Business Administration and Business Economics

Pilot Studies: Use and Misuse in South African SME Research

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Abstract: The utilization of pilot study methodology is often not in accordance with methodological principles and intentions. Further, reporting of pilot studies is reported as inadequate. The rise in the use of pilot studies in the social sciences, in particular in business research, prompts an examination of the correctness of the use of pilot study methodology in South African SME research. This article has made use of a qualitative research approach by systematically reviewing the use of pilot studies in South African SME research. Articles have been identified in prominent databases according to set inclusion and exclusion criteria. Accepted articles have then been screened according to a set of identified best practices. Findings reveal that only a small proportion of identified studies follow methodological best practices of piloting methodology. Few studies adequately report on piloting results and even fewer studies adequately describe or select a representative piloting sample. Only half of all identified studies describe the purpose for piloting. The article provides recommendations for researchers and businesses engaging in SME research and intending to utilize pilot studies.

Keywords: pilot study; systematic review; small and medium-sized enterprises; SMEs; South Africa

JEL Classification: M10; I23

1. Introduction

Pilot studies assist researchers in testing and refining methodology and processes employed prior to conducting a full-scale study. Pilot studies do this by providing the researcher with an "opportunity to practice" by allowing the researcher to address not only logistical topics such as the manner in which the study is conducted, but also substantive topics such as refining methodology. (Yin, 2011, p. 37) Sampson (2004, p. 384) notes that pilot studies hold significant benefits for researchers, yet are often misused in their application, and both incorrectly and under-reported. Additionally, few research textbooks and scientific research training cover the topic of pilot studies in sufficient detail, if at all, in order to allow

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researchers to use this tool correctl. (Thabane et al., 2010, p. 2) This apparent lack of information and training on pilot studies can therefore cause researchers to botch the application of pilot study methodology, there by providing opportunity for inefficiencies in the research process to occur. These inefficiencies can be costly, but also hold the potential of jeopardizing the process and results of the full-scale study, which is informed by data derived from pilot studies. Nunes *et al.* (2010, p. 75) describe this under-reporting of pilot studies in qualitative research as surprising, as it causes an "underdevelopment of actionable knowledge".

The correct use of pilot study methodology is therefore paramount, particularly in the social sciences, where already in the early 2000's a steady increase in the use of pilot studies has been noted. (Stebbins, 2001, p. 30) In South Africa, research into small businesses, particularly small and medium-sized enterprises (SMEs), has ballooned due to the country's difficult economic status quo, a high SME failure rate and governmental focus on promoting the growth of the SME sector. In particular, South Africa's diverse demographic profile lends itself to the use of pilot studies, as researchers need to ensure that research participants in reality understand the questions being posed and understand how participants will respond, before a full-scale study is conducted. (Quinlan et al., 2015, p. 279) The aim of this paper is to systematically review the use of pilot studies in South African research, focusing on SMEs. Based on the findings of the systematic review, the paper provides recommendations and guidelines on the correct use and reporting of pilot studies for research on South African SMEs. Findings and literature in this paper therefore provide researchers with comprehensive easy-to-use guidelines, which social scientists can use when planning and performing pilot studies.

2. Literature Review

Reviewing the methodological purpose of pilot studies allows researchers to not only utilize piloting methodology as an appropriate tool, but also allows for a deeper understanding of important piloting principles, which improve effectiveness in application of this type of methodology. The following sections firstly outline the nature of pilot studies and then describe in detail the methodological principles underpinning pilot studies by means of reviewing prominent literature in the field of piloting methodology.

