Shortcomings in case study research design in master's dissertations at South African universities¹

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ABSTRACT

Case study research entails an in-depth study of contemporary phenomena that is bounded within real life contexts. While it has become popular, particularly in the Social Sciences, it has been plagued by criticisms with regards to rigour. Rigour relates to the trustworthiness of findings, which can be enhanced by, firstly, providing evidence of the rationale used for selecting a case study research design and, secondly, by providing a convincing argument for case selection. Master's degree dissertations should be no exception and should entail the same degree of rigour as other scholarly outputs. In this article, quantitative content analysis was used to analyse 86 master's degree dissertations completed by a case study research design at South African universities during the period 2013-2015. It was found that the majority of the dissertations lacked the following: definitions of case study research design; reference to key authors; rationale for selecting a case study research design; and reference to topologies employed for case selection. This study highlights the methodological issues that arise, the need for more rigour to be demonstrated by master's students and a greater degree of guidance to be provided by supervisors about case study research design. It is recommended that faculties develop specific guidelines to address the gaps regarding case study research design.

Keywords: case study, case selection, rigour, research design, topologies

INTRODUCTION

'Using case studies for research purposes remains one of the most challenging of all social science endeavours' (Yin, 2009: 3). Case study research has become popular amongst qualitative researchers, in particular in the Social Sciences (Starman, 2013). However, it is important that such research is undertaken with rigour which should be evidenced in the research report (Casey, Shaw & Murphy, 2013). To the contrary, Tight (2010) posits that many studies featuring the phrase 'a case study of' in their titles may have been completed with minimal reference to literature on case study research. In this regard, Yin (2009, 2014) postulates that the lack of rigour evidenced in case study research is possibly the result of the scarcity of methodological texts to guide the researcher, when compared to those available for other research strategies.

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Research practice regarding the methodology used in master's degree dissertations, at South African universities, employing a case study research design, has not been previously evaluated. The aim of this study is to explore the rigour of case study research design in master's degree dissertations within the Social Sciences at South African universities. The objectives of the study were to establish the extent to which: in-text reference was made to case study authors; rationale was used for selecting a case study research design; and, criteria were used in case selection. These objectives were developed after taking into consideration the critical elements of case study research, which was informed largely by the contributions of the two foremost writers on case study research design: Yin (2009, 2012, 2014) and Stake (2005). The objectives were also shaped by a previous study (Hyett, Kenny & Dickson-Swift, 2014) with the difference in this study being that master's degree dissertations instead of journal articles were analysed.

This article begins with a literature review of the definitions of case study research design, which is followed by the contextualisation of case study research design as part of the qualitative research approach. The elements of rigour and topologies used for case selection are then discussed. The literature review concludes with a discussion on the teaching of case study research design. This is then followed by a discussion of methodology and an analysis of the data set. Finally, conclusions are reached and recommendations are made.

LITERATURE REVIEW

Two authors, Yin and Stake, have been frequently identified as the principal writers on case study research (Brown, 2008; Baxter & Jack, 2008; Tight, 2010). Yin (2009, 2014) defines case study research design as the in-depth investigation of contemporary phenomena, within a real-life context, by making use of multiple evidentiary sources that converge on the same series of issues. The various other definitions which are similar, include the in-depth study of: contextually bounded phenomena (Knobel & Lankshear, 1999); phenomena, within their real-life context (Gomm, Hammersley & Foster, 2000; Cohen, Manion & Morrison, 2007); and multi-faceted, naturally occurring phenomena that occur in a context (Baxter & Jack, 2008; Jacklin, 2011). The plethora of definitions for case study research design clearly has a number of common elements, which can simply be summarised as being an in-depth study of contemporary phenomena that is bounded within real-life contexts. These definitions resonate more with the qualitative research approach than the quantitative research approach. Hence, Denzin and Lincoln (2011) categorise case study research design as a distinct qualitative research approach.

Drawing upon the contributions of a number of authors, qualitative research can be comprehensively summarised as the collection of data by interacting with selected individuals in their settings (Neil, 2007) to gain insight into their attitudes, behaviour and views (Richie & Lewis, 2003), in such a manner that the idiosyncrasies (Neil, 2007) and complexity (Stake, 2005) of the situation can be grasped, thereby providing a comprehensive perspective of a particular phenomenon (Babbie, 2010). Qualitative research, therefore, demands a high degree of rigour to assert the trustworthiness of findings (Saumure & Given, 2012).

