Critical Perspectives on Accounting xxx (xxxx) xxx

Contents lists available at ScienceDirect

Critical Perspectives on Accounting

journal homepage: www.elsevier.com/locate/cpa

Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles

Simon Hussain [a,*], Lana Yan Jun Liu [a], Anthony D. Miller [b]

[a] Newcastle University Business School, Newcastle University, UK
[b] Durham University Business School, Durham University, UK

ARTICLE INFO

Article history:
Received 28 June 2016
Revised 29 April 2019
Accepted 30 April 2019
Available online xxxx

Keywords:
Journal rankings
Accounting research
Article construction
Reference sources

ABSTRACT

Academic research in accounting has often been characterised as exhibiting a dichotomy between the positivist approach and the critical, interpretive and interdisciplinary (CII) approaches. Our paper examines the extent of this dichotomy by presenting empirical evidence on the different source materials which the two communities use to construct their research papers. Across all articles published in six leading journals between 2002 and 2013, we find that positivist papers tend to be constructed from a narrower set of references drawn mostly from elite business journals while CII papers draw from a much more diverse range of sources, including non-elite journals, non-business journals and books. There is also evidence of the growing impact of journal ranking lists, with notable upward (downward) trends in the usage of high-ranked (unranked) reference sources. We suggest a link here with recent research on signalling within the publication process.

© 2019 Elsevier Ltd. All rights reserved.

1. Introduction

Academic research in accounting has often been characterised as exhibiting a dichotomy between those adopting what may be described as a positivist approach and those adopting critical, interpretive and interdisciplinary (CII) approaches (Lowe & Locke, 2005; Locke & Lowe, 2008). The former is driven primarily by a neoclassical economics perspective on accounting while the latter draws from a wide range of other disciplines including sociology, anthropology, politics, philosophy, history and gender studies (Hopwood, 2009). This dichotomy distinguishes accounting from its sister discipline, finance, where a more monocentric research culture exists (Hopwood, 2008, 2009; Brooks et al., 2019).

Our paper examines the extent of this dichotomy within accounting by presenting empirical evidence on the different reference sources which the positivist and CII communities use to construct their research papers. We investigate whether the mix of reference sources reflects the differences between these two research communities alluded to in prior studies (see Williams & Rodgers, 1995; Lee & Williams, 1999; Williams et al., 2006; Hopwood, 2009; Richardson, 2015). These include claims of greater openness to research diversity within the CII research community (Richardson, 2015, p. 69), and claims of excessive narrowness and elitism aimed at the positivist community (Lee & Williams, 1999, p. 874).

An additional dimension to our study is an investigation of how journal ranking guides may influence the usage of different reference sources for the construction of papers. Since the turn of the millennium there has been a significant increase in the role of journal ranking lists in the determination of how different research sources are perceived, in

* Corresponding author at: Newcastle University Business School, 5, Barrack Road, Newcastle upon Tyne NE1 4SE, UK.
E-mail address: simon.hussain@ncl.ac.uk (S. Hussain).

https://doi.org/10.1016/j.cpa.2019.04.007
1045-2354/© 2019 Elsevier Ltd. All rights reserved.

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

regard to their quality.[1] The type of reference sources used in the construction of articles often reflects a research community's opinions on what types of sources are most appropriate for the construction of new research papers.[2] Although a range of academic journal ranking lists currently exists, few have been as comprehensively examined over the last decade as the UK's Association of Business Schools (ABS) list, known as the *Academic Journal Guide* (AJG) in its 2015 incarnation.[3] This list will be employed in the empirical section of our paper. We will investigate the differences in the degree to which CII and positivist researchers draw upon reference sources from different strata of the ABS rankings when constructing their articles.

In order to conduct this investigation we have created a unique hand-collected dataset. Our dataset contains classifications of 171,602 individual reference sources from all articles published between 2002 and 2013 within six leading journals: *The Accounting Review* (TAR), *Journal of Accounting Research* (JAR), *Accounting Organizations & Society* (AOS), *Journal of Accounting & Economics* (JAE), *Critical Perspectives on Accounting* (CPA) and *Accounting, Auditing & Accountability Journal* (AAAJ).[4] The ABS guide is used here to classify all references for articles appearing in the six journals during the sample period.

We find that positivist papers tend to be constructed from a narrower set of references, mostly appearing in elite business journals, while CII papers draw from a much more diverse range of sources, including non-elite journals, non-business journals and books. There is also evidence of the growing impact of journal ranking lists, with notable upward (downward) trends in the usage of high-ranked (unranked) reference sources.

Our paper can be seen as a contribution to the prior literature examining the characteristics of different academic accounting traditions. For example, while prior research has focused on the links between leading positivist journals and elite US institutions (Lee & Williams, 1999), doctoral training at elite US schools (Schwartz et al., 2005), and editorial boards (Endenich & Trapp, 2018a,b), our focus is on the research sources upon which both positivist and CII researchers rely for the construction of their articles. Our paper also contributes to the growing literature on the role of journal rankings as signals of quality within academia (e.g. Walker et al., 2018). We suggest that this may be driven, in part, by authors' desire to signal the quality of their papers to editors and external reviewers. Thus, our paper also has linkage to recent work on signalling within the publication process (Endenich & Trapp, 2018a).[5]

The paper is structured as follows. Section 2 provides the background to our empirical examination of the source materials used by positivist and CII accounting researchers to construct their papers and explains why these may differ between the two research communities. Section 3 discusses how the rising influence of journal ranking lists could influence the source materials used in the construction of new papers, and how these lists can shape academics' evaluations of different reference sources. The ideas presented in Sections 2 and 3 provide the basis for our hypotheses. Section 4 introduces our hypotheses and research method, while Section 5 presents our results. These sections are then followed by the discussion and the conclusion.

2. Accounting as a segmented discipline: Positivist and CII research

2.1. Classification of positivist and CII journals

This section provides some insight into the differences between positivist and CII accounting research, and the major journals in which this work appears. Not all of these characteristics are easily quantifiable or amenable to empirical analysis but they provide a background to the dichotomy examined in this paper.

The classifications 'critical-interpretive-interdisciplinary' and 'positivist' are somewhat subjective, so for the purposes of this paper we rely on the consensus opinions of UK accounting researchers reported in Lowe and Locke (2005), and reiterated in a later survey of Australasian academics by Locke and Lowe (2008). In their survey of UK accounting researchers, Lowe and Locke (2005, Fig. 1, p. 88) use a bubble chart to graphically summarise respondents' opinions regarding both a journal's quality and its position in terms of the research-paradigm spectrum. Journals appearing closer to the left (right) hand side of the graph are viewed as being more strongly CII (positivist) orientated. The journals JAE, JAR and TAR are firmly on the positivist side of the graph, with JAE at the most extreme point. There are three journals clearly allocated to the CII side of the graph – AOS, AAAJ and CPA. Of these three journals, AOS and AAAJ are very similar in terms of their

[1] The current obsession with journal rankings has been well documented across a range of countries including the USA (Adler & Harzing, 2009; Ashford, 2013; Collet & Vives, 2013; Currie & Pandher, 2013; Giacalone, 2009; Hitt & Greer, 2012), Canada (Malsch & Tessier, 2015), South Africa (Nkomo, 2009), Australia (Moosa, 2011; McGuigan, 2015), China (Hussain et al., 2015), Spain (Moya et al., 2015), and the UK (Hussain, 2010, 2011; Taylor, 2011; Tourish, 2011; Nedeva et al., 2012; Sangster, 2011, 2015; Tourish & Willmott, 2015; Walker et al., 2018). Indeed, the increasing use of ranking lists and related metrics for assessing research led the Higher Education Funding Council of England (HEFCE) to conduct an initial review in 2015 (Wilsdon et al., 2015).

[2] The difficulty of identifying a Platonic ideal for research quality is well known, especially given that much accounting research crosses different paradigms (Milne, 2002; Hussain, 2015). It is not the intention of this paper to assess the relative qualities of positivist and CII research but to illustrate their differences.

[3] The guide ranks journals 1, 2, 3, 4 and 4* with the last of these reserved for 'elite' journals as will be explained later. The 2015 edition was used for this study. The ABS/AJG was updated in 2018 but rankings remain constant for most journals (https://charteredabs.org/academic-journal-guide-2018-available-now/).

[4] The notion of a 'leading' journal is somewhat subjective and is constructed within the context of the broader academic community and environment (Lee & Williams, 1999). Schwartz et al. (2005, p. 329) point to a number of studies which explain how the social organization of the discipline affects what passes for legitimate knowledge in that discipline and that what constitutes a meritorious contribution is shaped by the social structure of the discipline.

[5] The potential role of signalling is developed further in our discussion in Section 6.

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

position on the paradigm spectrum, with CPA identified as the most CII-focused journal. Although other accounting journals exist, these six are the highest rated journals among the sets of positivist and CII-orientated accounting outlets.[6]

2.2. The positivist and CII accounting journals

2.2.1. The positivist journals

The domination of a neoclassical economics perspective over accounting research within the leading positivist journals (TAR, JAR and JAE) is remarked on by Lee and Williams (1999, p. 868) with reference to evidence presented by Brown (1996). JAE has professed an economics-centric view of accounting since its foundation in 1979, stating that the editorial policy was to publish papers which explain accounting phenomena using economics. However, the increased influence of economics on the two older positivist journals – TAR founded in 1926, and JAR founded in 1963 – is revealed in a study by Williams and Rodgers (1995). They examine the editorial boards of all three journals and find increasing homogenisation across the period 1967–1993. Lee and Williams (1999) also note the increasing homogenisation of research perspectives within TAR:

> "Articles published by elite researchers in TAR between 1967 and 1993 reveal an increasing tendency toward an emphasis on a financial economics approach to accounting knowledge production, as evidenced by increasing citations to JAE, JAR and the leading financial economics journals (most notably, *Journal of Finance* and *Journal of Financial Economics*). In essence, by 1993, TAR's content was largely dominated by an elite group of scholars employing a single paradigm, which was likewise employed by the two other leading U.S. journals, JAR and JAE." (Lee & Williams, 1999, p. 874)

This is noteworthy because TAR had been very practitioner-focused during its early years. Williams et al. (2006) make reference to the significant impact of the University of Chicago in promoting the development of a neoclassical economics perspective among the leading positivist journals in accounting. Citing evidence from Fleming et al. (2000), they comment on the shift in TAR articles between 1966 and 1985, moving from more deductive articles to more heavily quantitative and empirical articles.

Turning next to JAR, Williams et al. (2006, p. 790) contrast JAR's original aim to be a journal employing an array of research interests within a multi-disciplinary perspective (Schultz & Caine, 1964), with the comments of Sidney Davidson in the preface to the 1966 Conference issue of JAR stating that accounting is singularly concerned with the quantitative expression of economic phenomena. Thus, it can be seen that the perspective of JAR narrowed within a very short period of time (see also Reiter, 1998).

This increasing homogenisation of research perspectives has been characterised as meaning that most of the accounting research appearing in these three journals is now effectively a sub-discipline of economics (Williams et al., 2006, p. 793). Many academics have voiced concerns regarding the domination of TAR, JAR and JAE by a narrow neoclassical economics perspective and the consequent marginalisation of research that does not fit into this framework (Williams et al., 2006, p. 793). The positivist accounting trend towards monocentricity mirrors a similar trend in finance (Whitley, 1986) – a subject which plays a central role in the methodological approaches adopted by the three leading positivist accounting journals (Williams & Rodgers, 1995).[7]

2.2.2. The CII journals

The three leading journals for CII perspectives on accounting are AOS, CPA and AAAJ, although all have also published positivist work to varying degrees, particularly in the case of AOS. In regard to CPA, Richardson (2015) reports the very small number of quantitative papers published during 2004–13: this may be interpreted as being consistent with its position as the most CII-orientated journal on the graphical representation in Lowe and Locke (2005).[8]

The earliest of the three CII journals to be established was AOS. In a set of reflections on the journal's genesis, Anthony Hopwood (2009) explains the need for alternative perspectives on accounting. In founding the *Behavioural Accounting Newsletter* in 1972 and thereafter AOS in 1976, Hopwood provided an outlet for those seeking to explain accounting via behavioural, organisational, international and social models:

> "*Accounting, Organizations and Society* revels in operating in a context of diverse research perspectives and approaches . . . [while] fully recognizing the legitimacy of economic, financial and more technical modes of investigation. That wider appreciation increasingly has not been reciprocated however. Outside the arenas occupied by *Accounting, Organizations and Society* there seemingly have been strong pressures to see accounting as a more monocentric discipline rather than the polycentric one . . ." (Hopwood, 2009, p. 892)

The above quote confirms the monocentric tendency of positivist research in accounting. However, in the first AOS editorial Hopwood (1976) clearly recognises the difficulties of establishing an alternative approach to that offered by economics:

[6] Endenich and Trapp (2018a, Table 4, p. 13) also identify AOS, CPA and AAAJ as the leading CII journals.
[7] Whitley (1986) documents the transformation of finance from a predominantly practice-based discipline into a sub-discipline of economics.
[8] Although a distinction can be drawn between research methods and research topics (Gray & Milne, 2015), this illustrates a tendency for non-quantitative methods to be a preference for many CII researchers.