2.1. Nature of Pilot Studies

A pilot study can be defined as "a smaller version of the main study used to test whether the components of the main study can all work together" (Eldridge et al., 2016, p. 2). More in-depth definitions include purpose statements of pilot studies such as being "designed to test the performance characteristics and capabilities of

study designs, measures, procedures, recruitment criteria, and operational strategies". (Moore et al., 2011, p. 332) While the term "pilot study" is commonly used, it is often also referred to as a "feasibility study", "pilot trial", "pilot work" or a "small-scale study". (Arnold et al., 2009, p. 69; Thabane et al., 2010, p. 1; Tickle-Degnen, 2013, p. 171; Eldridge et al., 2016, p. 2) Pilot studies are additionally often referred to as preliminary studies, to be conducted before a main study. (Jankowicz, 2005, p. 213) However, while the term "feasibility study" is the most commonly used synonym for the term "pilot study", the original methodological purpose of a feasibility study differs from that of a pilot study, as a feasibility study aims to gather substantive evidence, in addition to test workability of a proposed research approach, process and instrument. (Powers, 2010, p. 64; McGrath, 2013, p. 282) The primary goal of pilot studies is to test the feasibility or acceptability of study designs or methods (McGrath, 2013, p. 281), before embarking on a full-scale study with potentially disastrous consequences such as invalidating the results of a large study. (Thabane et al., 2010, p. 1) Paradoxically, researchers display a tendency to avoid pilot studies due to time and financial pressures, thereby creating the opportunity for procedural, methodological and structural errors to remain uncovered until the main research is completed, often rendering the results useless. (Crawford in Callahan, 2009) This is especially concerning, considering that the use of pilot studies is rapidly increasing, which can largely be attributed to the rise in quantitative research in the social sciences, requiring refinement in procedure and reduction in possible errors. (Stebbins, 2001, p. 30) Furthermore, pilot studies hold significant value for both qualitative and quantitative research, offering empirical leverag (Nunes et al., 2010, p. 75) Jupp (2006, p. 112) further argues that in the social sciences, "exploratory research has become synonymous with the notion of feasibility study or pilot study".

There, however, seems to still exist confusion with regard to the purpose of pilot studies, with some authors suggesting using pilot studies to develop data collection instruments (Clow & James, 2014, p. 28), while a large number of authors suggest the purpose of pilot studies to be feasibility testing. (Ellram, 1996; Powers, 2010; Thabane et al., 2010) Pilot studies hold a number of benefits such as allowing the researcher to practice interview techniques in order to improve effectiveness of time-restricted interviews. Additionally, a pilot study allows a researcher to streamline techniques for collecting field observation notes. Data analysis techniques can also be practiced and refined (Given, 2008, p. 626). Pilot studies can also allow a researcher to determine whether a chosen sampling frame is relevant or even feasible, thereby also providing a researcher with "an audit trail" (Nunes et al., 2010, p. 75).

2.2. Methodological Principles of Pilot Studies

Pilot studies are often reported on in research papers solely for the purpose of justifying the methods employed such as the overall research design or validity and reliability of the instrument, with practical problems often remaining unreported. The potential that pilot studies hold is therefore underutilized and ignored. (van Teijlingen et al., 2001, p. 289) A number of authors have attempted to define the primary aims and principles of pilot studies, yet there seems to still exist a lack of clear consensus among academics. Jankowicz (2005, p. 250) summarises the purpose of piloting is to establish whether: research design, methodology and approach will answer the research question data collection techniques are suitable in terms of practicality such as participants' ability to respond, viability in analysing large volumes of data, ability to infer from the data instructions and wording of the instrument are understandable responses can be recorded (in case of interviews) data analysis techniques will provide desired information in a presentable format findings are informative in a planned manner of reporting Thabane *et al.* (2010, p. 4) suggest classifying primary aims of conducting pilot studies under the headings *process* (evaluating feasibility of research process), *resources* (assessing potential resource constraints), *management* (determining potential human and data management problems) and *scientific* (assessment of impact on pilot participants). As these guidelines have been developed for use in the medical field, the primary aims and principles of pilot studies can be adapted for the social sciences with guidelines developed by Kelly and Denney. (1969, pp. 48-49) These are formulated under the headings *purpose*, *process*, *outcomes* and *data set*. A summary of principles and intended purpose of pilot studies is outlined in Table 1.