Qualitative researchers, in pursuit of trustworthiness, often seek to satisfy the following four criteria, as identified by Guba (1981): dependability, confirmability, transferability and credibility. Dependability relates to the measure to which the rationale and methodological decisions are reported or provides an audit trail, thereby enabling the study to be replicated (Casey et al., 2013). Confirmability relates to the accuracy and neutrality of the data (Tobin & Begley, 2004). Using reflexivity, the researcher explains how personal biases, philosophical positions, experiences and perspectives have been accounted for (Noble & Smith, 2015). Transferability refers to the extent to which sufficient contextual information is reported in the research report to generalise the findings to other situations (Shenton, 2004).

Credibility refers to how believable findings are (Lincoln & Guba, 1985) or the extent to which the findings are congruent with reality (Merriam, 1998). Case study research design has been frequently debated with regard to its credibility (Hyett et al., 2014). Case study research design undertaken without sufficient detail with regard to rationale may be interpreted as lacking credibility (Morse, 2011). For instance, in their study of 34 articles, in the fields of health, social sciences and anthropology, published in three high impact qualitative methods journals, Hyett et al. (2014) found that in 26 of them, virtually no reference was made of the foremost case study authors and in some cases:

- (i) no justification or rationale was provided for using a case study design
- (ii) there were very few in-text references for case study research design
- (iii) there was an insufficient description of why the case was selected.

There should be some rationale for selecting a case study research design as opposed to other research designs. In this regard, Asimiran & Njie (2014: 37) assert that a case study research design is 'necessitated by the specificity of the case which is informed by its boundedness'. In other words, a case study research design is not by choice on the part of the researcher but is rather dictated by the context within which the phenomenon of interest is bounded. According to Yin (2009), case study research would be most appropriate or should be considered when the focus is on answering 'how' and 'why' questions; the contextual conditions are pertinent to the phenomenon being studied; and the boundaries between the context and phenomenon are unclear. Such a rationale would be in synchrony with the various definitions of case studies discussed earlier.

Case study research design has often been classified according to the following two categories: purpose and type (Asimiran & Njie, 2014). For instance, the three purposes of case study research as described by Yin (2009) are:

- (i) explanatory: where the focus is on seeking to find answers to questions around causal links within real-life phenomena
- (ii) exploratory: to explore situations where the outcomes for the phenomenon are unclear
- (iii) descriptive: used to describe the phenomenon of interest.

The approach selected for a particular study should be aligned to and determined by the research objectives (Yin, 2014), which would map the rest of the study.

Stake (2005) emphasised that the type of case selected depends upon the purpose of the study and the researcher needs to present a convincing argument for case selection (Merriam, 2009). The topologies for case selection evidenced in the literature can be summarised as follows:

- (i) A purposefully or analytically selected case is selected by virtue of being unique, deviant or extreme (Patton, 2002; Yin, 1994; Flyvbjerg, 2011; Gerring, 2008), revelatory (Yin, 1994), critical (Yin, 1994), intense or rich in information (Yin, 1994; Stake, 2005; Patton, 2002), an outlier or key case (Thomas, 2011a).
- (ii) A typical case is representative of the broader set of cases that it is selected from and can be best described as being average or normal (Patton, 2002; Gerring, 2008).

- (iii) An intrinsic case focuses on one specific phenomenon with the source of interest being rarity or uniqueness, the focus of which is on the particulars of one specific phenomenon (Willig, 2008). There may be an intrinsic interest focusing on understanding the case (Johansson, 2003) with the intent to have a better understanding of the case (Stake, 2005) rather than seeking generalisations (Johansson, 2003; Willig, 2008) and the purpose is not to understand abstract constructs, generic phenomena or to build theory (Stake, 2005).
- (iv) An instrumental case involves more general phenomena where the case is not of primary interest and serves a supporting role to facilitate an understanding of phenomena (Stake, 2005; Yin, 2009).

It is apparent that within the topologies mentioned above, there are clear dichotomies that could serve as robust guidelines to case selection, thus contributing to the credibility of the research design. In this study, the extent to which topologies were used as a basis for case selection was evaluated.

Arising from their study, Hyett et al. (2014) contend that case study research design needs to be further developed with regard to issues relating to methodological credibility. It is common practice for teaching, in a research methodology course, to be aligned to a prescribed text, and generalist texts afford only limited opportunity for those master's degree students who wish to pursue their studies via a case study research design. Gerring (2008) noted that case study research continues to receive very little attention in literature pertaining to methodology. Mills, Durepos and Wiebe (2010) found that very few books approach case study research design as the main theme. In this regard, Tight (2010) interrogated many research methodology texts and concluded that some texts barely mention case study research while others devote just a few pages or make a brief reference to it at the end of a chapter.

