (excepting cluster and factor analysis), including those deemed by the present writers to be inappropriate for the purpose. Specific weaknesses highlighted by the results were due to small samples and the indiscriminate partitioning of data. If research is a balance of risks, errors and trade-offs, then, other things being equal, risk appears to be lower when a large sample is used (even if the test applied is not the ideal), as against a test generally considered appropriate but applied to observations from a small sample.

The discourse needs to shift, however, to enquiring about the didactic aims of the dissertation. It is accepted that these aims could be a means of differentiation between providers and thus be specific to an institution or a discipline. It should also be accepted that different students might have different wants, needs and aptitudes, even if attending the same programme. If a dissertation is an

opportunity for students to gain some understanding of what research means and to be exposed to some of the difficulties or pitfalls, then these learning outcomes might have to assume greater priority than concerns of a general epistemological nature. If the aim were to develop a level of expertise that would allow the student to undertake research with a view to creating new knowledge, then closer adherence to conventional interpretations of the scientific and other accepted models would be essential. The value of conclusions drawn from MBA dissertations and, therefore, their contribution to explicit and distributed knowledge, remains untested but in the absence of evidence based on structured analysis, the present authors suspect this contribution not to be of great significance. If this were correct, the argument for considering alternatives or complements to the conventional scientific model would become even more convincing. The nature of management projects suggests that they should not be benchmarked against textbook approaches to epistemology but rather against criteria defined (or to be defined) in the learning outcomes of MBA programmes. Such intentions might, in many respects, make the assessment of work submitted more problematic rather than less but they are likely to help open up a broader range of methods with the possibility of more relevant learning for the student as a future manager. The selection and application of concepts, the ability to direct critical thinking to a situation. the recognition of a logical path to analysis, the need to set a situation within the context of knowledge available at that time, adherence to a storyline and many more aims or processes such as these, all may claim a defensible contribution to developing intellectual discipline in a future manager. In this respect, conceptually thorough work in MBA dissertations is expected to make a meaningful contribution to the education of a manager ... but how would one define, measure and compare? Conversely, adhering to some template guided exclusively by theories of truth would probably not contribute much to the transferable skills and learning outcomes, unless they were aimed at the creation of new knowledge through a

conventional understanding of the scientific

concerns of several management schools

method. The evidence, the literature and the

The International Journal of Management Education

would support the view that neither knowledge creation nor the exclusive use of a conventional scientific model should be the top priority for most MBA students. Furthermore, such benefits as may be generated by MBA dissertations under a conventional model would have to be balanced against other desired gains for the student (such as: innovation, creativity, enterprise, agility, value adding, risk taking, coping with change). Even though based on reflection and evidence relating to a sample from one institution at one particular point in time, it is acknowledged that this problem is of concern to several colleagues; further research and reflection, policy and practice, need to consider some of the issues raised in this paper.

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