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Researching accounting in small business: A critique of research methods and methodologies

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Abstract

More than fifteen years ago, Holmes and Kelly's (1989) seminal article on the methodological weaknesses of small business research was published in *Accounting and Finance*. While the authors evaluated and criticised the contemporaneous, largely survey-based Australian small business research, the points they made concerning sample size and selection, response evaluation and statistical analysis are of more general and continuing relevance to small business research internationally. While their work undoubtedly improved the content and quality of the published Australian research in the genre, as reflected in journals such as *Small Enterprise Research* and *Accounting Forum*, we contend that some of the overseas survey research in small business continues to lack rigour in research design. We use several examples of research studies related to accounting in small business, and published in international refereed journals, to provide a means for revisiting the weaknesses identified by Holmes and Kelly (1989) and for developing an expanded taxonomic framework for assessing the adequacies of the methods and methodology applied in this area of research.

Keywords: small business, research methods, accounting

1. Introduction

The context for this paper, issues in small business research and particularly that subset of the research related to accounting, is presented in the second section of this paper. The methodological weaknesses of small business research identified by Holmes and Kelly (1989) are also reviewed in that section. The research studies chosen as examples for revisiting and further developing Holmes and Kelly's notions are outlined in section 3. Four relatively recent research studies, which utilised survey research techniques, are used to investigate issues of method and methodology in researching accounting in small businesses. These studies are used as information-rich, critical cases for re-examining the research design weaknesses, as well as for deriving an expanded taxonomy for use in assessing the methodology and research designs of future small business survey research. The studies are evaluated in section 4 of this paper and our critique culminates with the presentation of the expanded reference framework in section 5.

2. Common weaknesses of small business research

In terms of quality, theoretical basis and comparability, the 'small business research probably has a worse track record than business and management research generally', often adopting an 'epistemological approach best described as naïve empiricism' (Curran, 1997, p.100). More specifically, Holmes and Kelly (1989, p.29) expressed serious concerns about the methodological weaknesses of 'empirical research concerning small business owner-managers and the role of accountants and accounting information in assisting the conduct of business operations'.

The importance of the interface between small business and practising accountants has long been recognised (see McMahon and Holmes, 1992; Holmes *et al.*, 2003). The broader role of accounting information in small business management, survival and growth has also been extensively researched in Australia and overseas over a lengthy period of time (for reviews see Ray and Hutchinson, 1983; McMahon, 1998a; Holmes *et al.*, 2003). Consequently, this area of small business research is of particular concern. It was, presumably, the motivation for Holmes and Kelly's (1989) focus on the weaknesses of this subset of the literature, and is also a driving factor behind the study reported in the current paper.

The chief shortcomings of survey research of this nature were, according to Holmes and Kelly (1989, p.22), 'inadequate sample size, poor sample selection procedures, inappropriate response evaluation and a paucity of rigorous statistical analysis'.

Subsequent reviews of the weaknesses of small business research have been conducted. McMahon (1999b) drew on Holmes and Kelly's work to provide a ten-year retrospective and critical review of developments in small business research using the reviews and surveys of SME and entrepreneurship research conducted by others. McMahon (1999b) covered the range of SME and entrepreneurship research, and not just that portion of it which relates to accounting. His review is largely restricted to the period from 1981 to 1992. In contrast, Olson *et al.* (2000) focused on the accounting and entrepreneurship research from 1980 to 1999, conducting an original survey of journals, books and other sources, including a review of thirteen scholarly journals in small business, SMEs and entrepreneurship, and sixteen journals in accounting, yielding a sample comprising 34 relevant articles. The work of these reviewers is also applied in conducting our analysis.

3. Small business research exemplars

We used published small business research projects as a basis for revisiting the methodological weaknesses of small business research concerning accounting and for adding to the list of recognised weaknesses in order to develop an expanded small business research evaluation framework. In selecting the research studies forming the basis of our revisitation we used an information-rich, critical case criterion, choosing articles from refereed international journals which demonstrate the perpetuation of weaknesses as identified by Holmes and Kelly. We also sought research articles which were directly relevant within the original context of the criticisms levelled by Holmes and Kelly; that is, survey-based research concerning the relationship between small business owner-managers, accountants and accounting information. Further, consistent with the approach to sampling articles adopted by Olson *et al.* (2000), we chose articles from both mainstream accounting and specialist small business journals. None of the articles we examined were previously reviewed by either McMahon (1999b) or Olson *et al.*, (2000).