Due to the minimal attention that is paid to case study research design, Zucker (2009) developed a useful guide for teaching case study design in the research methods curriculum for Humanities and Social Sciences, which focuses on the rationale, data collection, management, analysis and establishing rigour. Thomas's (2011b) publication 'How to do your case study: A guide for students and researchers' which was reviewed by Pierce (2014), was found to be helpful in providing the researcher with a comprehensive and valuable guide. Another useful text, Rule and Vaughn's (2011) book 'Your guide to case study research' which incorporates African and South African contexts and exemplars, was reviewed by Naicker (2013) who found it to provide a stepwise guide to executing case study research.

METHODOLOGY

The lack of rigour evidenced in the journal articles in the study undertaken by Hyett et al. (2014) was used as a point of departure to focus the objectives of this study, by building on what has already been done and by extending the focus to master's degree dissertations. Research practice regarding the methodology used in master's degree dissertations, at South African universities, employing a case study research design, has not been previously evaluated. In this descriptive study, a quantitative methodology was adopted wherein data were collected through documentary analyses (master's degree dissertations). The aim of this study was to explore the rigour of case study research design in master's degree dissertations within the Social Sciences at South African universities.

The South African public higher education landscape currently comprises 26 universities and in 2014, the total student population was 969 165 with about 5.5% of the students registered for master's degrees (Department of Higher Education and Training, 2016). In this study, masters' degree dissertations in the

Social Sciences at South African universities, featuring the phrase 'a case study of' in their titles, were analysed.

According to the Quacquarelli Symonds World rankings, the top four South African universities, based on academic reputation in 2015, were the University of Cape Town (UCT), University of Witwatersrand (WITS), Stellenbosch University (SUN), and the University of Pretoria (UP). Secondary data were accessed through the institutional repository or research space of the identified universities where full-text versions of all completed dissertations were located. The search for the relevant dissertations was executed using the embedded search function in the respective portals, using the keywords 'case study of' in titles for the period 2013 to 2015. The years were selected on the basis of being most recent with completely updated datasets. WITS was excluded from this study, as no dissertations satisfying the search conditions could be located in its institutional repository. Eighty-six master's degree dissertations that met the criterion were identified.

In this study, only the methodology chapter of the dissertations was subjected to quantitative content analysis. Hsieh and Shannon (2005: 12) define content analysis as 'a research method for the interpretation of the content of text data (usually of Keywords or content) through the systematic classification process of coding and identifying themes or patterns'. By using prior research or theory, researchers identify key variables as coding categories (Rose, Spinks & Canhoto, 2015). The coding categories for this study were guided by those used in a previous related study by Hyett et al. (2014), due to a similar phenomenon, which was investigated. For this study, the identified categories included: whether case study research design authors were cited (Table 1), whether the rationale used for employing a case study research design was mentioned (Table 2) and whether topologies of case study were used for case selection (Table 3). These categories have been unpacked in the literature review.

Depending on the manner in which the text in the dissertations was written, the process entailed the extraction of objective content from texts, but in a few other cases, it entailed the extraction of themes that were more latent in the texts. For example, in one case, for the objective content 'contextually bounded', it was stated in a more latent form as 'the problem can only be understood when the circumstances under which the phenomenon manifests itself is considered'. Such latent content was not overlooked and was considered to convey the same information as the objective content for the particular category. However, the contribution of latent content to the data was minimal (two cases in one dissertation from UCT and one case each in three dissertations from SUN).

The limitation of this study was that it was restricted to the analysis of master's degree dissertations in the Social Sciences. Hence, the findings cannot be generalised to other disciplines.

RESULTS AND INTERPRETATION

A total of 86 dissertations were identified for analysis (37 from UCT, 25 from UP and 24 dissertations from SUN). Methodology refers to the framework for the paradigm within which the study is conducted and maps the way in which subject matter can be investigated within a discipline (Samkange, 2012). It would therefore be expected that any study that employed a case study research design, would include a definition or, at the very least, an explanation of what case study research design entails. Figure 1 illustrates the number of dissertations that furnished a definition for case study research design.

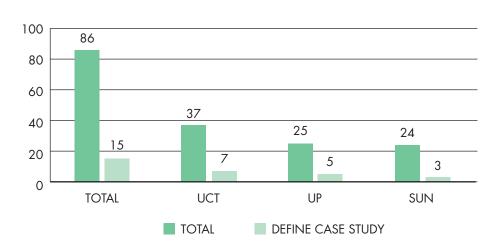


Figure 1:
Dissertations furnishing definitions of case study research design

By way of counting, only 15 (17%) of the dissertations provided a definition for a case study research design. The same pattern was observed at UCT (7 out of 37 or 19%), UP (5 out of 25 or 20%) and SUN (3 out of 24 or 13%). Hence, it was found that the majority of the dissertations did not furnish definitions of a case study research design.