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

> "The magnitude of the intellectual jump between accounting and the social and behavioural sciences is great compared with that required for the integration of economic and quantitative perspectives ... In the latter case many accounting academicians already had a firm grounding in the necessary disciplines and the intellectual leadership in the new area was firmly established in a few key university institutions. This was highly respectable research! The social and behavioural sciences, on the other hand, were less familiar to most accountants ..." (Hopwood, 1976, pp. 2–3)

The emergence of interdisciplinary approaches to the investigation of accounting in the 1970s (Lowe & Tinker, 1975) helped the development of what would become known as critical accounting, which draws frequently on political perspectives which clash with those underpinning much of the market-based positivist research. Richardson (2015) describes the critical accounting project as relatively amorphous in the sense that it draws from many different perspectives and the journal CPA has become the leading outlet for much of this work. CPA was founded in 1990 by David Cooper and Tony Tinker. Their first editorial made clear the distinctive approach of the journal. What is equally striking from this editorial is how the editors saw much of the positivist mainstream as having morphed into a narrow and intolerant branch of accounting inquiry. They contrast the positivist approach with that adopted by CPA:

> "We reject market or economic forms of determinism and accept that accounting inevitably intervenes in human and social conduct... Most of all, we reject methodological secularism and academic obscurantism, and support new forms of dialogue and tolerance that encourages catholic, eclectic and interdisciplinary approaches. The only methodological endorsement we will make is that "anything and everything" should be open for "Critique."" (Cooper & Tinker, 1990, p. 2)

These early editorials for AOS and CPA point clearly to the alleged greater tolerance of diverse methods and paradigms, relative to the positivist mainstream.

The third of the CII journals, AAAJ, appeared in 1988 and developed from the Interdisciplinary and Critical Perspectives on Accounting Project at the University of Sheffield. It aimed to examine the interaction between accounting and auditing together with the institutional, socio-economic, political and historical environment. While it can be argued that AOS emerged from the interdisciplinary work pioneered in the early 1970s rather than from the work of the early critical scholars, Richardson (2015) notes the similarities between the interdisciplinary and critical traditions in accounting:

> "A commonality of the interdisciplinary and critical accounting projects is a relative openness to a wide range of theories and methods. This openness makes both the interdisciplinary and critical accounting projects difficult to define or to put boundaries around ..." (Richardson, 2015, p. 69)

Thus, it is suggested that critical and interdisciplinary work both share a common openness to diverse research perspectives.

2.3. Openness to diverse research sources within positivist and CII accounting

Schwartz et al. (2005, p. 328) note that while the natural sciences are generally characterised as having a high degree of consensus regarding the dominant current research paradigms, the social sciences exhibit much more diversity in terms of paradigms, with many co-existing and being employed contemporaneously. The positivist journals treat accounting more like a natural science, but work appearing in the CII journals tends to reflect the social science position by drawing upon diverse frames and lenses.[9]

The relative narrowness of the positivist approach has been noted and criticised by various accounting scholars (Chua, 1986; Just et al., 2010; Wilkinson & Durden, 2015) with particular reference to its reliance on neoclassical economics (Hopwood, 2008, p. 89). The reliance of positive accounting research on economics and scientific methods was critiqued in the editorial of the first issue of CPA in terms of how it ignored, or even disdained, certain important perspectives on accounting:

> "In research, the [positivist] mainstream now pursues an impoverished and value-laden notion of science that elevates empiricism and technique as "objective," and denigrates ethical and social concerns as "normatively biased."" (Cooper & Tinker, 1990, p. 1)

The different tolerance levels between positivists and CII researchers regarding paradigms and methods will likely be reflected in the type of research which the two communities draw upon for the construction of their research papers. Scholars typically wish to build their research papers on firm foundations, drawing upon reference sources that will reassure editors and reviewers that the paper follows in the footsteps of prior work that has already attained a perceived hallmark of excellence. If a research community considers only a limited set of outlets to possess this hallmark then it may be expected that this narrowness will be reflected in the mix of source materials used to construct their papers. For

[9] This dichotomy is not intended to suggest that there are no positivist researchers within the social sciences, but merely to recognise that within the social sciences there is a much greater tendency for multiple paradigms and research perspectives to co-exist.

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

example, the limited awareness among many positivists of any research beyond the narrow scope of TAR, JAR and JAE is revealed in surveys of doctoral students at positivist-dominated US schools (Schwartz et al., 2005). This extends even to cases of experienced faculty:

> "[A] recent visitor from a very well established North American school told me she only read four accounting journals and had not ever heard of *Accounting, Organizations and Society*. She was not joking either as a subsequent perusal of the work she cited in her research papers confirmed. (Milne, 2002, p. 73)[10]

Further evidence on the alleged narrowness of US positivism is presented by Endenich and Trapp (2018a) who examine the editorial board of TAR from 1990 to 2015 and report that the narrow methodological preferences of the board members are reflected in the methodological nature of the articles accepted by TAR. They suggest that the lack of diversity on the editorial board is intended to send a signal to the research community regarding the narrow range of research methods which TAR considers worthy of publication.[11] They then contrast this with the case of the Canadian journal *Contemporary Accounting Research* (CAR). At the beginning of the 2010s, CAR deliberately expanded its editorial board to include field and case study experts (Salterio, 2010, 2018) which led to a subsequent increase in the diversity of methods in papers published by the journal. [12]

While quantitative and positivist research approaches are not unknown within CII research (Everett et al., 2015; Patten, 2015; Roberts & Wallace, 2015), many in the CII area see themselves as being more closely aligned to subjects in the humanities and social sciences. As a result, CII research exhibits the co-existence of multiple paradigms drawing upon a range of sociological, critical, anthropological and historical frameworks (Hopwood, 2008, 2009). For these reasons it may be that the source materials used to construct positivist and CII papers exhibit significant differences. Our paper examines these differences in terms of source type (e.g. journals, books), source quality (ABS guide rankings), and the total number of sources. The next section explains why it is possible that these differences may vary across time, as well as between positivist and CII papers.

3. The influence of journal ranking lists on the use of different reference sources

3.1. Journal rankings as signals of quality

Journals and their ranking metrics have now become closely aligned in the minds of many academics (Willmott, 2011; Nedeva et al., 2012; Hussain, 2015; Walker et al., 2018). The power of ranking lists is such that scholars will now frequently talk about their papers in terms of ranking scores rather than the content of the papers. In their study of UK academics, Nedeva et al. (2012) refer to a senior academic colleague in the following terms:

> "[He saw] his whole identity as defined by the ABS Guide, his soul measured by it. He has, in a Foucauldian sense, enfolded himself in the discourse of journal rankings and they define him." (Nedeva et al., 2012, p. 351)

Many experienced academics currently working as PhD supervisors within the UK will have experienced cases where their mentees justify their choice of method or data by saying that it is based on a paper in a top-rated journal, as if that statement was sufficient in itself, rather than explaining why the method or measurement is superior to any alternatives. Thus, in some cases at least, journal rankings are replacing the need to think critically about the strengths and weaknesses of a particular reference source – the fact that it appears in a high-ranked journal is viewed as sufficient justification for its usage.

Recent work by Picard et al. (2018) provides an insight into this phenomenon. They apply Karpik's analysis of the economics of singularities (2007,2010) to the case of academic articles (Karpik, 2011). The term 'singularity' refers to the unique nature of every research article, each of which has its own unique mix of qualities (see also Milne, 2002, p. 78; Hussain, 2011, p. 551); since there is no universally accepted measure for research quality, research papers are incommensurable; and since we have no way of knowing which papers will prove to be sources of significant new knowledge or techniques in the future, they are characterised by uncertainty. Journal rankings provide a formal judgement device which reduces these qualities and characteristics to a single metric and supposedly allows for easy comparisons – a process of desingularization. The quality of any article is therefore reduced to the host journal's ranking. This 'ranking folly' may lead researchers to rely more on elite journals as sources of inspiration.

[10] The fourth journal referred to by this academic is not specified but is almost certainly another predominantly positivist outlet, *Contemporary Accounting Research* (CAR), which appears in most US ranking lists behind TAR, JAR and JAE (see Milne, 2002, p. 73).

[11] It should be noted that in a response, a former editor of TAR (Kachelmeier, 2018) states that the expert-mix on the TAR editorial board was driven primarily by the type of articles TAR had published in prior periods, and the nature of the most recent submitted papers, rather than being a deliberate signal to the research community.

[12] It should be noted, however, that CAR has long been viewed by most scholars as being very close to the North American positivist tradition (Lowe & Locke, 2005; Locke & Lowe, 2008). Indeed, in a response to Endenich and Trapp (2018a), Roberts (2018) examines 35 forthcoming articles in CAR and points out that these are positivist in nature, with a heavy focus on audit and financial archival papers and no papers adopting a qualitative approach. Our paper provides a starker contrast by comparing the leading US positivist journals with the leading CII journals.

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

With the rising influence of journal rankings within academia it is possible that authors may choose to reference highly-ranked source materials in their papers as a means to signal the intrinsic quality of their work. Evidence of how these lists are impacting the way academics assess the quality of research, including their own work, appears in a recent UK survey by Walker et al. (2018):

> "What is perhaps unique to business and management in the UK is the pervasiveness of the use of the AJG/ABS list across a wide range of institutions. Within less than 10 years since its development, the AJG/ABS list has become embedded and institutionalized, creating a self-reinforcing cycle of use and attention by faculty, research managers and external actors." (Walker et al., 2018, p. 14)

Their study shows that ranking lists now play a major role both in how academics signal their research achievements to external assessors, and in how they construct their cases for promotion. These points are relevant to our study because, when constructing their papers, academics may use reference sources which they feel are most likely to convince external reviewers (e.g. editors and referees) of the soundness of their methods and data. One way to achieve this is to build a paper on prior work appearing in the highest-rated journals. In this case, the authors would be signalling the quality of their own work by their heavy reliance on source materials drawn from top-ranked journals.

The concept of signalling (see Spence, 1973) has been applied to the academic publication process by Endenich and Trapp (2018a,b). They suggest that the editors of TAR and CAR have constructed editorial boards which signal these journals' respective preferences regarding research methods. Following on from Walker et al. (2018) we suggest that it is also possible that authors' selection of reference materials from highly-ranked sources may be used to signal the quality of their papers to editors and reviewers. Thus, signalling between journals and authors becomes a two-way process. The rise of journal ranking lists within academia is likely to strengthen the likelihood of this scenario.

3.2. References drawn from beyond the realm of listed journals

Not all reference sources for articles are to be found on ranking lists. One of the most significant groups of non-journal sources used in the construction of research papers is books. In the current climate where even research published in highly respected national association journals is increasingly not recognised for promotion and tenure (Humphrey & Gendron, 2015, p. 56), books are arguably a case worthy of particular attention:

> "What is peculiar with the field of business research for journal rankings to reign to a higher degree than in other disciplines, such as sociology, where publishing intellectual essays in the form of books (issued through "serious" publishing houses) is well recognized?" (Humphrey & Gendron, 2015, p. 59)

Parker (2014) also comments on how book publications are often viewed as insignificant for appointments within the business school sector. The following quote from Parker (2014) makes it clear that the negative view of books is driven by the fact that they carry no rating in the ABS Guide:

> "The only publications that mattered were stated to be those in three and four star journals, and books or chapters were treated as effectively irrelevant for the purposes of appointment or promotion. The process of getting appointments past the Dean was reduced to counting the ABS scores on publications. . ." (Parker, 2014, p. 285) [13]

Of course, these statements relate to how outputs are valued for the purposes of tenure and promotion but we would argue that this rankings-based regime sends a powerful signal to staff, especially early and mid-career staff, that books are effectively low calibre outputs in terms of research credibility.[14] If ranking lists are impacting perceptions of research quality in the minds of academics then this raises the possibility of identifying a time trend in the usage of book references, given that books carry no formal ranking.

Another significant group of unranked outlets is non-business journals. Scholars in accounting may draw upon journal articles in areas such as history, gender, law or sociology, few of which appear on the major ranking lists used within business schools. If the CII research community displays a greater tolerance of diverse methods and paradigms than their positivist counterparts (Richardson, 2015, p. 69) then it may be that usage of non-business academic journals as reference sources for papers will be greater within CII research than within positivist research.

The next section details our hypotheses, method and data. The hypotheses draw on material discussed in Sections 2 and 3 of this paper. We will examine both cross-sectional differences in source materials between CII and positivist research, and time trends in the usage of different types of source materials.

[13] Carr (2011) identifies a similar pattern within Australian schools for journals rated 'A' or 'A+', which are approximately equivalent to the 3 and 4 ratings on the ABS guide.

[14] This is not to suggest that the usage of book-based sources will vanish, of course. Some topic areas will inevitably continue to draw upon book sources, but across the aggregate of accounting articles, book usage may diminish over time.

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

4. Hypotheses, method and data

4.1. Developing testable hypotheses

An examination of reference sources could cover a wide range of characteristics including the number of references, the quality-mix of references, research paradigms and methodological approaches. The total number of references for all articles in this study makes it impractical to conduct a textual analysis of paradigms and methods for all reference sources.[15] Thus, our hypotheses are based primarily on the number of references and the quality-mix of references; these are the metrics by which we will assess the diversity of reference sources within both CII and positivist research papers.

Perceptions of prestige and research quality within the positivist accounting community tend to follow those in finance and economics (Whitley, 1986), both of which mirror the natural sciences, with a similar reverence for citation scores and impact factors (Oswald, 2007). The fixation with metrics has long been a fact of life for academics within the medical and natural sciences, albeit one which has received criticism in outlets such as the *British Medical Journal* and *Nature* (see Seglen, 1997; Lawrence, 2002, 2003). Although Oswald (2007) provides a critique of this fixation within economics, he summarises the opinions of metrics-focused academics within the discipline thus:

> "Thanks to sources such as the ISI Web of Science database, journal standing can be judged fairly objectively by, for example, 'impact factors'." (Oswald, 2007, p. 22)

Within accounting, the top journals would on this basis be defined primarily as a small set of mostly North American journals, led by JAE, JAR and TAR, all of which are rated 4* on the ABS list.