The research articles constituting our ‘critical cases’ were:

- An US study by Hite (1998), our primary critical case, published in the American Accounting Association’s journal *Behavioral Research in Accounting*;
- A US study by Rue and Ibrahim (1998), published in the *Journal of Small Business Management*;
- A UK study by Gorton (1999) published in the *Journal of Financial Management & Analysis*; and,
- A US study by Young (2002) appearing in the *Journal of Developmental Entrepreneurship*.

The aim of Hite’s (1998, p.161) research, our primary critical case, was ‘to examine the influence of tax regulations on the financial reporting decisions of small businesses’ (p.161). On the basis of a quasi-experiment conducted using a survey questionnaire, Hite concluded that small business owner-managers who prepare financial statements using Generally Accepted Accounting Principles (GAAP) may be more likely to capitalise ambiguous expenditures than those who do not use GAAP. Among those who use GAAP financial statements, owner-managers with controlling interests in the business are more likely to expense rather than capitalise ambiguous expenditures, while minority owners are less likely to expense. In addition, GAAP users who are minority owners are more likely than majority owners to make financial reporting decisions that are consistent with tax reporting rules (p.159).

In the second article studied, Rue and Ibrahim (1998, p.24) attempted to determine whether small businesses prepare formal strategic plans, and if so, the extent to which such plans included quantifiable objectives, budgets and procedures for dealing with variances between planned and actual performance. The study also examined links between the sophistication of planning and organizational performance. The main findings of this survey research were that the level of planning sophistication is associated with sales growth and there is also a relationship between planning and small business’ performance relative to industry (p.29).

Gorton (1999, p.56) investigated the performance of small business using a range of ‘appropriate’ financial management techniques compared to the performance of non-adopters of those techniques. ‘Appropriate’ techniques included pre-start-up financial plans, use of

computerised accounting systems and use of external advisors, such as accountants (pp.58-59). The survey results suggested links between high growth and firms having financial plans as 'part of their preparations for start-up' (p.61) or employing computerised accounting systems.

The final study selected (Young, 2002) concerned the participation of minority-owned small businesses in assistance programs and the types of assistance and information sources used compared to non-minorities. A chief finding of the survey was that accountants were major providers of assistance and information to non-minority and minority-owned small businesses, although their services were not used significantly differently by the two groups.¹

4. Assessment of the small business research studies

The purpose of our review of these four articles was not to question the ultimate desirability of the research topics investigated, rather, we questioned the validity of the findings of these studies and considered whether:

1. the sample size and selection, response evaluation, and statistical analyses applied were appropriate;
2. these procedures were relevant specifically in light of the research question and hypotheses posed by the authors;
3. the underlying theoretical framework and/or analytical arguments offered by the authors were appropriate to establishing the relationships between the variables investigated; and consequently,
4. the research design was adequate in order to generalise the empirical results to broader settings.

4.1 Sampling issues

McMahon's (1999b) review highlighted a range of unsatisfactory sampling procedures in small business research, including use of small, non-representative, non-random and/or poorly selected samples. There are several obvious deficiencies apparent in the four research studies assessed in the current paper in terms of sample selection, including weaknesses in delineating the population of interest, inattention to random selection, and lack of consideration of the sufficiency of sample size.

¹ Note that Young (2002) used the terms minority and non-minority in reference to the ethnicity and gender of small business owners, whereas Hite (1998) used the terms in relation to ownership share.