Possible reasons for the lack of rigour in this regard could relate to the issue raised by Yin (2014) regarding the scarcity of methodological texts regarding case study research design. Despite the plethora of definitions for case study research design, their distribution in generalist methodological texts are rather limited and feature in texts that deal specifically with case study research. It is therefore imperative that for those students who intend on pursuing a case study research design, an addendum of support material be made available, including a list of texts that focuses primarily on case study research design. Due to there being a limited number of such texts, the list will be exhaustive and should constitute a 'must read' list. While it could be argued that it is the duty of the student to undertake appropriate readings, the risk of the student overlooking key readings is a real one, given the availability of numerous generalist texts on methodology.

Webb and Kevern (2000) recommend that seminal authors be cited in the methodology. Table 1 provides a summary of the extent to which the primary and secondary authors were cited in the methodology section of the dissertations. The data were extracted by way of counting whether an author was cited in the methodology section of the dissertations. If an author was cited once or more than once, then the author was counted only once.

Table 1: Frequency of citations of primary and secondary authors

Primary authors		Secondary authors							
Yin	Stake	Cohen, Manion & Morrison	Merriam	Leedy & Ormrod	Denzin & Lincoln	Baxter & Jack	Eisenhardt	Gomm, Hammersley & Foster	Knobel & Lankshear LANKSHEAR
27	7	9	8	7	4	4	4	1	2

For the purposes of analysis, the first group of authors (Yin and Stake) have been categorised as the primary authors and the second group as secondary authors in view of the works of the former group being primarily about case study research and the works of the latter group being generalist texts. There were 34 counts of reference to primary authors. There was a total of 39 (45%) citations of secondary authors in the 86 dissertations. Ten dissertations did not cite any of the primary or secondary authors. Hence, it was found that the majority of dissertations did not cite key authors on case study research design.

The norm, in academic writing, is that seminal authors are referenced and the expectation is, therefore, that either primary or secondary or both groups of authors are cited in a study that follows a case study research design. It would therefore appear that the shortcoming that was identified by Hyett et al. (2014) regarding the lack of reference to the foremost authors on case study research, manifests itself in master's degree dissertations in the Social Sciences as well.

When embarking on case study research, there should be some rationale provided for choosing a case study research design over other types of research design and the rationale provided should be in resonance with the various definitions of case study research design. The coding for the rationale for employing a case study research design comprised the dimensions, as indicated in Table 2, which was created by drawing from the elements of the various definitions discussed earlier.

Table 2: Rationale for employing a case study research design

Rationale for a case study research design								
Contextually bounded	Contemporary	Complexity (multifaceted, multi-perspective)	In-depth insight	Natural setting	Multiple sources of evidence			
13	10	10	13	13	13			

The data were extracted by counting whether each dimension was mentioned. If the dimension was mentioned more than once in a dissertation then the count was recorded as 1. In a few cases (5), the dimensions were not stated as per the identified categories but included phrases that were deemed to convey the same information as the dimensions and were counted. Only 13 of the dissertations approached the issue of rationale directly. Hence, it was found that the majority of the dissertations did not make mention of the rationale employed for embarking on a case study research design, therefore undermining the trustworthiness, in particular dependability, of the studies.

Interestingly, despite the small number of the dissertations where a rationale was provided, all of them made reference to the phenomenon under study being contextually bounded, requiring in-depth insight, within a natural setting and drawing upon multiple sources of evidence. Ten of them also made reference to the complexity and contemporariness of the phenomenon. These students demonstrated an exemplary understanding of the rationale needed to be employed in case study research design and, therefore, may be good examples to follow and could be included in teaching research methodology curricula as good exemplars.

When one embarks on a case study research design, it is vital that the research purpose and the reason for case selection be explained. Table 3 illustrates the extent to which the research purpose was considered and topologies of a case study design were employed in case selection.

Table 3:
Research purpose and topologies used for case selection

Purpose			Topologies				
explanatory	exploratory	descriptive	intrinsic	instrumental	purposeful	typical	
4	9	9	0	4	2	0	

Sixty-four (74%) of the dissertations were silent on the issue of the purpose of the study, thereby undermining rigour. Twenty-two of the dissertations gave an account of the purpose of the study. Hence, it was found that the majority of the dissertations did not give an account of the purpose of the study. However, it should be noted that this problem is not necessarily limited to case study research design and is a general problem in postgraduate research-based studies.