If CII researchers are more open to ideas from a wide range of subjects beyond business disciplines (Hopwood, 2008, 2009) it may be expected that this diversity will be reflected in the source materials for articles in the leading CII journals. It may also be that source materials appearing in multidisciplinary journals, important to the diverse nature of CII research, are more prevalent than in the case of positivist articles. This has implications for our study because multidisciplinary journals are sometimes poorly rated on ranking lists (Rafols et al., 2012) and viewed negatively relative to discipline-specific journals (Soskice, 2016).

There are several reasons to suspect that accounting articles in positivist journals will draw from a narrower set of source materials than CII articles. Firstly, the more monocentric perspective of positivist research is likely to work against diversity of source materials, relative to CII articles. Secondly, the willingness to accept journal metrics as meaningful signals of a paper's intrinsic quality appears to be greater within research communities which follow the science model (Seglen, 1997; Lawrence, 2002, 2003) than for those communities which may be closer to the humanities.[16] Furthermore, CII researchers may be more likely to draw upon prior work appearing in interdisciplinary business journals, which tend to be lower-ranked (Rafols et al., 2012) and, therefore, non-elite. We thus develop our first two testable hypotheses, stated here in their null form:

H1: There is no difference in the degree to which articles in positivist journals and those in CII journals use reference sources appearing in elite business journals for their construction.

H2: There is no difference in the degree to which articles in positivist journals and those in CII journals use reference sources appearing in non-elite business journals for their construction.

The reader should note that rejection of H1 does not imply automatic rejection of H2. This is because articles rely on other reference sources which are not covered by H1 or H2. An extension of the ideas behind H2 is that CII researchers may be more willing to construct their articles on research work appearing beyond the realm of academic business journals:

H3: There is no difference in the degree to which articles in positivist journals and those in CII journals use reference sources from beyond the realm of business journals for their construction.

The testing of H3 will be conducted for two types of non-business journal sources – books and non-business academic journals.

The claims of greater openness in CII research to multiple paradigms and methods may also result in a greater number of reference sources, particularly if a topic has a number of competing or co-existing paradigms and theoretical frameworks. This leads to our next hypothesis:

H4: There is no difference in the number of reference sources which articles in positivist journals and those in CII journals use for their construction.

[15] Our study classifies 171,602 individual reference sources from over 3000 articles.

[16] The potential use of publication metrics within the Arts and Humanities is an emerging topic and was discussed at the *HEFCE metrics workshop: metrics and the assessment of research quality and impact in the arts and humanities*. This was a one-day workshop hosted by the University of Warwick (16 January 2015) as part of the independent review of the role of metrics in research assessment: http://www.hefce.ac.uk/news/Events/Name,101073,en.html

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

The hypotheses H1 to H4 relate to the differences in the reference sources used by positivist and CII researchers. However, they tell us nothing about trends in the usage of different reference sources.

The influence of journal ranking lists has increased since the turn of the millennium and journal rankings are now often seen as important signals of research quality when submitting applications to internal or external reviewers (Walker et al., 2018). Recent evidence shows the importance of signalling within the publication process (Endenich & Trapp, 2018a,b). Authors may hope that by employing a high proportion of high-ranked source materials in the framing and construction of their papers, they will signal their own paper's research heritage to reviewers and editors. If ranking lists have influenced the mix of source materials used in the construction of articles during 2002–13 then such a trend is likely to be most clearly observed for elite sources:

H5: There has been no change in the degree to which articles across all six journals draw upon reference sources appearing in elite journals for their construction during 2002–13.

While H5 relates to the usage of elite sources across all journals, it is also possible that trends differ between positivist and CII journals although it is not possible, *a priori*, to suggest a particular direction for any differential:

H6: There has been no change in the degree to which articles appearing in positivist and CII journals draw upon reference sources appearing in elite journals during 2002–13.

H5 and H6 are stated in terms of the degree to which articles draw upon elite journal sources because we expect these to be the strongest signals of quality to external reviewers but we will also examine how article reliance on sources from non-elite business journals, non-business journals and books has changed during the test period. The test method and sample data are discussed next.

4.2. Method and data

4.2.1. Sample and variable measurement

We begin with an initial sample of all 3048 articles appearing in the three leading CII journals (CPA, AOS, AAAJ) and the three leading positivist journals (JAE, JAR, TAR) within the period 2002–2013. For each article, we classify all reference sources according to the ABS's *Academic Journal Guide 2015* (AJG). This requires 171,602 individual classifications.

Reference sources are classified here as 'elite' if the journal in which they appear is ranked '4*' in the ABS guide. The guide reserves this classification for those journals which appear in the highest category on at least three of the following five international listings: Financial Times (FT) 45, University of Texas, Dallas (UTD) list, Verband der Hochschullehrer für Betriebswirtschaft (VHB) list, Australian Business Deans' Council (ABDC) list, and the Centre National de la Recherche Scientifique (CNRS) list. Among the non-elite journals we make a distinction between those ranked either '3' or '4' which are still well-regarded by research deans (see Parker, 2014, p. 285), and those rated '1' or '2'. Based on these data we create the following dependent variables: [17]

- ELITE % – the percentage of an article's reference sources appearing in journals that receive an elite rating on the ABS Guide ('4*');
- NON-ELITE_HIGH% – the percentage of an article's reference sources appearing in journals that receive good ratings on the ABS Guide ('3' and '4') but are not classed as elite journals;
- NON-ELITE_LOW% – the percentage of an article's reference sources appearing in journals that receive low ratings on the ABS Guide ('1' and '2') but are business journals recognised by the ABS Guide.

Of course, some reference sources fall outside the ABS remit. We focus on the two most significant classes of these outlets: (i) non-business academic journals, and (ii) books. These are represented by the following dependent variables:

- NON-BUSINESS_JOURNALS% – the percentage of an article's reference sources appearing in academic journals that are beyond the remit of the ABS Guide;
- BOOKS% – the percentage of an article's reference sources appearing in books, including chapters, or monographs. Within reference lists, books and monographs are not always easily distinguishable and indeed monographs are sometimes reprinted as books. For these reasons we include these in a single category.

[17] The high and low-rated non-elite classes are dominated by journals ranked '3' and '2', respectively. The inclusion/exclusion of '4' and '1' rated sources from their respective groups does not materially impact our findings.

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

These two classifications are generally well-defined although it must be acknowledged that there is some requirement for personal judgement in certain matters of classification.[18] Our final dependent variable is a measure of the total number of reference sources used in the construction of each article (TOTAL_SOURCES).

To take account of the possibility that positivist articles can sometimes appear in CII journals, and vice versa, we add positivist and CII keyword controls for the nature of each paper. To obtain the relevant keywords, we first examine the frequency of words in the titles of all papers. Using the text analysis programme NVivo® we identify a list of keywords that appear commonly within the titles of papers in the three CII journals and within the three positivist journals. A list of the Top-30 keywords is created for the two groups of journals and those keywords which are common to both lists are excluded: this leads to a sample of 18 keywords for each list.[19] Because the resulting keywords lead to an imbalance in the percentage of occurrences between the positivist and CII keywords, the next three most popular CII-specific keywords are included, creating a total of 21 keywords.[20] These are detailed in Appendix 1. Using the keyword lists we then create dummy variables which indicate the presence of any CII or positivist keyword in the article's title (POSITIVIST_KW and CII_KW).[21]

We acknowledge that these keywords will not be perfect discriminators for positivist and CII-related articles but they will provide an indicator for many of the most popular topics within the positivist and CII research areas. However, we must also acknowledge that our method for identifying a list of positivist and CII keywords makes it essential to also control for journal-effects otherwise the keyword dummies may merely reflect variations between the journals rather than the nature of the article.

The host journal for an article will be indicated by one of the following dummy variables: CPA, AAAJ, AOS, JAR, TAR and JAE. Although journal-specific dummies will be our main approach to controlling for journal-effects, we also employ a secondary approach using a single binary variable to distinguish the positivist journals (JAE, JAR and TAR) from the CII journals (AOS, CPA and AAAJ). This is achieved by introducing a dummy variable which takes a value of unity for articles appearing in positivist journals (POSITIVIST_JOURNALS), and zero otherwise. The time variable will be the year of the article's publication, denoted YEAR.

Our study trims the most extreme five percent of articles in terms of total references. The sample is trimmed so that all articles have at least 10 references, and no more than 145. This reduces the sample to 2832 articles across the six journals. This is done to ensure that our findings are representative of the normal range of papers appearing in the positivist and CII journals. Very short articles which have only a few references have the potential to cause extreme values for percentage variables such as those used here as the dependent variables (e.g. ELITE%). It should also be noted that the six journals in our study frequently contain editorials, brief reviews and even poems which are untypical of the majority of contributions to these journals. There is also a small tail of articles, mostly survey articles, with very large numbers of references. For example, Kothari (2001), which appears in JAE, has over 550 references, exceeding our trimmed upper limit by nearly four times, and which is untypical for JAE papers. These observations may skew our results for TOTAL_SOURCES. In order to protect our analysis against all these potentially problematic observations, we trim the extreme 2½ percent tails.[22]

To the best of our knowledge, no prior empirical evidence currently exists on the factors which determine the reliance of articles on various reference sources. The novelty of our study means that we do not have a body of prior research to inform our modelling choices and so a parsimonious approach to model construction is adopted here. However, we will include several control variables which relate to the authorship of each paper. Firstly, we control for the total number of authors contributing to a paper (AUTHORS). Within the fields of science and medicine it is common to have a relatively large team involved with research projects and the resulting papers. If the positivists follow this characteristic of the scientific community, then the number of authors may proxy for the nature of the article. Secondly, because our study uses the UK's ABS guide to assess journal quality, it may be that there will be a UK-effect within our data for those articles generated entirely by authors working within the UK sector. A dummy variable (UK) is used to indicate those articles where authorship is based solely within the UK.

4.2.2. Model specification

Our main model is shown below and will be estimated for all six dependent variables. Using ELITE% as an example:

$$ELITE\% = a_0 + a_1.AAAJ + a_2.AOS + a_3.JAE + a_4.JAR + a_5.TAR + a_6.POSITIVIST\_KW + a_7.CII\_KW + a_8.YEAR + a_9.AUTHORS + a_{10}.UK + \varepsilon$$

[18] For example, professional magazines which appear on a weekly or monthly basis are classified as non-research and so excluded even though they occasionally included contributions from academics.

[19] The excluded words are 'account', 'effect', 'audit', 'corporate', 'disclosure', 'evidence', 'control', 'manage', 'report', 'perform', 'measure' and 'financial'.

[20] The balancing of positivist and CII keywords is not an essential requirement of our analysis and it does not materially impact our results.

[21] In an earlier draft of this paper we also included keywords suggested by colleagues. These included the positivist keywords and stems 'beta', 'empiric' and 'market', and the CII keywords and stems 'gender', 'Foucau' and 'interp'. Inclusion of these keywords reiterates the findings from the original list. While we acknowledge that alternative lists could be constructed from specialist dictionaries for positivist and CII accounting topics, if such dictionaries existed, we believe that the keywords shown in Appendix 1 serve the purpose of identifying positivist and CII papers, albeit imperfectly.

[22] In fact, the inclusion/exclusion of these observations makes little impact on our primary findings but helps improve model-fit in some cases.

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

Within this model, CPA is the omitted 'reference' journal for the regression. The coefficients for the other five journals will indicate the degree to which their articles differ from those appearing in CPA in terms of their reliance on elite reference sources.

We also employ a secondary model in which the journals are grouped together as either positivist or CII journals. A dummy variable (POSITIVIST_JOURNALS) is created which takes a value of unity for articles appearing in JAE, JAR or TAR, and zero otherwise. This dummy variable replaces the dummy variables for the individual journals. Although our secondary model provides less insight into variations between the individual journals, it provides a more direct way to test our hypotheses H1 to H6 regarding the dichotomy between positivist and CII research. Using ELITE% as an example, the secondary model takes the form:

$$ELITE\% = b_0 + b_1.POSITIVIST\_JOURNALS + b_2.POSITIVIST\_KW + b_3.CII\_KW + b_4.YEAR + b_5.AUTHORS + b_6.UK + \varepsilon$$

Thus, the CII journals are the omitted 'reference' group in the secondary regression model.

The results of the ELITE% regression will reveal whether positivist papers draw upon references from elite business sources to a different degree than do CII papers (H1) while the results of the NON-ELITE_HIGH% and NON-ELITE_LOW% regressions will reveal whether positivist papers draw upon references from non-elite business journals to a different degree than do CII papers (H2). The regressions for NON-BUSINESS_JOURNALS% and BOOKS% will reveal whether positivist papers draw upon references in unlisted (non-ABS) sources to a different degree than do CII papers (H3).

Our fourth hypothesis (H4) relates to possible differences in the number of reference sources used to construct both positivist and CII articles (TOTAL_SOURCES). Although a generic time trend variable (YEAR) is included in the regression models to pick up broad trends within the whole sample (H5), it is also instructive to re-examine this on a journal-by-journal basis to see whether the usage of elite sources has grown more rapidly among papers in positivist or CII journals during this period, when rankings and metrics have become increasingly important (H6).

Although OLS will be our primary estimation method, for our main analysis we also report t-statistics calculated using heteroskedastic-robust standard errors and standard errors robust to clustering. Our clusters are the 72 journal-year combinations since variations in reference sources could reflect similarities in topics (i.e. 'hot' topics) within a particular journal at a particular period of time. However, for some additional regressions conducted on sub-sets of our main sample, the number of clusters falls to a point where drawing inferences becomes problematic and so only OLS results are presented.[23]

4.2.3. The data

The main descriptive statistics for our variables are presented in Table 1, Panel A.

Of the 2832 articles in our sample, the two largest contributors are CPA at nearly 19% and TAR with 24%. More than one-third of articles contain at least one positivist keyword in their title and a similar proportion contains at least one CII keyword in their title. Less than 15% of articles are authored by academics based solely within the UK.