In the Hite (1998, p.169) study, a 'nationwide sample was purchased', from a commercial service which maintained a master list of over 2 million small businesses. From this list a selection of 3,000 businesses was used and 1,000 of these were mailed questionnaires. This method would seem to provide little control over either the content or quality of the sample selected, especially considering that the initial sample of 3,000 was selected by the database supplier using a process which 'was described as random' (Hite 1998, p.169). It is not entirely clear if the population database accessed, and the sample subsequently drawn from it, accords with any accepted qualitative or quantitative definitions of 'small business'. Hite merely referred to her study as a US survey in which 'small business managers from all over the country participated' (p.169). In a footnote, Hite (p.172) attempted to compare respondents' details to IRS and US Bureau of Census data on a number of demographic characteristics of small businesses (e.g. median revenues and form of ownership). She noted (p.172) that respondents' characteristics were markedly different to the government-sourced data, but then failed to statistically assess response-population bias; a technique useful in determining the representativeness of a survey sample (see Wallace and Mellor, 1988). The main issue is, therefore, whether the population and the sample selected by Hite actually relate to small businesses.

This lack of control over selection, together with the possibility that the provider produced a non-random sample, suggests that a high level of bias may have been introduced into the sample. Research of the general population of small businesses also poses significant problems for researchers because of the size of that population. It is generally not possible to survey all small businesses, or even to survey a representative sample of such businesses on a 'nationwide' basis (as in Hite, 1998). Even in the Australian studies criticised by Holmes and Kelly (1989), researchers, for the most part, attempted to restrict samples (and thus generalisations of results based on those samples) to particular States. As Olson *et al.* (2000, p.6) reported, accounting and small business studies with an empirical setting usually focus on multiple industries (as did all four of the studies we examined) and while a large number of studies can be classified as having generic settings, 'this however does not mean, according to our understanding, that these studies present generic results'. A more useful, and arguably more common approach to sample selection, is to sample a defined sub-set of small businesses (see Boomgard *et al.*, 1992; Hendrickson and Psarouthakis, 1992), perhaps using saturation surveying methodology (see Turner, 1989), or some other variety of stratified or

cluster sampling, according to city, region or industry (see Holmes, 1987). One of the cases we examined (Young, 2002) used stratified random sampling according to industry.

One of our selected articles (Rue and Ibrahim, 1998) featured a sample restricted to the US state of Georgia, and the discussion of the findings of this research carried a caveat that replication of the study in other regions of the country was advisable. Another study (Young, 2002), while also surveying small business owner-managers in one US state, nevertheless included generalisation of the results to the entire nation. Our final study (Gorton, 1999) focused on five English counties, divided into two groups, and the author implicitly generalised the results to the whole country in stating that replication on an international level was the next step.

Holmes and Kelly (1989) expressed a particular concern with the limited size of the samples used in the small business research they reviewed. In the case of the Hite (1998) study that we reviewed, an initial sample of 1,000 was selected from a population database of 2 million. In Rue and Ibrahim (1998) 1,153 were sampled from databases of undisclosed sizes. In Gorton (1999) 1,150 questionnaires were despatched, again with no details disclosed as to the size of the database, and similarly for Young (2002) although with 10,000 questionnaires mailed.

In all cases the size of the *underlying* population of interest is either indeterminate or undisclosed. Further, none of the researchers discussed the statistical adequacy of the samples drawn given the sizes of the databases accessed or estimates of the broader, underlying populations. The question is whether these samples possess the degree of representativeness needed to draw valid and reliable statistical inferences and make generalisations. There are several issues important in determining sample size, such as representativeness, population size and nature of the study; equally important considerations being whether there are any biases inherent in the sample (Ryan, Scapens and Theobald, 2002), or biases in the characteristics of respondents.

4.2 Response rate and evaluation of non-response

A poor response rate to a survey questionnaire is not necessarily cause for concern unless there is an absence of appropriate testing for non-response bias. McMahon (1999b) found a history of small business studies based on surveys with poor response rates and which exhibited failure to adequately test for non-response bias.

The useable response rate to Hite's (1998) survey, while reported as 28% in the published account, effectively amounted to only 8% based on initial sample size, since 149 of the 229 responses received (65.1%) were not used in testing three of the four hypotheses posed. The response rate to the Rue and Ibrahim (1998) questionnaire was 23.7%. Response rates for Gorton (1999) and Young (2002) were 33.1% and 6.9%, respectively.