Six dissertations made reference to topologies used in case selection, with two being purposely selected, four being selected on the grounds of being instrumental and none were chosen on the grounds of being intrinsic or typical. Eighty (93%) made no reference to topologies used in case study selection. While the literature review was deemed to have saturated the search for topologies used in case selection, it was considered possible that the identified topologies may not have been necessarily exhaustive. However, no other topologies surfaced when the texts of the methodology sections of the dissertations were analysed. While no other topologies were identified, those, which were noted, gave reasons such as 'ease of access to the study site', 'due to economic reasons', 'for convenience'. These were not considered to be valid topologies for case selection as they were viewed as the prioritisation of the needs of the researcher instead of prioritising the case.

It was concluded that the majority of the cases were selected without taking into account criteria for case selection, which undermines the credibility of the research, due to the topologies mentioned in this research or similar or any other topologies not being employed. It is conceivable that researchers may choose cases based on ease of access rather than on the criteria discussed above – an area that warrants further research. Cases are typically accessed through individuals occupying positions of authority within organisations (Bell, 2003; Berg, 2004) and individuals (friends, relatives, colleagues and others) who may vouch for a researcher. Seawright and Gering (2008) posit that researchers tend to lean on practical considerations such as time, money and ease of access. While these may be legitimate factors in case selection, from the researcher's perspective, they do not provide justification for case selection from a methodological perspective.

CONCLUSIONS AND RECOMMENDATIONS

While a dissertation may provide evidence of scholarly achievement, the process involved in producing the dissertation constitutes a socialisation process into the academic community and validates a student's entry into the academic community, setting the stage for future scholarly efforts. The pursuit of a master's degree extends beyond the mere attainment of a qualification and the researcher has to firstly contribute to disciplinary knowledge and, secondly, communicate the contribution to the scholarly community, hence, the need for the research output to be robust and rigorous.

This study concludes that the majority of master's degree dissertations did not define case study research design; did not cite the seminal authors on case study research design; did not provide a rationale for undertaking research by a case study research design; and did not make mention of criteria or topologies employed in selecting cases. This article highlights the shortcomings and challenges in employing a case

study research design and brings into question the credibility of master's degree dissertations undertaken by case study research design. It also highlights the need for more rigour to be demonstrated by master's degree students undertaking research and a greater degree of guidance to be provided by supervisors about case study research design.

The findings of this study of master's dissertations, largely, mirror the findings of the study conducted by Hyett et al. (2014). Causes for concern are that in the latter articles that have met the bar of peer review in high-impact journals were found to be lacking in rigour, and in this study, dissertations that passed the scrutiny of an external examination process were found to be lacking with respect to methodology, thus lending strength to Yin's (2014) claim regarding the lack of rigour in case study research design.

In the short-term, it is recommended that specific guidelines be developed within faculties to address the gaps regarding case study research design. The guidelines should be shaped by giving consideration to the rationale to adopt a case study research design, purpose of the research and criteria used for case selection. A checklist should be developed according to the main headings of rationale, purpose and criteria for case selection. Each main heading could then be further divided in sub-categories against which checks could be made.

The sub-categories for rationale would be contextually bounded, contemporary, complexity, in-depth insight, natural setting and multiple sources of evidence. The sub-categories for purpose would be explanatory, exploratory, and descriptive. The sub-categories for criteria for case selection would be intrinsic, instrumental, purposeful and typical. By having such a check list and ticking off against the appropriate sub-categories, students would then be able to ensure that they have covered the critical elements of case study research design.

Such guidelines could be incorporated into existing research methodology modules and research methodology workshops and they could serve as a readily available guide to students and supervisors. In the long-term, publishers should take note of the shortage of appropriate texts in case study research design and consider commissioning publications to address this gap.

It is also recommended that supervisors make available to their students:

- (i) a list of recommended texts on case study research design (the majority of them already appear in the reference list of this article)
- (ii) exemplars of good case study research design methodology (previous students' efforts)
- (iii) a list of readings (journal articles) pertaining to case study research.

Master's degree dissertations are subject to examination by examiners whose competency to undertake such a task is sanctioned by faculty research committees at universities. It is recommended that in instances where master's degree dissertations are undertaken by case study research design (with the words 'a case study of' in the title), examiners who have expertise in case study research design be appointed. This may require a more focused assessment of the *curriculum vitae* of nominated examiners to ascertain whether the potential examiner has the necessary expertise to undertake the examination.

This study contributes to the field of research methodology by (i) responding to the notion of a deficiency in the understanding of case study research design; (ii) casting light on any shortcomings in research done by case study design; and (iii) suggesting strategies to enhance rigour in case study research design.

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