Table 1. Summary of piloting principles

Piloting intentions	**Example**
Purpose	Stated as determining feasibility of full-scale study Pilot results inform decisions for full-scale study
Management	Replicating the main study in terms of population representativeness Test procedural elements such as sampling approach and data analysis technique Test practicality, understandability, usability and recording of data collection instrument Alert research to procedural or conceptual errors and difficulties
Outcomes and Reporting	Reporting includes reason for undertaking pilot and subsequent full-scale study No hypothesis testing Clearly defined goals and objectives

	Pilot results not included in full-scale study data, except where no modifications to methodology and identical sample frame
Data Set	Participants derived from same sample frame as the intended main study Participants not included in the primary, full-scale study Sample size calculation included

Source: Adapted from Thabane et al. (2010, p. 4); Kelly & Denney (1969, pp. 48-49)

Purpose: The overarching purpose of pilot studies is to determine feasibility of a main study, prior to it being conducted. (Hazzi & Maldaon, 2015, p. 52; Kannan & Gowri, 2015, p. 208) It is therefore imperative that a pilot study be conducted before a main study, as the reporting of the results of the pilot study aim to inform decisions in the main study. (Kelly & Denney, 1969, p. 48; McGrath, 2013, p. 281) In addition, pilot studies allow both content and procedure to be refined before pretesting occurs, should pretesting be defined in the research process. (Ellram, 1996) It is important to highlight that, in case study research, piloting may not be used to build theory and to test hypothesis, but rather to use the results of the pilot study to prepare for a potentially larger, future study. (Atkinson & Delamont, 2011, p. 221)

Management: In surveys, pilot testing is strongly recommended and considered a trial run, with the aim of replicating the main study in terms of population representativeness, sampling approach and data analysis technique. A sample is therefore drawn from the target population and analyzed in the same manner as the intended study; however, the results are omitted from final analysis. (Gordon, 2016, p. 129) Pilot studies also aim to not only test, but also trial the use and process of a data collection method such as a survey or interview. The process of applying the data collection instrument, its usability and understandability is tested, as well as the ease and practicality of recording data are trialed. (Jankowicz, 2005, p. 250) The purpose of piloting methodology in interviews is to determine whether questions are answerable and relevant, and further alert the researcher to potential problems prior to data collection for the main study. (Gordon, 2016, p. 41).

Outcomes and Reporting: Reporting of pilot study results should include the reason for undertaking the pilot study, as well as the reasons for pursuing the primary study based on the results of the pilot. In practice, this involves having a clearly defined set of aims and objectives, tailored to each pilot, thereby also ensuring "methodological rigor and scientific validity". (Lancaster et al., 2004, p. 311) Other authors suggest that, in order to achieve and increase participant buy-in into a pilot study, participants should be provided with a written report post-pilot, should such a request be made. (Yin, 2011, p. 37) In addition, sample sizes in pilot studies are generally quite small, thereby not allowing reliable statistical analysis of the results (Thabane et al., 2010, p. 3). Hypothesis testing should be avoided, as the sample

sizes in pilot studies are often not significant enough to form firm conclusions. The null hypothesis for a pilot study should not replicate that of the main study, but should be specified as in the realm of "a definitive main study need not be performed" or "that there are no feasibility problems". (Duan, 2013, p. 3; Kannan & Gowri, 2015, p. 209) Lastly, results from pilot interviews should not be used in final analysis (Gordon, 2016, p. 41), except in cases where the sampling frame and methodology have not been modified post-pilot. (Thabane et al., 2010, p. 6)