While Hite (1998, p.169) 'anticipated' a low response rate and provided footnoted examples of low response rates to other small business studies, it appears that no attempt was made to adjust for anticipated non-response in determining sample size. Gorton (1999, p.58) provided the same justification and noted that the response rate achieved 'compares favourably against similar postal survey questionnaires of SMEs'. Justification for the adequacy of response rates, based simply on a comparison with the response rates achieved for other studies, is largely meaningless.

When potential participants in a survey do not respond, results can be biased if the characteristics of non-respondents differ from those of respondents. Such questionnaire non-response bias can have a detrimental affect on external validity and generalisability and so needs to be identified prior to survey analysis.

Where the overall response rate is low, as in Hite (1998), Rue and Ibrahim (1998) and Gorton (1999), and particularly in Young (2002), a test for non-response bias is warranted. There is no mention of any non-response bias testing in Rue and Ibrahim (1998) or in Gorton (1999).

Hite (1998, p.170) noted that 'the dependent and demographic variables were analyzed for early-late response effects' and did not significantly vary. The Oppenheim method (1966) therefore appears to have been used. While Hite's report indicates a lack of systematic non-response bias, it must be remembered that the Oppenheim method is based on the assumption that late respondents and non-respondents share similar characteristics. Beyond this limitation, given concerns about the population of interest, and the actual randomness of selection of the initial sample of organisations purchased from the database provider, the bias test conducted by Hite is deficient. The existence of non-response bias in this study is more ably demonstrated by the inability of Hite to reconcile the composition of the sample with population characteristics disclosed in the government databases consulted. For example, Hite (1998, p.171) observed that 29% of respondents to her study were in the retail industry and footnoted (p.172) that US Census Bureau data reveals 16% of small businesses are in the retailing sector. Similarly, while 1992 Census data shows 87% of such

firms are sole proprietorships, and equivalent US IRS data discloses 73% are organisations of this form, only 33% of those Hite surveyed were sole proprietorships.

By way of contrast, Young (2002) tested for the existence of non-response bias by conducting a range of focus group interviews, finding that interviewees shared similar characteristics to survey questionnaire respondents. The Oppenheim method was also applied in this study to test for differences between initial and final respondents and no differences were revealed.

4.3 Reliability and validity

Beyond the concerns of the number of respondents to a survey are issues germane to the survey questionnaire itself. In Rue and Ibrahim (1998) there is no mention of any reliability and validity analyses of the questionnaire. Gorton (1999) also makes no reference to tests of reliability or validity. In Hite's (1998) study, the only reference to such analyses was that 'the instrument was pre-tested at a local entrepreneur's conference and an attempt made to clarify the instrument as much as possible' (p.169). Similarly, Young (2002, p.433) pre-tested the questionnaire using a focus group and obtained 'input' from Small Business Development Centers 'to ensure survey instrument content validity'. While these efforts constitute pilot testing, there is no indication in the report of either study, nor in Rue and Ibrahim (1998) or Gorton (1999), of the use of any test-retest reliability processes, correlational reliability tests, factor analyses, or calculation of Cronbach's alpha coefficient; all methods commonly used to assess instrument reliability in survey-based research in accounting and other fields (Brownell, 1995, p.49). Such reliability analyses are important in providing assurance that an instrument possesses internal consistency, that there is convergent validity among items within it, and conceptual distinctiveness and discriminant validity between instruments.

4.4 Statistical tests and statistical inferences

A weakness of the small business studies reviewed by Holmes and Kelly (1989) was the lack of rigorous statistical analyses applied. Similarly, McMahon (1999b) in his survey of the methodological problems of published small business research noted that reporting of results has been largely descriptive. While the research studies we reviewed appear to have advanced to some extent from this position, there remain obvious shortcomings.