In terms of how these 2832 articles are constructed, Panel A shows that more than one-third of all references derive from elite business journals (ELITE%). Around one-fifth of references are from higher-ranked non-elite business journals (NON-ELITE_HIGH%) while less than 5% are from lower-ranked business journals (NON-ELITE_LOW%). However, more than one-fifth of references are derived from books (BOOKS%). These proportions also vary notably across journals, as revealed in Panel B.

5. Results

5.1. Differences in source materials for positivist and CII articles

5.1.1. Reliance on business journal sources (H1, H2)

We begin with the results for ELITE%, presented in Table 2. These results reveal those factors which influence an article's reliance on reference sources appearing in elite business journals. In all cases, the statistical significance of the regression coefficients is determined using a two-tail test, unless stated otherwise. In most cases the t-statistics from OLS, robust and clustered standard errors generate identical conclusions. To assess multicollinearity, VIF statistics are used. These are identical for the six regressions within each panel because the same independent variables are being used to explain variations in each of the dependent variables. None of the VIF statistics exceed a value of 10, thus indicating that multicollinearity is not a significant problem.

Table 2, Panel A, shows that the degree to which an article relies on reference sources in elite journals varies notably across journals. CPA is the omitted reference journal and the significant positive coefficients for the other five journals' dummy variables indicate the significantly increased reliance of their articles on elite reference sources, relative to CPA. This pattern confirms the results in Table 1, Panel B. The three positivist journals generate the largest positive coefficients. AOS and AAAJ generate positive and significant coefficients, but these are much lower than for the three positivist journals.

[23] Ozler (2012) suggests 30–40 clusters are an acceptable minimum.

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

Table 1
Descriptive statistics.

Panel A: The regression variables

Variable	Mean	Median	Std. Dev	Minimum	Maximum
Article's host journal:					
JAE	0.133	0	0.3398	0	1
TAR	0.240	0	0.4272	0	1
JAR	0.151	0	0.3582	0	1
AOS	0.140	0	0.3469	0	1
CPA	0.188	0	0.3907	0	1
AAAJ	0.148	0	0.3551	0	1
Article's characteristics:					
POSITIVIST_KW	0.36	0	0.482	0	1
CII_KW	0.36	0	0.478	0	1
YEAR	2007.847	2008	3.4068	2002	2013
AUTHORS	2.106	2	0.9403	1	15
UK	0.1416	0	0.3487	0	1
Article's reference sources:[†]					
ELITE%	36.6372	35.6538	23.68774	0	100
NON-ELITE_HIGH%	19.7731	17.7778	11.88181	0	100
NON-ELITE_LOW%	3.3301	1.9608	4.43744	0	40
NON-BUSINESS_JOURNALS%	7.182	5.5556	7.14353	0	54.35
BOOKS%	22.2392	17.6471	18.47462	0	100
TOTAL_SOURCES	55.03	50	27.3069	10	145

Panel B: Each journal's mean reliance on different reference sources

	JAE	TAR	JAR	AOS	CPA	AAAJ
ELITE%	56.56	50.13	56.56	28.84	12.26	14.79
NON-ELITE_HIGH%	15.03	19.87	15.37	19.52	21.07	26.96
NON-ELITE_LOW%	1.3	2.62	1.54	4.47	4.61	5.45
NON-BUSINESS_JOURNALS%	6.26	4.71	4.86	8.88	9.84	9.39
BOOKS%	5.44	9.53	17.5	33.02	39.25	31.05
TOTAL_SOURCES	42.6	46.5	42.8	71.8	61.7	68.2
Observations (n)	377	680	428	396	532	419

Notes: Based on 2832 articles appearing in six leading accounting journals between the years 2002 and 13 inclusive:
JAE = a dummy variable taking a value of unity for articles appearing in JAE and zero otherwise; TAR = a dummy variable taking a value of unity for articles appearing in TAR and zero otherwise; JAR = a dummy variable taking a value of unity for articles appearing in JAR and zero otherwise; AOS = a dummy variable taking a value of unity for articles appearing in AOS and zero otherwise; CPA = a dummy variable taking a value of unity for articles appearing in CPA and zero otherwise; AAAJ = a dummy variable taking a value of unity for articles appearing in AAAJ and zero otherwise; POSITIVIST_KW = a dummy variable taking a value of unity for articles with at least one positivist keyword in their title (see Appendix 1) and zero otherwise; CII_KW = a dummy variable taking a value of unity for articles with at least one critical-interpretive-interdisciplinary (CII) keyword in their title (see Appendix 1) and zero otherwise; YEAR = year of publication; AUTHORS = total number of authors; UK = a dummy variable taking a value of unity for articles written entirely by UK-based academics and zero otherwise; ELITE% = percentage of the article's reference sources derived from elite business journals; NON-ELITE_HIGH% = percentage of the article's reference sources derived from non-elite business journals ranked '3' or '4' on the ABS Guide; NON-ELITE_LOW% = percentage of the article's reference sources derived from non-elite business journals ranked '1' or '2' on the ABS Guide; NON-BUSINESS_JOURNALS% = percentage of the article's reference sources derived from non-business journals and unlisted by the ABS Guide; BOOKS% = percentage of the article's reference sources derived from either books or monographs; TOTAL_SOURCES = total number of reference sources used to construct the article.
[†] Within this sample we find that 10.84% of references derive from 'Other sources' including articles in newspapers, trade journals and professional outlets, websites and other sources which do not fit into the main categories used within this study. The heterogeneous nature of this group means that it is not treated as a single classification in this study.

Re-estimating the regression with AOS as the omitted reference journal (untabulated) reveals that coefficients for the three positivist journals (JAE, JAR and TAR) are still positive and statistically significant, while the coefficients for CPA and AAAJ are negative and significant, indicating that their articles rely on elite sources to a much lower degree than articles in AOS. Table 2, Panel B, shows that running our secondary regression model, with the journal dummies replaced by the dummy variable POSITIVIST_JOURNALS, reaffirms that articles published in positivist journals have a significantly greater reliance on reference sources appearing in elite journals. We thus reject our null-hypothesis H1.

While the journal dummies control for journal-specific effects within the data, our model also assesses the importance of the individual article's nature, proxied here by the titular keyword dummies POSITIVIST_KW and CII_KW. The coefficients for these dummy variables demonstrate that the presence of a positivist keyword in an article's title is associated with an increased reliance on elite journal reference sources. The presence of a CII keyword in the title generates a negative slope which is statistically significant in Panel B, although not in Panel A. The weak significance level of the CII_KW coefficient in Panel A is likely due to the more refined controls for journal-effects. The time trend variable (YEAR) will be discussed separately in relation to hypotheses H5 and H6, and the remaining control variables are mentioned at the end of this section.

We next examine the extent to which articles rely on reference materials from non-elite business journal sources, beginning with reference sources from journals that are highly ranked ('3' and '4' rated) on the ABS Guide, denoted

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

Table 2
Main regression results.

Panel A: Dummy variables to distinguish individual journals

ELITE%
R-sq: 63.5%
F-stat: 592.9***
n = 2832

	coeff.	t-stat. (OLS)	t-stat. (robust)	t-stat. (cluster)	VIF
Intercept	−778.738	−4.85***	−4.78***	−4.96***	–
JAE	39.966	36.85***	37.25***	41.23***	1.868
TAR	33.322	34.56***	34.62***	40.07***	2.333
JAR	40.021	37.98***	38.71***	44.12***	1.96
AOS	15.839	16.51***	17.73***	14.77***	1.523
AAAJ	2.64	2.81***	3.78***	4.30***	1.535
POSITIVIST_KW	5.428	8.25***	7.71***	8.39***	1.38
CII_KW	−0.645	−1.04	−1.04	−1.01	1.205
YEAR	0.394	4.93***	4.86***	5.03***	1.019
AUTHORS	0.497	1.67*	1.70*	1.54	1.076
UK	−3.667	−4.29***	−5.35***	−5.16***	1.22

NON-ELITE_HIGH%
R-sq: 11.9%
F-stat: 34.5***
n = 2832

	coeff.	t-stat. (OLS)	t-stat. (robust)	t-stat. (cluster)	VIF
Intercept	−813.627	−6.51***	−6.53***	−3.72***	–
JAE	−5.687	−6.73***	−6.81***	−4.06***	1.868
TAR	−1.081	−1.44	−1.33	−0.76	2.333
JAR	−5.217	−6.35***	−6.29***	−3.55***	1.96
AOS	−1.72	−2.30**	−2.23**	−1.26	1.523
AAAJ	5.625	7.68***	6.01***	3.89***	1.535
POSITIVIST_KW	−1.254	−2.44**	−2.63***	−2.30**	1.38
CII_KW	1.073	2.22**	2.13**	1.92*	1.205
YEAR	0.416	6.68***	6.69***	3.80***	1.019
AUTHORS	0.278	1.20	1.27	1.27	1.076
UK	−1.642	−2.47**	−2.13**	−2.04**	1.22

NON-ELITE_LOW%
R-sq: 13.1%
F-stat: 48.7***
n = 2832

	coeff.	t-stat. (OLS)	t-stat. (robust)	t-stat. (cluster)	VIF
Intercept	−126.202	−2.73***	−2.70***	−2.28**	–
JAE	−3.218	−10.27***	−11.07***	−10.17***	1.868
TAR	−1.957	−7.03***	−6.21***	−4.57***	2.333
JAR	−2.94	−9.66***	−9.79***	−8.86***	1.96
AOS	−0.229	−0.83	−0.73	−0.64	1.523
AAAJ	0.731	2.69***	2.11**	2.06**	1.535
POSITIVIST_KW	−0.563	−2.96***	−3.30***	−2.15**	1.38
CII_KW	0.441	2.47**	2.23**	2.28**	1.205
YEAR	0.065	2.82***	2.79***	3.43***	1.019
AUTHORS	0.269	3.13***	2.99***	−2.04**	1.076
UK	−0.714	−2.89***	−2.63***	−2.20**	1.22

NON-BUSINESS_JOURNALS%
R-sq: 10.7%
F-stat: 31.4***
n = 2832

	coeff.	t-stat. (OLS)	t-stat. (robust)	t-stat. (cluster)	VIF
Intercept	203.34	2.69***	2.64***	1.65	–
JAE	−3.731	−7.29***	−6.94***	−4.33***	1.868
TAR	−5.268	−11.59***	−10.72***	−6.64***	2.333
JAR	−5.164	−10.39***	−10.03***	−7.96***	1.96
AOS	−1.067	−2.36**	−1.97**	−1.70*	1.523
AAAJ	−0.378	−0.85	−0.74	−0.57	1.535
POSITIVIST_KW	−0.167	−0.54	−0.58	−0.56	1.38
CII_KW	0.658	2.25**	2.09**	1.82*	1.205
YEAR	−0.096	−2.55**	−2.51**	−1.57	1.019

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

Table 2 (*continued*)

	NON-BUSINESS_JOURNALS% R-sq: 10.7% F-stat: 31.4*** n = 2832				
	coeff.	t-stat. (OLS)	t-stat. (robust)	t-stat. (cluster)	VIF
AUTHORS	−0.173	−1.23	−1.25	−1.35	1.076
UK	−1.99	−4.94***	−4.71***	−4.68***	1.22
	BOOKS% R-sq: 51.5% F-stat: 207.7*** n = 2832				
	coeff.	t-stat. (OLS)	t-stat. (robust)	t-stat. (cluster)	VIF
Intercept	1191.529	8.27***	8.64***	6.12***	–
JAE	−29.244	−30.00***	−29.28***	−18.63***	1.868
TAR	−24.779	−28.60***	−24.75***	−15.84***	2.333
JAR	−17.345	−18.32***	−16.17***	−11.21***	1.96
AOS	−5.052	−5.86***	−4.56***	−3.29***	1.523
AAAJ	−8.05	−9.52***	−7.31***	−5.20***	1.535
POSITIVIST_KW	−3.817	−6.46***	−7.63***	−6.15***	1.38
CII_KW	−0.527	−0.95	−0.85	−0.55	1.205
YEAR	−0.574	−7.99***	−8.35***	−5.91***	1.019
AUTHORS	−1.159	−4.33***	−4.52***	−4.37***	1.076
UK	7.367	9.60***	7.55***	5.20***	1.22
	TOTAL_SOURCES R-sq: 21.8% F-stat: 69.0*** n = 2832				
	coeff.	t-stat. (OLS)	t-stat. (robust)	t-stat. (cluster)	VIF
Intercept	−2561.5	−9.47***	−9.56***	−7.84***	–
JAE	−15.492	−8.47***	−8.31***	−7.56***	1.868
TAR	−12.315	−7.57***	−7.38***	−7.36***	2.333
JAR	−14.984	−8.43***	−8.39***	−7.78***	1.96
AOS	10.75	6.64***	5.26***	4.11***	1.523
AAAJ	5.47	3.44***	2.90***	3.19***	1.535
POSITIVIST_KW	−0.474	−0.42	−0.49	−0.49	1.38
CII_KW	4.88	4.67***	4.36***	4.07***	1.205
YEAR	1.303	9.67***	9.79***	8.02***	1.019
AUTHORS	1.075	2.14**	2.20**	1.84*	1.076
UK	6.911	4.80***	3.87***	3.77***	1.22

Panel B: Dummy variable to distinguish positivist and CII journals

	ELITE% R-sq: 58.6% F-stat: 315.1*** n = 2832				
	coeff.	t-stat. (OLS)	t-stat. (robust)	t-stat. (cluster)	VIF
Intercept	−671.555	−3.95***	−3.89***	−1.76*	–
POSITIVIST_JOURNALS	30.532	40.21***	37.72***	17.52***	1.749
POSITIVIST_KW	5.727	8.20***	7.71***	8.00***	1.376
CII_KW	−1.443	−2.20**	−2.17**	−2.15**	1.198
YEAR	0.344	4.05***	4.00***	1.80*	1.014
AUTHORS	0.682	2.17**	2.29**	2.05**	1.069
UK	−5.126	−5.67***	−6.76***	−5.34***	1.205
	NON-ELITE_HIGH% R-sq: 7.2%				