Data Set: Participants in a pilot study should be derived from the same sample frame as the intended main study in order to ensure representativeness. (Lancaster et al., 2004, p. 308) A sample size of 10-20% is generally acceptable and considered reasonable for conducting a pilot study (Baker, 1994), with other authors suggesting a minimum of 30 participants for non-statistical conclusions to be derived. (Lancaster et al., 2004, p. 308) While a specific sample size is debatable, it is important for pilot studies to include a sample size calculation in order to justify the chosen sample. (Kannan & Gowri, 2015, p. 209) Participants of pilot studies should not later be included in the primary, full-scale study, as the "decision to proceed with the main study would not be made independently of the results of the pilot study". (Lancaster et al., 2004, p. 311)

3. Research Methodology

The study followed a descriptive research design in the form of employing systematic reviews, aiming to qualitatively assess the manner and correctness of the use of pilot studies in SME research in South Africa. Systematic reviews usually "involve identifying, synthesising and assessing all available evidence, quantitative and/or qualitative, in order to generate a robust, empirically derived answer to a focused research question". (Mallett et al., 2012, p. 445) A systematic review can thus be regarded as a fundamentally different technique from conventional or narrative reviews, in that a systematic review follows predetermined steps in discovering relevant studies in a specific subject field in order to achieve an unbiased search and selection procedure and outcome. (Sánchez-González et al., 2010, p. 116) This technique is usually employed to ensure scientific rigour, objectivity, replicability and completeness of search. (Cassell & Lee, 2011, p. 128) A set of inclusion and exclusion criteria were developed before embarking on the systematic reviews. Inclusion criteria included the study having been performed in South Africa, SMEs included; pilot study methodology employed at some stage of the research and results reported in English. Studies were excluded, which met the following criteria: study conducted outside of South Africa; reported in a language other than English and studies employing a non-business research focus.

3.1. Research Question

The primary research question underpinning the systematic review is: "Do pilot studies utilized in South African SME research achieve methodological correctness of pilot study methodology?" A list of keywords was developed in order to address the research question. Keywords included "pilot study", "pilot studies", "research", "small and medium-sized enterprises", "small, micro and medium-sized enterprises", "SME", "SMME" and "South Africa". Keywords were developed in order to discover studies conducted in South Africa, and of South African organisations, which have utilized pilot study methodology to some extent. The purpose of the study was therefore to deduce not only how frequently pilot studies are utilized in SME research in South Africa, but also if pilot studies are utilized and reported correctly. The study therefore allows guidelines to be developed in the use of pilot studies in SME research, based on observations made in past studies.

3.2. Source Selection

The study utilized a Boolean search by utilizing the keywords as presented in the previous section. Boolean operators were utilized and had to be adapted for use in relevant databases; however, the most frequently used search string was as follows: ("pilot study" OR "pilot studies" OR "feasibility study" OR "feasibility studies" OR "preliminary study" OR "preliminary studies" OR "small-scale study" OR "small-scale studies") AND ("small business" OR "small and medium-sized enterprises" OR "small, micro and medium-sized enterprises" OR "SME" OR "SMME") AND ("South Africa"). The following databases were searched in order to discover relevant studies: Ebscohost; Emerald; Proquest; Springerlink; Sabinet African Electronic Publications (SAePublications), including African Journal Archive and Gale Business Insights: Global. Due to the diverse and wide-ranging nature of the underlying journals in each database, the original Boolean search could not be utilized in its original form for each database, but had to be adapted with the help of an expert librarian, where required. The chosen keywords could appear in the article title, text, abstract or keywords.

3.3. Study Selection

The researchers reviewed all titles, abstracts, text and keywords of each identified article obtained through the database searches. No specific date range was set in order to achieve a comprehensive view of the use of pilot studies. The date ranges utilized followed the minimum and maximum date ranges provided by each database. Articles were screened in terms of the set inclusion and exclusion criteria. Those articles, which met the inclusion criteria, were accepted for full review. Those studies not meeting the inclusion criteria or exhibiting some exclusion criteria were removed from further screening. Articles were excluded from further screening where only abstracts were available, as these could not be reliably analysed. Articles accepted for full review were analyzed according to a set of

assessment criteria developed from pilot study methodology literature. The assessment criteria are presented in the following section.