Hite (1998) developed and tested four hypotheses concerning the propensity of majority and minority small business owner-managers to use GAAP or tax reporting rules in

capitalisation decision scenarios and applied ANOVA/ANCOVA for the statistical analysis of data, with revenue used as the covariate (as a proxy for organisation size). Rue and Ibrahim (1998) used chi-square analysis to investigate the relationship between planning sophistication and performance, according to industry, and ANOVA to test for relationships between sales growth and three categories relating to the level of planning sophistication. In the prelude to his paper Gorton (1999) cited McMahon and Holmes' (1991) discussion of the lack of sophisticated statistical analysis of results in the small business financial management literature. Paradoxically, a large part of Gorton's (1999) paper is concerned with reporting only counts and percentages relating to the range of variables for which data were collected, using only four of these numerous variables to conduct log-linear and chi-square analyses to search for relationships between financial management techniques, and growth and regional location. Young (2002) provided descriptive statistics (percentages, means and standard deviations) for a large range of variables, supplemented by analysis of between-group differences using *t*-tests.

McMahon (1999b) concluded that where more sophisticated statistical techniques have been employed in the small business research there is generally disregard for the circumstances in which the types of analysis can be validly applied. Looking at the Hite (1998) and Rue and Ibrahim (1998) research, while the ANOVA technique is fairly robust with regard to violation of a normal distribution of subgroup means (Tabachnick and Fidell, 1996, p.71) and violation of homogeneity of variances, it is prudent to conduct assumption tests prior to further analysis of data. There is no indication in either research study that variables, including Hite's (1998) revenue covariate, were subjected to any assumption testing. While a statistical test may be appropriate given the data collected, if the data violates the assumptions upon which the test is based, the validity of the results is weakened. A similar criticism can be made of Young's (2002) study. The use of *t*-tests to examine the significance of differences in the means scores on a range of variables for non-minority and minority small business owner-managers presupposes a test for equality of variances. Whether or not this test was conducted is undisclosed. By comparison, the log-linear technique applied in Gorton (1999) is extremely flexible with respect to data distributions, and so the absence of mention of assumption testing in this paper is justifiable.

4.5 Research questions and research methods

A fundamental axiom of ‘good’ research, argued in most research methods textbooks, is that the methods chosen for use in a study should be driven by, and appropriate to, the research questions posed (Abernethy *et al.*, 1999). Consistent with criticisms levelled at the small business entrepreneurship research concerning lack of explicit research purpose (see, Low and MacMillan, 1988), there appears to be no clear research question investigated by Hite (1998). Rather, ‘the motivation for this study is derived from the lack of information on the friction between financial and tax reporting for small businesses’ and ‘the results of this study will be informative to those interested in the financial reporting decisions of small businesses’ (p.160).

These ‘aims’ seem to be exploratory. Similarly, Rue and Ibrahim (1998, p.27) sought to ‘explore’ whether a relationship existed between the extent of planning and organisation performance, and Young (2002, p.443) specifically noted her research ‘was designed to be exploratory in nature’ Gorton (1999, p.62) indirectly noted that his research was ‘exploratory’. While exploratory research in small business is not valueless, there is the suggestion that there has been too much focus on this type of research (see McMahon, 1999b).

Despite the apparent exploratory nature of Hite’s (1998) research, experimental scenarios, as used by Hite, are more generally concerned with providing causal explanations. The internal and external validity of the Hite study would likely have been improved through the controlled conditions offered by the true experiment. Alternatively, accepting the more exploratory nature of the four research studies examined, the case study method may have provided better information on the accounting and small business topics addressed. The case method generally offers better insight into the constructs and variables involved in making decisions, improving naturalness, data quality and richness, control of context, and internal validity (Birnberg, Shields and Young, 1990; Judd, Smith and Kidder, 1991). The empirical small business research is heavily survey-oriented (see Ratnatunga and Romano, 1997; Coviello and McAuley, 1999), and the case method, offering more potential for generating consistent results and theory, has been underutilised (see Chetty, 1996; McMahon 1999b), but appears to be gaining popularity (see Olson *et al.*, 2000)

4.6 Theoretical framework

Within the wider context of an investigation of the weaknesses of the methodology of small business research, are the underlying conceptual or theoretical frameworks. In general, the small business research 'has been characterized as a loose collection of ideas rather than a coherent structure with a shared intellectual paradigm' (Ratnatunga and Romano, 1997, p.197); there has been a lack of conceptual rigour and theoretical basis to much of the work (McMahon, 1999b) and 'a very large proportion of the studies has no explicit ... theoretical framework' (Olson *et al.*, 2000, p.6). Theoretical frameworks and research paradigms provide the nomological basis of research, imply particular ontological and epistemological perspectives, and posit relevance for particular variables, all of which inform methodology. Analytical or logical reasoning and assumption making to derive hypotheses from extant theory also possess methodological peculiarities.