(*continued on next page*)

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

Table 2 (*continued*)

	NON-ELITE_HIGH% R-sq: 7.2% F-stat: 11.4*** n = 2832				
	coeff.	t-stat. (OLS)	t-stat. (robust)	t-stat. (cluster)	VIF
	F-stat: 11.4*** n = 2832				
	coeff.	t-stat. (OLS)	t-stat. (robust)	t-stat. (cluster)	VIF
Intercept	−891.59	−6.97***	−7.03***	−3.44***	–
POSITIVIST_JOURNALS	−4.318	−7.57***	−7.47***	−4.52***	1.749
POSITIVIST_KW	−1.487	−2.83***	−3.05***	−2.63***	1.376
CII_KW	1.459	2.96***	2.83***	2.52**	1.198
YEAR	0.455	7.14***	7.19***	3.52***	1.014
AUTHORS	0.388	1.64*	1.74*	1.73*	1.069
UK	−1.101	−1.62	−1.40	−1.49	1.205
	NON-ELITE_LOW% R-sq: 11.9% F-stat: 40.9*** n = 2832				
	coeff.	t-stat. (OLS)	t-stat. (robust)	t-stat. (cluster)	VIF
Intercept	−142.524	−3.07***	−3.00***	−1.85*	–
POSITIVIST_JOURNALS	−2.67	−12.86***	−11.63***	−7.81***	1.749
POSITIVIST_KW	−0.592	−3.10***	−3.42***	−2.67***	1.376
CII_KW	0.507	2.83***	2.56**	−2.41**	1.198
YEAR	0.073	3.15***	3.09***	1.91*	1.014
AUTHORS	0.287	3.32***	3.17***	3.64***	1.069
UK	−0.646	−2.62***	−2.41**	−1.90*	1.205
	NON-BUSINESS_JOURNALS% R-sq: 10.1% F-stat: 47.2*** n = 2832				
	coeff.	t-stat. (OLS)	t-stat. (robust)	t-stat. (cluster)	VIF
Intercept	208.117	2.75***	2.68***	1.51	–
POSITIVIST_JOURNALS	−4.368	−12.94***	−12.36***	−8.35***	1.749
POSITIVIST_KW	−0.192	−0.62	−0.67	−0.64	1.376
CII_KW	0.665	2.28**	2.11**	1.84*	1.198
YEAR	−0.099	−2.62***	−2.56**	1.44	1.014
AUTHORS	−0.192	−1.37	−1.39	−1.44	1.069
UK	−1.898	−4.73***	−4.55***	−4.55***	1.205
	BOOKS% R-sq: 46.8% F-stat: 383.0*** n = 2832				
	coeff.	t-stat. (OLS)	t-stat. (robust)	t-stat. (cluster)	VIF
Intercept	1267.287	8.42***	8.75***	3.80***	–
POSITIVIST_JOURNALS	−19.809	−29.50***	−28.47***	−14.83***	1.749
POSITIVIST_KW	−3.57	−5.78***	−6.67***	−5.20***	1.376
CII_KW	−0.564	−0.97	−0.89	−0.84	1.198
YEAR	−0.613	−8.18***	−8.50***	−3.69***	1.014
AUTHORS	−1.438	−5.16***	−5.14***	−5.19***	1.069
UK	7.353	9.21***	7.41***	5.17***	1.205
	TOTAL_SOURCES R-sq: 20.5% F-stat: 118.9*** n = 2832				

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

Table 2 (*continued*)

	TOTAL_SOURCES R-sq: 20.5% F-stat: 118.9*** n = 2832				
	coeff.	t-stat. (OLS)	t-stat. (robust)	t-stat. (cluster)	VIF
	coeff.	t-stat. (OLS)	t-stat. (robust)	t-stat. (cluster)	VIF
Intercept	−2872.790	−9.41***	−9.60**	6.15***	–
POSITIVIST_JOURNALS	−22.599	−16.56***	−15.80***	−11.82***	1.749
POSITIVIST_KW	−0.709	−0.56	−0.40	−0.38	1.376
CII_KW	4.792	4.07***	4.14***	3.84***	1.198
YEAR	1.462	9.61***	9.82**	6.29***	1.014
AUTHORS	1.381	2.44**	2.63***	2.31**	1.069
UK	6.409	3.98***	3.44***	3.48***	1.205

OLS estimation of the primary model is presented in Panel A:

$DepVar\% = a_0 + a_1.AAAJ + a_2.AOS + a_3.JAE + a_4.JAR + a_5.TAR + a_6.POSITIVIST\_KW + a_7.CII\_KW + a_8.YEAR + a_9.AUTHORS + a_{10}.UK + \varepsilon$

OLS estimation of the secondary model is presented in Panel B:

$DepVar\% = b_0 + b_1.POSITIVIST\_JOURNALS + b_2.POSITIVIST\_KW + b_3.CII\_KW + b_4.YEAR + b_5.AUTHORS + b_6.UK + \varepsilon$

where DepVar% = ELITE%, NON-ELITE_HIGH%, NON-ELITE_LOW%, NON-BUSINESS_JOURNALS%, BOOKS% and TOTAL_SOURCES.

Based on 2832 articles appearing in six leading accounting journals between the years 2002 and 13 inclusive:

JAE = a dummy variable taking a value of unity for articles appearing in JAE and zero otherwise; TAR = a dummy variable taking a value of unity for articles appearing in TAR and zero otherwise; JAR = a dummy variable taking a value of unity for articles appearing in JAR and zero otherwise; AOS = a dummy variable taking a value of unity for articles appearing in AOS and zero otherwise; CPA = a dummy variable taking a value of unity for articles appearing in CPA and zero otherwise; AAAJ = a dummy variable taking a value of unity for articles appearing in AAAJ and zero otherwise; POSITIVIST_JOURNALS = a dummy variable taking a value of unity for articles appearing in TAR, JAR or JAE and zero otherwise; POSITIVIST_KW = a dummy variable taking a value of unity for articles with at least one positivist keyword in their title (see Appendix 1) and zero otherwise; CII_KW = a dummy variable taking a value of unity for articles with at least one critical-interpretive-interdisciplinary (CII) keyword in their title (see Appendix 1) and zero otherwise; YEAR = year of publication; AUTHORS = total number of authors; UK = a dummy variable taking a value of unity for articles written entirely by UK-based academics and zero otherwise; ELITE% = percentage of the article's reference sources derived from elite business journals; NON-ELITE_HIGH% = percentage of the article's reference sources derived from non-elite business journals ranked '3' or '4' on the ABS Guide; NON-ELITE_LOW% = percentage of the article's reference sources derived from non-elite business journals ranked '1' or '2' on the ABS Guide; NON-BUSINESS_JOURNALS% = percentage of the article's reference sources derived from non-business journals and unlisted by the ABS Guide; BOOKS% = percentage of the article's reference sources derived from either books or monographs; TOTAL_SOURCES = total number of reference sources used to construct the article.

All *t*-tests conducted using a two-tail test unless stated otherwise. ***, ** and * indicate rejection of the null-hypothesis (zero slope) at the 1%, 5% and 10% levels, respectively. Robust t-statistics are stated based on heteroskedastic-robust and cluster-robust standard errors. The clusters are the 72 journal-years (6 journals and 12 years). F-statistic tests the null-hypothesis of zero slopes.

NON-ELITE_HIGH% here. Panel A shows that the highly positivist JAE and JAR produce the largest negative coefficients. The coefficient for TAR is also negative but not statistically significant. A small negative coefficient is generated for AOS and a positive coefficient emerges for AAAJ indicating its articles' greater reliance on these non-elite sources than for the reference journal, CPA. Panels A and B show that the usage of references from non-elite sources is significantly lower for articles with positivist titular keywords and significantly higher for articles with CII titular keywords. This is a reversal of the findings for ELITE%. This pattern is not driven by self-citations within CPA and AAAJ. Indeed, these two journals have the lowest self-citation percentages.[24]

We now look at the degree to which articles rely on reference sources that are relatively low-rated on the ABS Guide ('1' and '2'), denoted here NON-ELITE_LOW%. This group includes many interdisciplinary and niche accounting journals (e.g. accounting history, education and sustainability). All three of the positivist journals (JAE, JAR and TAR) are associated with significantly lower usage of these sources for the construction of their articles. The insignificant coefficient for AOS indicates that its articles exhibit a similar reliance on low-rated sources to those in CPA, while AAAJ's articles exhibits a greater reliance on these sources. The positivist keyword dummy generates a negative and significant coefficient, while the CII keyword dummy generates a positive and significant coefficient. Panel B reveals that articles appearing in the three positivist journals rely significantly less on non-elite reference sources, with POSITIVIST_JOURNAL generating significant negative coefficients for both NON-ELITE_HIGH% and NON-ELITE_LOW%. We thus reject the null-hypothesis H2.

Overall there is a striking difference between the usage of ranked journal sources in positivist and CII research papers. Between the years 2002 and 13, a significantly greater reliance on reference sources drawn from elite business journals is associated with the host journal being a positivist journal, and the article's title containing at least one of the positivist keywords in Appendix 1. A significantly greater reliance on reference sources drawn from non-elite business journals is associated with the host journal being a CII journal, and the title containing at least one CII keyword.

[24] Self-citation percentages are given in Appendix 2.

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

5.1.2. Reliance on other sources (H3, H4)

Reliance on reference sources appearing within non-business journals is measured by NON-BUSINESS_JOURNALS%: the results are similar to those for low-rated business journals (NON-ELITE_LOW%). In particular, Panel A of Table 2 shows that the dummy variables for the three positivist journals (JAE, JAR and TAR) generate large negative coefficients, indicating reduced reliance on non-business journal sources, relative to our regression's reference journal, CPA. For AOS, reliance on non-business journal sources is also lower than for CPA but the coefficient is much smaller in magnitude than for the three positivist journals. The difference between CPA and AAAJ is insignificant. The coefficient for CII keywords is positive and significant, while that for positivist keywords is negative, albeit not statistically significant. In Panel B we see from the coefficient for POSITIVIST_JOURNALS that articles appearing in the three positivist journals rely on non-business journal sources to a significantly lower extent than articles in the CII journals.

With regard to reliance on references from books and monographs (BOOKS%), the three positivist journals generate strong negative coefficients, indicating a very much lower level of reliance on reference sources from books than is the case for the reference journal, CPA. Articles appearing in the CII journals AOS and AAAJ also rely to a significantly lesser extent on reference sources from books than do articles in CPA, but the coefficients are much smaller in magnitude than those for JAE, JAR and TAR. With regard to the keyword dummies, articles with positivist titular keywords rely on book-based reference materials to a significantly lesser degree. The coefficient for the CII keyword dummy is not statistically significant at any of the conventional probability levels (i.e. 0.01, 0.05 and 0.10). Panel B shows that articles appearing in positivist journals rely to a significantly lower degree on reference sources appearing in books and monographs. The negative slope for POSITIVIST_JOURNALS leads us to reject the null-hypothesis H3.

Finally we examine the total number of sources used in the construction of articles (TOTAL_SOURCES). Relative to our reference journal, CPA, the regression results show that articles in the three positivist journals draw upon a much smaller set of sources for their construction. The coefficients for JAE, JAR and TAR are negative and highly significant. The two other CII journals generate positive and significant coefficients, with AOS being the highest. The coefficient for POSITIVIST_JOURNALS in Panel B shows that articles appearing in positivist journals use a significantly smaller set of total sources for their construction than articles in CII journals. We thus reject the null hypothesis H4.

The results of testing H1 to H4 reveal a clear dichotomy between the CII and positivist journals in terms of the number of sources used in the construction of their articles, and the quality-mix of these sources. Positivist articles tend to be constructed from a smaller set of sources, mostly elite business journals. CII articles tend to draw from a larger range of sources, and a more diverse mix.

Prior to examining the trends in reference sources, it is worth commenting briefly on the number of authors (AUTHORS) and the effect of UK-based authorship (UK). The primary patterns to note are that larger teams of authors are associated with greater reliance on elite sources, reflecting an authorship pattern popular within the natural sciences, and lower usage of book sources. UK-based authorship is strongly associated with greater usage of book references – this characteristic will be examined further in Section 5.3.

5.2. Trends in the reliance of articles on different reference sources for their construction

5.2.1. Generic time trends across all articles (H5)

Hypothesis H5 relates to the usage of reference sources from elite journals but we will also examine time trends for each of our other dependent variables. Results for ELITE%, NON-ELITE_HIGH%, NON-ELITE_LOW%, NON-BUSINESS_JOURNALS% and BOOKS%, presented in Table 2, each contain the time trend variable YEAR. The coefficients for YEAR provide an insight into the generic trend across the whole sample. Results presented in Table 2 are materially similar for both our main model (Panel A) and our secondary model (Panel B) and so our discussion is based primarily on the results in Panel A.

Examination of the YEAR coefficients reveals that the greatest upward trends are observed for the two most highly ranked groups of sources. High positive coefficients are obtained for the YEAR variable for both ELITE% (0.394) and NON-ELITE_HIGH % (0.416) with both being highly significant. The opposite trend is observed for the usage of reference sources from our two unlisted categories: negative coefficients for YEAR are obtained for both NON-BUSINESS_JOURNALS% and BOOKS%, although it can be noted that the YEAR coefficient for BOOKS% (−0.574) reveals a much steeper decline over the test period than the equivalent coefficient for NON-BUSINESS_JOURNALS% (−0.096).[25] While the time trend for low-rated business sources (NON-ELITE_LOW%) is positive, the coefficient (0.065) is only a fraction of that for the higher rated sources (ELITE% and NON-ELITE_HIGH%).