3.4. Study Quality Assessment

The quality and adherence to pilot study methodology were assessed by means of criteria identified in the literature review. The identified principles and best practices were used to define the ontology of pilot studies. The ontology of pilot studies should meet the following criteria:

Purpose: Stated purpose of the pilot study is to test methodological (including instrument) and procedural feasibility prior to full-scale study.

Management: Piloting involved an effort to imitate and test methodology, instrument or processes to be used in a full-scale study.

Outcomes and reporting: Results of the pilot stated. Reporting of results include items such as construct answerability and relevance. Does the pilot study inform the research of any potential problem prior to full-scale data collection?

Data set: Composition of piloting sample representative of full-scale study sample. Collected data not utilised in primary study.

Each article passing initial screening as described in Section 3.3 was evaluated against the best practice criteria identified above. The criteria thus allow researchers to test correctness of use of the pilot study methodology.

3.5. Data Abstraction

Data of all identified articles was entered into a spreadsheet and summarised in table format. The table contained the following headings: Database Name, Date of Search, Date Range, Articles Discovered, Not Accepted (Irrelevant) Articles and Accepted (Relevant) Articles. Screening results from accepted articles were captured per article in table format according to the criteria identified in Section 3.4. Further analysis of the detailed screening table was then presented in table format.

4. Findings

4.1. Overview of the Research Process

Initial database searches yielded 686 studies being discovered during the first stage of the search. After considering the inclusion and exclusion criteria, 648 studies (94.5%) were excluded from further analysis. Primary reasons for exclusion of the 648 articles ranged from studies being conducted outside of South Africa, SMEs not being included in the study and only abstracts being available. A total of 38 studies (5.5%) were therefore accepted (included) for review. Following a high-

level analysis of the accepted articles, four articles were discarded as they were duplicates of other discovered and accepted (relevant) studies. Therefore, a total of 34 full-text relevant articles (4.96%) were accepted for in-depth review against the set criteria. The results of the initial screening per database are outlined in Table 2.

Table 2. Preliminary results of systematic review

Database	Date of search	Date range	Discovered (Stage 1)	Not Accepted (Stage 2)	Accepted (Stage 2)
Ebscohost	2 September 2016	1886-2016	17	14	3
Emerald	2 September 2016	1898-2016	132	129	3
Springerlink	5 September 2016	1996-2016	80	80	0
Proquest	12 September 2016	1969-2016	169	154	15
Sabinet SAepublications	7 September 2016	1990-2016	264	248	16
Gale Business Insights: Global	12 September 2016	1980-2016	24	23	1
Primary Totals			**686**	**648**	**38**
Less Duplicates					**4**
Net Total					**34**

Source: Author's compilation

4.2. Evaluation of accepted articles

A second, more detailed analysis of each study was performed. An evaluation was performed again the identified criteria. Overall analysis of research findings (Table 3) reveal that of the 34 identified studies, only seven (7) studies (20.6%) adhere to all set methodological best practices of pilot studies. Of the remaining 27 studies, 11 (32.4%) do not adhere to the pilot study methodology at all. The remaining studies adhere to some of the set criteria. Further analysis of each criteria reveals that, in particular, 50% of identified studies clearly state the **purpose** of utilizing pilot study methodology. 41.2% incorrectly state the purpose of piloting, with 8.8% not stating a purpose for piloting at all. Findings from the **management** aspect of the piloting process reveal that 12 of the studies (35.3%) adequately have utilized piloting methodology to imitate or test sampling processes, instruments or study methodology. Seven (7) studies (20.6%) do not describe which aspect of the relevant studies has been tested. The remaining 13 studies (38.2%) utilize pilot study methodology for some purpose other than testing or imitating procedural or methodological aspect of the respective studies. In terms of the statement of **outcomes and reporting of results**, 41.2% of identified studies adequately report outcomes of the pilot. 38.2% of identified studies report the outcomes incorrectly or inadequately, with the remaining 20.6% not reporting results at all. Lastly, an analysis of the included **data set** reveals that 35.3% of identified studies outline details and size of the included data set, with the remainder (64.7%) either not

describing the piloting sample at all (20.6%), or utilizing a sample that is not representative of the population (44.1%), for example drawing a sample from an unrelated population.