Hite's research appears to be grounded in positive accounting research and the agency theory literature supporting it (see Watts and Zimmerman, 1986) in explaining how tax consequences can affect choice of accounting methods. The problem is that the income smoothing and earnings management literature reported in Hite (1998, pp.161-168) is derived from research in large organisations. Having examined this literature, Hite (1998, p.162) then incongruously stated that 'the direct applicability of positive accounting research to small businesses is less feasible'. This is not surprising since a fundamental axiom in the field is that small businesses are not simply scaled-down versions of large businesses (Welsh and White, 1981). Small businesses possess unique strengths and weaknesses and face distinctive opportunities and challenges relative to larger enterprises. Hite's (1998) literature review, and the conceptual framework developed from it, completely ignores a burgeoning area of the theoretical and research literature on small business concerning agency theory (see Landstrom, 1992; Stanger, 1992; Cameron and Massey, 1997; Holmes *et al.*, 2003) and financial reporting and accounting methods choice (for reviews see, McMahon *et al.*, 1994; McMahon, 1998a; Holmes *et al.*, 2003). Lack of familiarity with this literature is demonstrated in the author's (Hite, 1998) concluding claim that 'this study is the first to identify links between financial and tax-reporting decisions for small businesses'.

The other three papers we examined (Rue and Ibrahim, 1998; Gorton, 1999; Young, 2002) are essentially atheoretic, although Rude and Ibrahim (1998) noted that an established theory does not yet exist to support work in their topic area.

Explicitly linked to the theoretical framework underpinning research studies are the concepts and variables to be investigated. The studies we examined featured several poorly conceptualised or operationalised variables. For example, Rue and Ibrahim (1998, p.27) asked respondents to 'describe their firms' performance relative to industry averages over the past three years'. It is apparent in the section of that paper which presents the discussion of the results that this related to '*perceived* performance relative to the industry' (p.29, with emphasis added) and since this was a generic, multi-industry study, no benchmarks were provided to respondents in order to make these comparisons. Interestingly, while a statistically significant association between planning sophistication and *perceived* performance relative to industry was found, 'no significant relationship was found with respect to return on investment' (p.29). The authors provided a number of possible explanations for these contradictory results (pp.29-30), but failed to acknowledge the possibility that the contradiction may well have occurred because of the ill-conceived and inappropriately measured 'performance relative to industry' variable. The only question they raised about this variable was whether firms with performance below the industry average were under-represented in the study, together with a motherhood statement that 'self reported measures are susceptible to a number of problems' (p.30).

In terms of assumptions and variables, there are related deficiencies in Hite's (1998) study, including the use of GAAP as a proxy measure for the accounting expertise of owner-managers. In judging accounting expertise, a better proxy variable might be the educational background and experience of the person preparing the financial statements. A novice owner-manager using GAAP would be unlikely to have the accounting expertise necessary to manipulate and maximise the reported earnings or to recognise the alternative consequences of applying GAAP versus tax reporting rules, unless guided by a professional accountant. There are also deficiencies in the way in which the experimental scenarios are expressed in the questionnaire. For example, Hite (1998, p.170) asked participants about the financial reporting decisions they would want to make, rather than what decisions they actually or usually make. Thus the results derived from responses to the questions may provide a normative view of owner-managers decision preferences, rather than a descriptive one of their decision practices. This problem is similar to the weakness (discussed earlier) in the Rue and

Ibrahim (1998) study concerning perceived performance relative to industry averages. Further, no effort appears to have been made by Hite (1998) to ascertain whether the respondents (owner-managers) were actually the financial reporting decision-makers. Hite (1998, p.176) expressed doubts on this point, admitting that:

the surveys were sent to owner-managers of small businesses assuming that these were the individuals who make tax and financial reporting decisions for their businesses. The results are relevant if these individuals are making decisions.