Taken together, these results suggest a significant increase in the usage of elite and highly ranked sources as the basis for article construction during the period 2002–13 and a significant decrease in the reliance on sources which do not appear on business journal ranking lists. We therefore reject the null-hypothesis H5. Of course, these trends are for articles across the whole sample and it is possible that they may be driven by articles appearing in a subset of these journals. To investigate this possibility, we next re-estimate our regression models on a journal-by-journal basis.

[25] The statistical significance of the latter is notably weaker.

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

Table 3
Examining the YEAR coefficient on a journal-by-journal basis.

Journal	ELITE%	NON-ELITE_HIGH%	NON-ELITE_LOW%	NON-BUSINESS_JOURNALS%	BOOKS%	TOTAL_SOURCES
AAAJ	0.016	0.463**	0.01	0.078	−0.759***	1.679***
AOS	0.083	0.213	−0.068	0.158	−0.444*	0.9*
CPA	0.442***	1.428***	0.163**	−0.331***	−1.109***	1.235***
JAE	0.712***	0.106	−0.016	−0.48***	−0.168**	1.417***
JAR	0.39*	0.16	−0.004	0.03	−0.62***	1.658***
TAR	0.574***	0.082	0.173***	−0.031	−0.332***	1.082***
All three positivist journals: JAE, JAR, TAR	0.465***	0.167**	0.086***	−0.126***	−0.431***	1.354***
All three CII journals: AOS, CPA, AAAJ	0.181	0.804***	0.056	−0.065	−0.827***	1.298***

Estimates of the coefficient g_3 in the following OLS model:
$DepVar\% = g_0 + g_1.POSITIVIST\_KW + g_2.CII\_KW + \boldsymbol{g_3.YEAR} + g_4.AUTHORS + g_5.UK + \varepsilon$
where DepVar% = ELITE%, NON-ELITE_HIGH%, NON-ELITE_LOW%, NON-BUSINESS_JOURNALS%, BOOKS% and TOTAL_SOURCES.
Based on 2832 articles appearing in six leading accounting journals between the years 2002 and 13 inclusive:
ELITE% = percentage of the article's reference sources derived from elite business journals; NON-ELITE_HIGH% = percentage of the article's reference sources derived from non-elite business journals ranked '3' or '4' on the ABS Guide; NON-ELITE_LOW% = percentage of the article's reference sources derived from non-elite business journals ranked '1' or '2' on the ABS Guide; NON-BUSINESS_JOURNALS% = percentage of the article's reference sources derived from non-business journals and unlisted by the ABS Guide; BOOKS% = percentage of the article's reference sources derived from either books or monographs; TOTAL_SOURCES = total number of reference sources used to construct the article; POSITIVIST_KW = a dummy variable taking a value of unity for articles with at least one positivist keyword in their title (see Appendix 1) and zero otherwise; CII_KW = a dummy variable taking a value of unity for articles with at least one critical-interpretive-interdisciplinary (CII) keyword in their title (see Appendix 1) and zero otherwise; YEAR = year of publication; AUTHORS = total number of authors; UK = a dummy variable taking a value of unity for articles written entirely by UK-based academics and zero otherwise. All *t*-tests conducted using a two-tail test unless stated otherwise. ***, ** and * indicate rejection of the null-hypothesis (zero slope) at the 1%, 5% and 10% levels, respectively.

5.2.2. Time trends for CII and positivist journals (H6)

Re-estimating our main regression model for each journal separately allows an inspection of the time trend for each journal whilst still controlling for the other factors in the model. The coefficient of interest is the slope for YEAR and its estimated values across journals and classes of reference sources are presented in Table 3.[26] Using the example of ELITE%:

$$ELITE\% = g_0 + g_1.POSITIVIST\_KW + g_2.CII\_KW + g_3.YEAR + g_4.AUTHORS + g_5.UK + \varepsilon$$

We will begin with articles appearing in the three positivist accounting journals – JAE, JAR and TAR. The steepest increase in the reliance on elite journal sources during 2002–13 is observed for the positivist journal JAE. The coefficient for YEAR is the highest across all six journals, at 0.712, and highly statistically significant. The next highest YEAR coefficient is found for TAR, with a value of 0.574, and again this is highly statistically significant. While the time trend for JAR is positive, its value (0.390) is smaller than for JAE and TAR and it is significant only at the 6.2% level. However, overall these results indicate an increasing reliance on elite journal reference sources.

Turning next to articles appearing in the three CII journals (AAAJ, AOS and CPA) we find a rather different pattern with regard to reliance on elite journal source materials. In the case of AAAJ and AOS the time trend coefficient is not significant at any conventional probability level. The exception among CII journals is CPA where a positive and significant coefficient is generated. The magnitude of the YEAR coefficient (0.442) is still lower than for JAE and TAR, however. Examining articles on the basis of a positivist/CII dichotomy shows no significant trend in the usage of elite source materials across the set of CII journals but a significant positive trend in the use of elite source materials by articles appearing in the positivist journals. We thus reject the null-hypothesis H6.

Examining the reliance on reference sources which appear in highly rated but non-elite journals (NON-ELITE_HIGH%), there is a clear distinction between the CII and positivist journals. Across all three CII journals, there is an increase in the degree to which their articles draw upon these sources. The steepest rise is observed for CPA, followed by AAAJ and then AOS, the last of these being statistically insignificant. By contrast, none of the YEAR coefficients for the three positivist journals are significant, indicating no trend in the usage of these non-elite sources. For lower-rated non-elite sources (NON-ELITE_LOW%) four of the six journals show no significant trend. The rise in lower-ranked journal sources in TAR and CPA appears to be partially replacing books (see below), so there is a shift from an unranked source to a ranked source.

The two sources which show the largest decline are books (BOOKS%) and non-business journals (NON-BUSINESS_JOURNALS%). Across all six journals there is a significant negative time trend in the use of books as reference sources. The most notable declines have been in articles appearing in CPA and AAAJ, with large negative YEAR coefficients. AOS also generates a negative YEAR coefficient although the magnitude of this coefficient is smaller than for

[26] Estimating the model at the level of the individual journal means that there is no need for controls for journal effects, whether for individual journals or the positivist group. Thus, the distinction between our main model and our secondary model disappears for these regressions. In addition, conducting regressions per journal means that the number of journal-year clusters falls to 12 (i.e. years only), too small for reliable inferences for these regressions and so only OLS results are presented.

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

the other two CII journals and has a weaker significance level. These declining patterns are repeated for articles which appear in the three positivist journals, generating significant negative YEAR coefficients. These results demonstrate that the broad negative trend identified in the initial regression model for BOOKS% is a journal-wide phenomenon.

The results for NON-BUSINESS_JOURNALS% are much less consistent than those for book sources. Reliance on non-business journals for the construction of articles has not changed significantly for four of the six journals during 2002–13. For AAAJ, AOS, JAR and TAR the YEAR coefficients are insignificantly different from zero at any conventional level. The general fall in reliance on non-business sources identified in the initial overall regression appears to be driven by CPA and JAE. Given that Lowe and Locke (2005) identify these as the two most extreme journals in terms of the CII-positivist spectrum, it is odd that they should exhibit similar patterns here. Non-business journal sources are being replaced by higher-rated sources – elite business journal sources in the case of JAE, and elite and high-ranked business journal sources in the case of CPA (see Table 3).

5.3. A closer look at book sources

The most consistent trend in the usage of reference sources, identified across all six journals, is the decline in the usage of books as source materials for the construction of accounting papers.[27] However, across the period 2002–13, articles with UK-based authorship make much greater use of book sources. The dummy variable UK generates large positive coefficients for the BOOKS% regressions in Panels A and B of Table 2. If the increasing influence of ranking lists during this period partly explains the decline in using book sources to construct new papers, then it may be expected that the emergence of the UK's ABS Guide in 2007 would have a discernible impact on book usage by UK authors. This effect, if it exists, would likely take time to establish itself, but it may be observable within our data.

To examine this further we modify our main regression model to examine whether the periods 2008–10 and 2011–13 exhibited reductions in book usage among UK authors beyond the general trend identified by the YEAR variable. We re-estimate our main model with two new dummy variables, one for UK-authored papers in the early ABS period (EARLY_ABS_UK) and one for UK-authored papers in the later ABS period (LATER_ABS_UK).

$$BOOKS\% = a_0 + a_1.AAAJ + a_2.AOS + a_3.JAE + a_4.JAR + a_5.TAR + a_6.POSITIVIST_{KW} + a_7.CII_{KW} + a_8.YEAR + a_9.AUTHORS + a_{10}.UK + a_{11}.EARLY\_ABS\_UK + a_{12}.LATER\_ABS\_UK + \varepsilon$$

YEAR is retained to control for the negative trend in BOOKS% identified in Tables 2 and 3. The two new dummy variables reveal how UK usage of books has fallen beyond this general negative trend. The results of our regression are presented in Table 4. Because we can employ the full sample of observations for this regression, we also report cluster-robust t-statistics.

The coefficient for YEAR reaffirms the negative time trend in book usage. The dummy variable for UK authored papers in the early years of the ABS period (EARLY_ABS_UK) generates a negative slope but it is not statistically significant at any conventional probability level. However, the coefficient for the second new dummy variable, representing UK authored papers in the later ABS period (LATER_ABS_UK) is negative and significant. This would be consistent with a more rapid decline in the usage of book references by UK authors in the years when the ABS Guide had become more strongly established.

5.4. A closer look at AOS

Although we have classified AOS as a CII journal, following Lowe and Locke (2005), during the last four decades AOS has published many papers with a strong positivist focus (see Gendron & Baker, 2005). The findings above indicate that positivist papers rely significantly more on elite reference sources for their construction than do other accounting papers. Given the original aims of AOS, it is possible that the positivist papers appearing in the journal may have some characteristics which distinguish them from articles appearing in the three leading positivist journals. To examine whether reliance on elite sources is the same for positivist papers appearing in AOS relative to those in JAE, JAR and TAR, we reduce our sample to only those articles which have one of our positivist keywords in their titles, and remove any papers appearing in CPA and AAAJ.

Our main regression model is employed again but the positivist and CII keyword dummy variables are now redundant, as are the journal dummies CPA and AAAJ. The model uses AOS as the omitted reference journal.

$$ELITE\% = h_0 + h_1.JAE + h_2.JAR + h_3.TAR + h_4.YEAR + h_5.AUTHORS + h_6.UK + \varepsilon$$

The results are given in Table 5.

The results in Table 5 demonstrate that the differences in the reliance of AOS articles on elite sources relative to articles in JAE, JAR and TAR, remain statistically significant even when we limit our sample to positivist papers only. Positivist papers in

[27] From our dataset we can identify those articles which use the largest total numbers of books and monographs as reference sources (untabulated), and we can report that the top-20 articles of this type appear exclusively within the CII journals. The largest proportion of these articles relate to historical topics (45%), with the remainder focusing on social analysis (20%), environmental issues (15%), audit and management (15%) and professions (5%). Half of these articles appeared in AOS.

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

Table 4
Books and monographs as reference sources for accounting articles.

	BOOKS% R-sq: 51.6% F-stat: 206.2*** n = 2832				
	coeff.	t-stat. (OLS)	t-stat. (robust)	t-stat. (cluster)	VIF
Intercept	1075.56	7.06***	7.73***	5.44***	–
JAE	−29.308	−30.09***	−29.38***	−19.04***	1.87
TAR	−24.858	−28.70***	−24.86***	−16.21***	2.337
JAR	−17.395	−18.39***	−16.23***	−11.39***	1.961
AOS	−5.137	−5.96***	−4.64***	−3.46***	1.525
AAAJ	−8.148	−9.64***	−7.39***	−5.50***	1.538
POSITIVIST_KW	−3.781	−6.40***	−7.60***	−6.24***	1.382
CII_KW	−0.525	−0.94	−0.85	−0.86	1.205
YEAR	−0.516	−6.79***	−7.45***	−5.24***	1.142
AUTHORS	−1.167	−4.37***	−4.55***	−4.52***	1.078
UK	8.689	8.15***	6.09***	4.30***	2.359
EARLY_ABS_UK	−0.904	−0.60	−0.46	−0.37	1.723
LATER_ABS_UK	−4.633	−2.63***	−2.26**	−2.08**	1.592

Estimation of the following model using OLS:
$BOOKS\% = a_0 + a_1.AAAJ + a_2.AOS + a_3.JAE + a_4.JAR + a_5.TAR + a_6.POSITIVIST\_KW + a_7.CII\_KW + a_8.YEAR + a_9.AUTHORS + a_{10}.UK + a_{11}.EARLY_{ABS_{UK}} + a_{12}.LATER_{ABS_{UK}} + \varepsilon$
Based on 2832 articles appearing in six leading accounting journals between the years 2002 and 13 inclusive:
JAE = a dummy variable taking a value of unity for articles appearing in JAE and zero otherwise; TAR = a dummy variable taking a value of unity for articles appearing in TAR and zero otherwise; JAR = a dummy variable taking a value of unity for articles appearing in JAR and zero otherwise; AOS = a dummy variable taking a value of unity for articles appearing in AOS and zero otherwise; CPA = a dummy variable taking a value of unity for articles appearing in CPA and zero otherwise; AAAJ = a dummy variable taking a value of unity for articles appearing in AAAJ and zero otherwise; POSITIVIST_KW = a dummy variable taking a value of unity for articles with at least one positivist keyword in their title (see Appendix 1) and zero otherwise; CII_KW = a dummy variable taking a value of unity for articles with at least one critical-interpretive-interdisciplinary (CII) keyword in their title (see Appendix 1) and zero otherwise; YEAR = year of publication; AUTHORS = total number of authors; UK = a dummy variable taking a value of unity for articles written entirely by UK-based academics and zero otherwise; BOOKS% = percentage of the article's reference sources derived from either books or monographs; EARLY_ABS_UK = a dummy variable taking a value of unity for UK-authored papers appearing in the early post-ABS years (2008, 2009 and 2010) and zero otherwise; LATER_ABS_UK = a dummy variable taking a value of unity for UK-authored papers appearing in the later post-ABS years (2011, 2012 and 2013) and zero otherwise. All *t*-tests conducted using a two-tail test unless stated otherwise. ***, ** and * indicate rejection of the null-hypothesis (zero slope) at the 1%, 5% and 10% levels, respectively. Robust t-statistics are stated based on heteroskedastic-robust and cluster-robust standard errors. The clusters are the 72 journal-years (6 journals and 12 years). F-statistic tests the null-hypothesis of zero slopes.