Table 3. Summary of systematic review of accepted articles

Criteria adherence	Purpose		Management		Outcomes & Reporting		Data Set	
	#	%	#	%	#	%	#	%
✓	17	50	12	35.3	14	41.2	12	35.3
×	14	41.2	15	44.1	13	38.2	15	44.1
n.d.	3	8.8	7	20.6	7	20.6	7	20.6
	34		**34**		**34**		**34**	
	#	%	Cum. %					
Non-adherence to any criteria	11	32.4	32.4					
Adherence to 1 criteria	6	17.6	50.0					
Adherence to 2 criteria	9	26.5	76.5					
Adherence to 3 criteria	1	2.9	79.4					
Adherence to all criteria	7	20.6	100					
	34	**100**						

Source: Author's compilation

4.3. Discussion of Findings

Given the magnitude of SME research being conducted in South Africa, it is surprising that few studies make use of piloting methodology, particularly when considering the sample sizes involved in SME research. These findings, however, could be attributed to piloting methodology still growing in popularity in research in the social sciences. Therefore, there seems to exist a status quo of underutilization of pilot study methodology in SME research in South Africa in particular.

While pilot study methodology does not seem to be extensively utilized in SME research when considering the findings, it is more concerning that an overview of criteria adherence shows that only a small proportion (20.6%) of studies adhere to the developed criteria. It is further worrying that 32.4% of the identified studies do not adhere to piloting methodology at all, therefore possibly nullifying the piloting efforts of the relevant authors. In terms of identified studies stating the purpose of performing a pilot study, only half (50%) of the studies adequately state and identify the reason for piloting. The remaining studies either do not state the reason for piloting at all (8.8%), or state an inadequate or methodologically incorrect reason (41.2%). This means that a large proportion of the studies perform piloting

for a reason other than testing feasibility of process, methodology or instrument. In particular, four of the studies making reference to pilot methodology explicitly label themselves as being small-scale studies, small exploratory studies, preliminary or case studies, while others merely state that the sample frame was small and the study can "therefore can be viewed as a pilot". A further study labeled itself as a combined pre-test and small-scale exploratory study. The findings of the systematic review seem to confirm some of the concerns raised in recent literature around the incorrect use and reporting of pilot studies. In terms of reporting results of piloting efforts, 20.6% of sampled studies do not report results at all, while 38.2% inadequately report findings, the most common culprit being not reporting the impact the pilot had on the full-scale study instrument, process or methodology. Just under half (41.2%) of identified studies report in some manner on how the pilot has influenced the research, with changes in instrument construct and answerability being the most commonly reported outcomes. This indicates that the majority of studies (58.8%) have utilized time and resources to perform a pilot project, yet have not utilized the opportunity to report the findings adequately, if at all.

An examination of the "management" criteria revealed that only 35.3% of the studies performed and described activities during the pilot that were aimed at testing procedural, methodological or practical elements of the study. Another 44.1% of studies performed activities that were not part of pilot study methodology, most commonly performing items intended for the primary study such as data collection, testing hypothesis or statistically testing reliability and validity of the data collection instrument. The remainder of the studies (20.6%) did not describe which tasks were performed during the piloting phase. Viewed in conjunction with the purpose statements of each pilot, the implementation is concerning as it does not match the intended purpose. This means that tasks have been performed which do not aid in testing feasibility of the primary study, which detracts from the intended impact of the pilot. Further analysis of the reported data set of each identified study shows that only a small proportion (35.3%) of studies have utilized a study sample for the pilot that is reflective of the full-scale study population and reported it as such. Of the studies conducted, 44.1% have used a sample for the pilot that is not representative of the population, in most cases this taking the form of choosing a sample that does not reflect the population characteristics of the full-scale study such as utilizing other academics or postgraduate students to test answerability of the data collection instrument. Another 20.6% of studies do not describe the sample composition at all. None of the identified studies perform a sample size calculation or state the sample representativeness quantitatively. These findings are of concern as choosing a sample substantially different from the target population, or providing inadequate information on the piloting sample characteristics does not adequately prepare