Obviously then, if other than owner-managers make financial reporting decisions, the results and relationships established on the basis of their responses are meaningless.

A further problematic assumption of Hite (1998) concerns the use of the organisation size (revenue) covariate, which was statistically significant, but the use of which is weakly justified. Inclusion of the covariate is based on the researcher's assertion that 'size of the business may influence the use of GAAP', because positive accounting theory (Watts and Zimmerman, 1986) suggests organisation size leads to expensing of items to avoid political scrutiny, although 'small businesses ... probably are not as concerned with political costs as are large firms' (Hite, 1998, p.164). Where organisation size has been perceived as important in exploring or explaining accounting or management differentials in small businesses, many researchers have instead focussed on firms of a particular size, rather than analysing small organisations of all sizes. This type of focus is apparent in the microfirm and family business research (see Churchill and Hatten, 1997; Reid and Smith, 2000). The small business research literature also includes examples of potentially more useful explanatory variables for accounting and financial reporting choice, related to whether businesses are of the traditional form or are more entrepreneurial in character (see for reviews, Petty and Bygrave, 1993; McMahan and Davies, 1994; Holmes *et al.*, 2003). The traits of owner-managers, a key grouping variable in Hite's (1998) research, as well as the operations and characteristics of entrepreneurial (growth) firms, are also distinct from those of traditional firms (see Holmes and Zimmer, 1994). Another common variable potentially useful in explaining or predicting accounting choice in small firms is the life cycle stage of the business (see for reviews, McMahan, 1998b). Such variables were not considered, either explicitly or implicitly, in Hite's (1998) research.

In addition to problems related to the inclusion or non-inclusion of particular variables in Hite's study, we also question the basis of a number of the assumptions made. For

example, Hite (1998, p.163) assumes that 'external financing is not a pressing problem for small businesses'. She argues that minority owner-managers have more motivation to increase financial accounting profits to satisfy majority co-owners than to satisfy lenders, and that majority co-owners will not be motivated to maximise profits in order to satisfy lenders. There is limited evidence to support these arguments. The arguments are not justified either by reference to the positive accounting literature (forming the basis of the research), which illustrates that financial reporting choices are affected by lending agreements, or the small business research literature on small firm financing, which is not at all referred to in Hite. The lack of consideration of the distinctive financing challenges facing small firms, and concerning which there is an abundance of research and other literature (see McMahon, 1994, 1999a; Chittenden, Hall and Hutchinson, 1996; Holmes *et al.*, 2003), makes Hite's assumptions dubious. There is no reason to assume that small business owner-managers are not under pressure to maximise their financially reported income to satisfy lenders. Similarly, there may be little rationale for assuming that the financial reporting behaviours of minority and majority owner-managers are necessarily different with the introduction of external financing.

The deficiencies of the Hite (1998) research, in terms of this latter point, are exacerbated by the lack of distinction made in the study between managers only and minority owners, treating minority owner-managers simply as managers. This means Hite assumed, and interpreted the results accordingly, that managers with no ownership interest and minority owner-managers will behave in the same fashion. Under positive accounting theory non-owner-managers may be more likely to increase reporting earnings to maximise compensation, while owner-managers (minority or majority) might behave differently (e.g. preferring to minimise taxation).

Issues concerning the variables studied in Gorton (1999) are of a different nature. Having reviewed the literature on small business growth and financial plans, Gorton then analysed the associations between growth, existence of financial plans, owner-manager educational achievement and the use of computerised accounting systems. The educational achievement and computerised accounting systems variables were not covered in the literature review and nor was any argument or theorising offered in the paper as to their relevance in the context of the study.

While there is a wealth of literature concerning a range of relationships between particular small business variables and owner-manager educational background and/or the firm's adoption and use of computerised accounting systems (see Holmes *et al.*, 2003) this literature is not canvassed.