Table 5
Additional tests of AOS articles during 2002–13.

	Test 1: Positivist keyword articles only: AOS vs. JAE, TAR and JAR ELITE% R-sq: 12.9% F-stat: 23.3*** n = 950			Test 2: AOS articles only: Positivist keyword articles vs. CII keyword articles ELITE% R-sq: 8.5% F-stat: 7.28*** n = 396		
	coeff.	t-statistic	VIF	coeff.	t-statistic	VIF
Intercept	−1312.88	−4.41***	–	−140.996	−0.306	–
JAE	22.218	8.96***	4.008	–	–	–
TAR	16.494	6.95***	4.995	–	–	–
JAR	23.191	9.48***	4.317	–	–	–
POSITIVIST_KW	–	–	–	0.673	4.53***	1.035
CII_KW	–	–	–	0.083	0.363	1.018
YEAR	0.673	4.53***	1.013	0.083	0.363	1.039
AUTHORS	−0.662	−1.12	1.016	1.665	1.869*	1.123
UK	−7.777	−1.74*	1.049	−7.379	−3.902***	1.082

Estimation of the following model using OLS:
Test 1 regression: $ELITE\% = h_0 + h_1.JAE + h_2.JAR + h_3.TAR + h_4.YEAR + h_5.AUTHORS + h_6.UK + \varepsilon$
Test 2 regression: $ELITE\% = k_0 + k_1.POSITIVIST_{KW} + k_2.CII_{KW} + k_3.YEAR + k_4.AUTHORS + k_5.UK + \varepsilon$
JAE = a dummy variable taking a value of unity for articles appearing in JAE and zero otherwise; TAR = a dummy variable taking a value of unity for articles appearing in TAR and zero otherwise; JAR = a dummy variable taking a value of unity for articles appearing in JAR and zero otherwise; AOS = a dummy variable taking a value of unity for articles appearing in AOS and zero otherwise; YEAR = year of publication; AUTHORS = total number of authors; UK = a dummy variable taking a value of unity for articles written entirely by UK-based academics and zero otherwise; ELITE% = percentage of the article's reference sources derived from elite business journals.
All *t*-tests conducted using a two-tail test unless stated otherwise. ***, ** and * indicate rejection of the null-hypothesis (zero slope) at the 1%, 5% and 10% levels, respectively. F-statistic tests the null-hypothesis of zero slopes.

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

Table 6
Summary of supporting evidence for our main hypotheses.

Our conclusions from testing H1–H6	Results	Finding
Reject H1: Articles in the three leading positivist journals draw more heavily on prior research appearing in 'elite' business journals for their construction than do articles in the three leading CII journals	Table 2, Panel B: ELITE%	Significant positive coefficient for POSITIVIST_JOURNALS
Reject H2: Articles in the three leading positivist journals draw less heavily on prior research appearing in 'non-elite' business journals for their construction than do articles in the three leading CII journals	Table 2, Panel B: NON-ELITE_HIGH% and NON-ELITE_LOW%	Significant negative coefficient for POSITIVIST_JOURNALS
Reject H3: Articles in the three leading positivist journals draw less heavily on prior research appearing beyond the realm of academic business journals for their construction than do articles in the three leading CII journals	Table 2, Panel B: BOOKS%	Significant negative coefficient for POSITIVIST_JOURNALS
	NON-BUSINESS_JOURNALS	Significant negative coefficient for POSITIVIST_JOURNALS
Reject H4: Articles in the three leading positivist journals draw from a smaller set of reference sources for their construction than do articles in the three leading CII journals	Table 2, Panel B: TOTAL_SOURCES	Significant negative coefficient for POSITIVIST_JOURNALS
Reject H5: The degree to which articles across the whole sample draw upon prior research appearing in 'elite' journals for their construction has increased from 2002 to 2013	Table 2, Panels A & B: ELITE%	Significant positive coefficient for YEAR
Reject H6: The degree to which articles appearing in positivist and CII journals draw upon prior research appearing in 'elite' journals has changed differentially during 2002–13	Table 3: Positivist (JAE, JAR, TAR) CII (AOS, CPA, AAAJ)	Significant positive coefficient for YEAR No significant trend for YEAR

the three leading positivist journals exhibit ELITE% figures significantly higher than for similar papers in AOS. The difference between the reference sources for positivist AOS articles and those in the three positivist journals may reflect the fact that positivism exists in different fields of research. Since its formation, AOS has been a leading outlet for US-style behavioural studies which adopt a positivist perspective, rather than market-based studies. The latter frequently employ ideas from finance and economics (Lee & Williams, 1999, Table 6, p. 881) and draw heavily from elite-ranked finance and economics journals for their reference sources, while the former draw from a wider range of reference sources (e.g. behavioural psychology) which fall beyond the remit of many business school ranking guides.

A related question which could arise is whether CII and positivist papers in AOS differ in terms of their reliance on elite reference sources? To examine this we reduce our sample to only those articles appearing in AOS. We then estimate:

$$ELITE\% = k_0 + k_1.POSITIVIST\_KW + k_2.CII\_KW + k_3.YEAR + k_4.AUTHORS + k_5.UK + \varepsilon$$

Table 5 shows that the estimated coefficient for POSITIVIST_KW is positive and statistically significant, indicating that a similar trend exists within AOS positivist versus CII papers as exists in the broader sample.[28]

6. Discussion

6.1. Summary of the main findings

This paper examines the degree to which articles appearing between 2002 and 2013 in six leading accounting journals (CPA, AOS, AAAJ, JAE, TAR and JAR) rely on different reference sources for their construction. The results provide empirical evidence that positivist accounting researchers tend to draw from a significantly narrower range of reference sources than their CII counterparts. A summary of these findings is contained in Table 6.

Our paper makes several contributions to the extant literature. Firstly, it provides further evidence on how the US positivist tradition differs from other areas of accounting. Our results provide an empirical illustration of the differences between these two research communities that have been alluded to in prior research (see Williams & Rodgers, 1995; Lee & Williams, 1999; Williams et al., 2006; Hopwood, 2009). CII research draws from a much wider palette both in terms of the quality-mix of business journals and also the usage of books and non-business journals. They also draw from a larger set of sources. These findings could be viewed as further evidence of the relative narrowness and elitist criticisms that have been levelled at the US positivist journals.

Secondly, we find evidence that across the years 2002–13, there has been a shift in the balance of reference sources for articles. In general, there has been a move away from a reliance on books, monographs and unranked sources to higher-

[28] Given that the number of journal-year clusters is notably reduced in this section's regression tests, only the OLS results are presented in Table 5.

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

ranked sources for the construction of articles. This could be linked to the rise of journal ranking lists and a desire on the part of authors to signal the quality of their work by building it upon reference sources which have been awarded the highest ratings in these guides. This was described in Section 3 but is developed further in the next section.

6.2. Signalling in the publication process

Prior research has shown that academics use journal rankings to signal their research achievements to promotion panels (Walker et al., 2018), and evidence of signalling has also been presented in relation to the academic publication process (Endenich & Trapp, 2018a,b). Our paper may be interpreted as providing further evidence on the signalling hypothesis.

The most notable trends in reference sources are the rise in the usage of high-ranked reference sources and the journal-wide decline in references from books and monographs. Given the growing tendency for assessors and reviewers to utilise journal rankings as proxies for an article's 'quality' (Walker et al., 2018; Picard et al., 2018), it is possible that authors will seek to signal the quality of their paper to editors and reviewers by drawing heavily upon high-ranked source materials. This is a phenomenon driven by the rise of journal ranking lists, which we discussed earlier in this paper.

However, it is possible that there may also be a more direct link with the signalling process hypothesised by Endenich and Trapp (2018a,b). Their study suggests that the make-up of a journal's editorial board can signal the journal's expectations regarding the methods that are considered worthy of publication and, by deduction, those that are not. What if a similar effect operates with regard to referencing? The editor of TAR acknowledged that membership of the TAR editorial board required an individual to have published previously in TAR:

> "I imposed this criterion to protect submitting authors, under the rationale that reviewers who had never experienced success at TAR would likely be less inclined to recommend letting someone else experience success at TAR. While well-intended to help authors rather than hurt them, I recognize that this criterion could have been construed the wrong way if some interpreted it as an exclusionary signal." (Kachelmeier, 2018, p. 62)

This quote is interesting not only for its reference to exclusionary signals to authors but because it makes a direct link between publishing in elite journals and editorial board membership, at least in the case of TAR. The quote also indicates that the TAR editor considered publications in that journal to be such a strong hallmark of excellence that not to have published in it was to be excluded from consideration for board membership. Endenich and Trapp (2018, Table 4, p. 13) report that the members of TAR's editorial board all had strong publication records in the elite positivist journals, prior to their appointment. Given the characteristic similarities between the leading positivist journals (Lee & Williams, 1999, p. 874; Williams et al., 2006, p. 790) it would not be surprising if authors regarded the publication patterns of board members as signals of what was most likely to be considered an appropriate reference source upon which to build a new paper. If non-publication in the elite journals is known to be a bar on becoming a member of the editorial board of these same journals, perhaps this sends a signal regarding the type of reference sources that should be used in the construction of papers for these same journals.[29]

Thus, referencing choices may reflect two types of signal. Firstly, there is a desire on the part of authors to signal their paper's quality to external reviewers (editors and reviewers) via its heavy reliance on high-ranked sources. This links with the rise of journal rankings as measures of research quality (Walker et al., 2018) and is consistent with our time trend results for H5. Secondly, if authors identify signals regarding methodological choices from the make-up of a journal's editorial board, then they may also view the publication outlets used by these board members as signals of what are considered appropriate reference sources upon which to build their own papers.[30]

6.3. Additional issues

6.3.1. The ABS rankings

This study could be criticised for its use of the ABS *Academic Journal Guide 2015* (AJG) for grading the reference sources. We would respond with the following points. Firstly, while our definition of elite journals (ELITE%) is taken from the 4* ratings in the ABS guide, the 4* rating requires a journal to be high-ranked on at least three of five international lists. Hence, the journals classed as elite in this paper are likely to be considered elite journals across many geographic regions. Secondly, the ABS Guide plays no significant role in determining three more of our classification variables – BOOKS%, NON-BUSINESS_JOURNALS% and TOTAL_SOURCES. The results for these four classes of references can, therefore, be viewed as being independent from the ABS Guide.

[29] This scenario suggests that the signalling described by Endenich and Trapp (2018a) may be a more complex process. Indeed, Endenich and Trapp (2018b, Fig. 1, p. 86) suggest a number of possible refinements to their original model.

[30] This second form of signalling is conjecture based on the evidence relating to TAR but it represents a potential avenue for the further development of Endenich and Trapp's (2018a) signalling hypothesis.

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

6.3.2. Trimming criteria

Our study trims the most extreme five percent of articles in terms of total references. This was done to ensure that our findings were representative of the normal range of papers appearing in positivist and CII journals. We have re-estimated our main models using various trimming criteria, including untrimmed data, and the main results hold (untabulated).

6.3.3. Identifying positivist and CII keywords

We acknowledge that alternative methods of identifying positivist and CII keywords exist. Our paper focuses on titular keywords but future research may employ more detailed textual analyses. In our sample there are around seven percent of cases where articles contain both positivist and CII keywords in their titles (see Appendix 2). These were retained within our study but their inclusion/exclusion does not materially impact our results.

6.3.4. Future research

We find notable trends within our sample, with a general rise in the use of references from elite business journals and a fall in the use of references from unranked formats, especially books. We infer that this is driven partly by the influence of ranking lists on academics' perceptions of what counts as 'good' research. At present this is conjecture based on recent evidence from Walker et al. (2018), which provides some support for this notion in relation to how academics signal their own research excellence in applications to external reviewers. Future researchers may conduct surveys and focus groups among accounting academics to better understand the motivations for referencing prior research in their own papers.

7. Conclusion

This paper provides, to our knowledge, the first examination of the different source materials used by both positivist and CII accounting researchers for the construction of their papers. Our study focuses on articles appearing in three leading positivist journals (TAR, JAR and JAE) and three leading CII journals (AOS, CPA and AAAJ) during the period 2002–13. Positivist articles utilise a smaller number of sources in the construction of their papers and these are more heavily focused on a small set of elite business journals. They also utilise fewer book and non-business journal sources than CII researchers. In contrast, we find that CII articles draw from a larger range of reference sources and these are much more diverse including non-elite journals, non-business journals and books.

Regarding time trends, there has been a notable increase in the reliance on elite journal sources and high-ranked journal sources for the construction of accounting papers across the period 2002–13, a period which has seen the increasing influence of ranking lists on academic decision making. The usage of non-business journal and book sources has moved in the opposite direction, both showing significant declines across this same period. These trends are consistent with the notion that journal ranking lists may be influencing which reference sources are considered worthy of being used in the construction of accounting papers.