researchers for issues that might be encountered during data collection in the primary study.

5. Conclusion

Pilot studies allow researchers to test feasibility and methodology of a larger study prior to it being conducted. Pilot studies thus carry substantial benefits for researchers and business alike. The rise in the use of pilot methodology in the social sciences is testimony to the importance that pilot studies hold. Pilot studies carry significant importance in research conducted for the business sector, as it allows business to avoid unanticipated errors, which are often costly, thereby improving both efficiency and effectiveness of business research. Further, it allows businesses to decide whether a full-scale project is worth pursuing, thereby providing funding bodies with the necessary data to decide on quantitative feasibility of business research. (Hazzi & Maldaon, 2015, pp. 59-60) The aim of this article was thus to systematically and objectively review the use of pilot studies in SME research in South Africa. The article aimed to assess whether South African studies, which have utilized pilot studies, employed pilot study methodology correctly, and if the results from the conducted pilot studies were adequately reported. The findings of this study show that, in-line with concerns raised in literature, pilot study methodology is, in an overwhelming number of analyzed cases, not utilized and reported appropriately. A large number of studies further do not state the purpose of performing piloting methods. The lack of reporting results of pilot studies creates a gap in literature, as important research findings are not reported on, some of which may hold substantial benefits for other researchers or the scientific community. The majority of identified studies merely make fleeting reference to the results of the pilot, thereby not informing the reader of the benefits and impact the pilot has on the primary study. Also, utilizing a data set that is not representative of the primary study's population defeats the purpose of performing a pilot, as the target population's interpretation and perception of the instrument and process cannot be gauged accurately.

Considering the results of the systematic review, it is recommended that SME researchers in South Africa familiarize themselves with the methodological purpose of pilot studies. Further, the lack of coverage of pilot study methodology in academic research textbooks perpetuates the lack of awareness around this type of methodology. It is therefore recommended that pilot study methodology receives increased and improved coverage, in an easy-to-use format, in popular research textbooks. Also, a need exists to raise awareness with SME researchers in South Africa around the benefits that pilot study methodology holds when applied correctly.

6. Managerial Implications and Recommendations for Future Research

The research clarifies and reiterates the purpose and appropriate application of pilot study research. The findings will assist small business researchers and research institutions to utilize pilot studies more effectively and in conformance with their intended purpose. Further, the research findings promote and simplify the use of pilot studies when testing instruments or new constructs; therefore, mitigating the need for, and tendency of, researchers to perform unnecessary full-scale studies for purposes of instrument or construct validation. The research findings will also assist researchers in preventing common pitfalls in using pilot studies such as not utilizing the findings of pilot studies as lessons and inputs for a full-scale study, as well as preventing the classification of studies with small samples as pilot studies. Lastly, the research aims to promote the use of pilot studies in the social sciences and more importantly in SME research, as pilot studies are most commonly and frequently used in the field of medical research.

Future research could be expanded to include not only investigating SMEs, but also the use of pilot methodology in all South African business research. This would provide a comprehensive overview of piloting efforts in South African business research. Further, it would be of value to investigate changes in usage patterns and correctness of piloting methodology over a defined time period. This would allow researchers to gauge the rate at which piloting methodology is growing in popularity, as well as assess whether researchers are making changes to the manner in which they utilize and report on piloting efforts.

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