4.7 Making generalisations

Hite's (1998) paper is based on positive theory. Positivism, a highly objectivist view of a common reality, suggests that human behaviours can be reduced to the state of generalised laws. The requirement for such universal principles implies a quantitative methodology, and the precision and usefulness of theories derived in this manner are judged by their capacity to explain and/or predict phenomena. Despite applying the theory of positivism, the paper offers no generalisable conclusions. Rather, the author backed away from making any explanatory, predictive or generalisable statements, as exemplified by the following concluding comments (with emphasis added):

- 'choices by small businesses between GAAP and tax rules *may* differ between majority owner-managers and noncontrolling owner-managers' (p.175);
- 'owner-managers whose firms use GAAP for financial reporting *tended* to maximize net income for financial reporting' (p.175): and,
- as the surveys were sent to owner-managers, 'the results are relevant *if* these individuals are making [financial reporting] decisions' (p.176).

This inability to draw conclusions, let alone make generalisations, is consistent with the underlying weaknesses of the design of the study attributable to two main factors - an unfocused purpose to the research and a mismatching of purpose (exploration) with theory (agency theory) and research paradigm (positivism).

Rue and Ibrahim (1998, p.30), who used statistical techniques similar to those applied by Hite (1998), more appropriately pointed out that their analysis was correlational and their results, therefore, incapable of resolution as causal relationships. Gorton (1999, p.61) calculated the 'odds' of there being associations between variables, such as the odds of a firm using a computerised accounting system and being in the high growth firm category. While noting that the log-linear method does not require the specification of a dependent variable (p.60), the author nevertheless concluded that the study pointed towards necessary conditions for small business growth (p.63). The reverse explanation, that organisational growth might

necessitate the implementation of a computerised accounting system, was not considered. Young (2002) generalised her findings, based on research in one state, to the entire US. She contended that her profile of respondents matched those nationally on a number of criteria although in the conclusion to the paper (p.443) admitted that regional differences may exist.

5. Revised framework for the evaluation of small business research

While the small business research has matured, there is nevertheless, a pervasive concern that quantity has outstripped quality in the drive to realise publication opportunities (see McMahon, 1999b). Based on the review made in previous sections, we expand on the work of Holmes and Kelly (1989) and McMahon (1999b) on research design weaknesses and produce a framework for assessing the merits or deficiencies of survey research on accounting in small businesses. Researchers and users of that research must be mindful of:

Sampling issues

- the precise nature of the sampling frame, including adequate definition and identification of the population of interest;
- sample selection criteria, such as attention to randomness, or the use of cluster, stratified or other appropriate sampling techniques to improve representativeness;
- sample size issues, ensuring sampling is statistically appropriate and that anticipated non-response is adjusted for prior to drawing a sample;

Response rate and response evaluation issues

- where response rates are low, the need to apply appropriate non-response bias tests;

Reliability and validity issues

- the need to pilot or pre-test, and retest new survey instruments and to perform statistical reliability analyses of instruments to improve validities;

Statistical testing and inference issues

- adequate assumption and significance testing, appropriate to the chief methods of statistical analysis applied;
- appropriate and rigorous statistical analysis of results;

Matching of research questions to research methods and methodology

- explicit purpose to the research and clearly stated research question;
- matching of exploratory or explanatory perspectives to appropriate qualitative and/or quantitative methodologies;

- proper marrying of ontology and epistemology with methodology;

Theoretical basis

- the desirability of the research to possess a theoretical basis;
- the need to ground the research in the existing small business theoretical and research literature;

Variables and assumptions

- validity of underlying assumptions;
- appropriate selection and operationalisation of variables and constructs; and,
- validity and usefulness of proxy variables.

The current paper has presented a discussion of numerous deficiencies of contemporary, survey-based small business research related to accounting (based on Hite, 1998; Rue and Ibrahim, 1998; Gorton, 1999; and Young, 2002). The deficiencies covered the gamut from questionable theory development, to low response rates, invalid assumptions, sampling inadequacies, and improper research design. We used these published research studies as cases in point to expand Holmes and Kelly's (1989) taxonomy of weaknesses and to provide a referential framework useful for assessing the methodology of survey research on accounting and small business.

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