We suggest that the variations in reference usage may reflect signalling by authors. The use of high-ranked reference sources may be used to signal to editors and reviewers that the authors' paper derives from prior research with the highest hallmark of excellence. This trend appears to have grown as journal ranking guides have become more widely used.

Acknowledgements

We acknowledge the very significant contribution of the Editor and the two anonymous reviewers in refocusing the paper's conceptual framework and empirical design. This has made a significant impact on the paper. We would also like to express our thanks to Duncan McLean for his significant contribution towards the formation of the dataset used in this paper. Finally, we acknowledge the financial support provided by our respective universities and to Prof David Oldroyd (Newcastle) for his support in the genesis of the dataset.

Appendix 1. Titular keywords for positivist and CII articles

CII keywords
analysis
capitalism
case
change
construct
critical
develop
environ

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

government
new
organi
perspect
politic
practic
profession
public
responsibility
social
study
system
theory
Positivist keywords
accrual
analyst
base
capitalization
compensat
cost
decision
earnings
equity
forecast
incentiv
investor
price
quality
returns
stocks
tax
value

This list of keywords and keyword stems is used to create POSITIVIST_KW and CII_KW dummy variables.

Appendix 2. Additional data

Journal	Positivist and CII keywords in title (%)	Self (host journal) citations (%)
JAE	8.49	12.21
TAR	9.71	10.85
JAR	8.64	13.18
AOS	6.31	13.05
CPA	5.26	6.79
AAAJ	4.3	8.94

References

Adler, N. J., & Harzing, A. (2009). When knowledge wins: Transcending the sense and nonsense of academic rankings. *Academy of Management Learning and Education, 8*, 72–95.
Ashford, S. (2013). Having scholarly impact: The art of hitting academic home runs. *Academy of Management Learning and Education, 12*, 623–633.
Association of Business Schools (2015). Academic Journal Guide 2015.: http://charteredabs.org/academic-journal-guide-2015/ (Accessed: 25 September 2015).
Brooks, C., Fenton, E., Schopohl, L., & Walker, J. (2019). Why does research in finance have so little impact? *Critical Perspectives on Accounting, 58*, 24–52.
Brown, L. D. (1996). Influential accounting articles, individuals, Ph.D. granting institutions and faculties: A citation analysis. *Accounting, Organizations and Society, 21*, 723–754.
Carr, K. (2011). *Improvements to Excellence in Research for Australia (ERA)*. Ministerial Statement to the Senate Economics Legislation Committee. (Canberra, Australia: Ministry for Innovation, Industry, Science and Research).

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

Chua, W. F. (1986). Radical developments in accounting thought. *The Accounting Review, 61*, 601–632.
Collet, F., & Vives, L. (2013). From pre-eminence to prominence: The fall of U.S. business schools and the rise of European and Asian business schools in the Financial Times Global MBA rankings. *Academy of Management Learning and Education, 12*, 540–563.
Cooper, D., & Tinker, A. (1990). Editorial. *Critical Perspectives on Accounting, 1*, 1–3.
Currie, R. R., & Pandher, G. (2013). Management education journals' rank and tier by active scholars. *Academy of Management Learning and Education, 12*, 194–218.
Endenich, C., & Trapp, R. (2018a). Signaling effects of scholarly profiles – The editorial teams of North American accounting association journals. *Critical Perspective on Accounting, 51*, 4–23.
Endenich, C., & Trapp, R. (2018b). Rejoinder: Toward an overarching signaling framework – The editorial teams of North American accounting association journals. *Critical Perspective on Accounting, 51*, 84–86.
Everett, J., Neu, D., Rahaman, A. S., & Maharaj, G. (2015). Praxis, Doxa and research methods: Reconsidering critical accounting. *Critical Perspectives on Accounting, 32*, 37–44.
Fleming, R. J., Graci, S. P., & Thompson, J. E. (2000). The dawning of the age of quantitative/empirical methods in accounting research: Evidence from the leading authors of The Accounting Review, 1966–1985. *Accounting Historians Journal, 27*, 43–72.
Gendron, Y., & Baker, C. R. (2005). On interdisciplinary movements: The development of a network of support around Foucaultian perspectives in accounting research. *European Accounting Review, 14*, 525–569.
Giacalone, R. A. (2009). Academic rankings in research institutions: A case of skewed mind-sets and professional amnesia. *Academy of Management Learning and Education, 8*, 122–126.
Gray, R., & Milne, M. J. (2015). It is not what you do, it is the way that you do it? Of method and madness. *Critical Perspectives on Accounting, 32*, 51–66.
Hitt, M. A., & Greer, C. R. (2012). The value of research and its evaluation in business schools: Killing the goose that laid the golden egg? *Journal of Management Inquiry, 21*, 236–240.
Hopwood, A. G. (1976). The path ahead. *Accounting, Organizations & Society, 1*, 1–4.
Hopwood, A. G. (2008). Changing pressures on the research process: On trying to research in an age when curiosity is not enough. *European Accounting Review, 17*, 87–96.
Hopwood, A. G. (2009). Reflections and projections – and many, many thanks. *Accounting, Organizations & Society, 34*, 887–894.
Humphrey, C., & Gendron, Y. (2015). What is going on? The sustainability of accounting academia. *Critical Perspectives on Accounting, 26*, 47–66.
Hussain, S. (2010). Accounting journals and the ABS quality ratings. *British Accounting Review, 42*, 1–16.
Hussain, S. (2011). Food for thought on the ABS academic journal quality guide. *Accounting Education: an International Journal, 20*, 545–559.
Hussain, S. (2015). Journal list fetishism and the 'sign of 4' in the ABS guide: A question of trust? *Organization, 22*, 119–138.
Hussain, S., Liu, L., Wang, Y., & Zuo, L. (2015). Journal rankings, collaborative research and publication strategies: Evidence from China. *Accounting Education: an International Journal, 24*, 233–255.
Just, A., Meyer, M., Schaffer, U., & Perrey, E. (2010). Accounting as normal science? An empirical investigation of the intellectual structure of accounting research. *Paper presented at the American Accounting Association Annual Meeting. San Francisco; 2010*.
Kachelmeier, S. J. (2018). Do journals signal or reflect? An alternative perspective on editorial board composition. *Critical Perspectives on Accounting, 51*, 62–69.
Karpik, L. (2007). *L'économie des singularités*. Paris: Editions Gallimard.
Karpik, L. (2010). *Valuing the unique: The economics of singularities*. Princeton, NJ: Princeton University Press.
Karpik, L. (2011). What is the price of a scientific paper? In J. Beckert & P. Aspers (Eds.), *The worth of goods: Valuation and pricing in the economy* (pp. 63–85). Oxford, England: Oxford University Press.
Kothari, S. P. (2001). Capital markets research in accounting. *Journal of Accounting & Economics, 31*, 105–231.
Lawrence, P. A. (2002). Rank injustice: The misallocation of credit is endemic in science. *Nature, 415*, 835–836.
Lawrence, P. A. (2003). The politics of publication: Authors, reviewers, and editors must act to protect the quality of research. *Nature, 422*, 259–261.
Lee, T. A., & Williams, P. F. (1999). Accounting from the inside: Legitimizing the accounting academic elite. *Critical Perspectives on Accounting, 10*(6), 867–895.
Locke, J., & Lowe, A. (2008). Evidence and implications of multiple paradigms in accounting knowledge production. *European Accounting Review, 17*, 161–191.
Lowe, A., & Locke, J. (2005). Perceptions of journal quality and research paradigm: Results of a web-based survey of British accounting academics. *Accounting Organizations and Society, 30*, 81–98.
Lowe, E. A., & Tinker, A. M. (1975). Sighting the accounting problematic: Towards an intellectual emancipation of accounting. *Journal of Business Finance and Accounting, 4*(3), 263–276.
Malsch, B., & Tessier, S. (2015). Journal ranking effects on junior academics: Identity fragmentation and politicization. *Critical Perspectives on Accounting, 26*, 84–98.
McGuigan, N. (2015). The impact of journal rankings on Australasian accounting education scholarship – a personal view. *Accounting Education: An International Journal, 24*, 187–207.
Milne, M. J. (2002). The construction of journal quality: No engagement detected. *Accounting Forum, 26*(1), 72–86.
Moosa, I. (2011). The demise of the ARC journal ranking scheme: An ex post analysis of the accounting and finance journals. *Accounting and Finance, 51*, 809–836.
Moya, S., Prior, D., & Rodriguez-Perez, G. (2015). Performance-based incentives and the behavior of accounting academics: Responding to changes. *Accounting Education: An International Journal, 24*, 208–232.
Nedeva, M., Boden, R., & Nugroho, Y. (2012). Rank and file: Managing individual performance in university research. *Higher Education Policy, 25*, 335–360.
Nkomo, S. M. (2009). The seductive power of academic journal rankings: Challenges of searching for the otherwise. *Academy of Management Learning and Education, 8*, 106–112.
Oswald, A. J. (2007). An examination of the reliability of prestigious scholarly journals: Evidence and implications for decision-makers. *Economica, 74* (February), 21–31.
Ozler, B. (2012). Beware of studies with a small number of clusters. *The World Bank* https://blogs.worldbank.org/impactevaluations/beware-of-studies-with-a-small-number-of-clusters.
Parker, M. (2014). University Ltd: Changing a business school. *Organization, 21*, 281–292.
Patten, D. M. (2015). An insider's reflection on quantitative research in the social and environmental disclosure domain. *Critical Perspectives on Accounting, 32*, 45–50.
Picard, C., Durocher, S., & Gendron, Y. (2018). Desingularization and dequalification: A foray into ranking production and utilization processes. *European Accounting Review*. https://doi.org/10.1080/09638180.2018.1535323.
Rafols, I., Leydesdorff, L., O'Hare, A., Nightingale, P., & Stirling, A. (2012). How journal rankings can suppress interdisciplinary research: A comparison between innovation studies and business & management. *Research Policy, 41*, 1262–1282.
Reiter, S. A. (1998). Economic imperialism in accounting. *Critical Perspectives on Accounting, 9*(2), 143–171.
Richardson, A. J. (2015). Quantitative research and the critical accounting project. *Critical Perspectives on Accounting, 32*, 67–77.
Roberts, R. W. (2018). We can do so much better: Reflections on reading "Signaling effects of scholarly profiles—The editorial teams of North American accounting association journals". *Critical Perspectives on Accounting, 51*, 70–77.
Roberts, R. W., & Wallace, D. M. (2015). Sustaining diversity in social and environmental accounting research. *Critical Perspectives on Accounting, 32*, 78–87.

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007

Salterio, S. E. (2010). Contemporary accounting research–2010 editor's report [Available online at https://www.caaa.ca/en/journals-andresearch/contemporary-accounting-research-car/editorial-policy/editors-reports/].
Salterio, S. E. (2018). Signaling effects of scholarly profiles–the editorial teams of North American accounting association journals: A personal perspective. *Critical Perspectives on Accounting, 51*, 78–83.
Sangster, A. (2011). The ABS journal quality guide: A personal view. *Accounting Education: An International Journal, 20*, 575–580.
Sangster, A. (2015). You cannot judge a book by its cover: The problems with journal rankings. *Accounting Education: an International Journal, 24*, 175–186.
Schultz, G. P., & Caine, S. (1964). A statement. *Journal of Accounting Research, 1*(1), 1–2.
Schwartz, B. N., Williams, S., & Williams, P. F. (2005). US doctoral students' familiarity with accounting journals: Insights into the structure of the US academy. *Critical Perspectives on Accounting, 16*, 327–348.
Seglen, P. O. (1997). Why the impact factor of journals should not be used for evaluating research. *British Medical Journal, 314*, 497.
Soskice, D. (2016). Crossing paths: Interdisciplinary institutions, careers, education and applications. *British Academy Report* http://www.britac.ac.uk/sites/default/files/Crossing%20Paths%20-%20Full%20Report.pdf.
Spence, M. (1973). Job market signalling. *Quarterly Journal of Economics, 87*(3), 355–374.
Taylor, J. (2011). The assessment of research quality in UK universities: Peer review or metrics? *British Journal of Management, 22*, 202–217.
Tourish, D. (2011). Leading questions: Journal rankings, academic freedom and performativity: What is, or should be, the future of Leadership? *Leadership, 7*, 367–381.
Tourish, D., & Willmott, H. (2015). In defiance of folly: journal rankings, mindless measures and the ABS guide. *Critical Perspectives on Accounting, 26*, 37–46.
Walker, J. T., Fenton, E., Salter, A., & Salandra, R. (2018). What influences business academics' use of the association of business schools (ABS) list? Evidence from a survey of UK academics. *British Journal of Management*. https://doi.org/10.1111/1467-8551.12294.
Whitley, R. (1986). The transformation of business finance into financial economics: The roles of academic expansion and changes in US capital markets. *Accounting, Organizations & Society, 11*(2), 171–192.
Wilkinson, B. R., & Durden, C. H. (2015). Inducing structural change in academic accounting research. *Critical Perspectives on Accounting, 26*, 23–36.
Williams, P. F., Jenkins, J. G., & Ingraham, L. (2006). The winnowing away of behavioral accounting research in the US: The process for anointing academic elites. *Accounting, Organizations & Society, 31*, 783–818.
Williams, P. F., & Rodgers, J. L. (1995). The Accounting Review and the production of accounting knowledge. *Critical Perspectives on Accounting, 6*(3), 263–287.
Willmott, H. (2011). Journal list fetishism and the perversion of scholarship: Reactivity and the ABS list. *Organization, 18*, 429–442.
Wilsdon, J., Allen, L., Belfiore, E., Campbell, P., Curry, S., Hill, S., Jones, R., Kain, R., Kerridge, S., Thelwall, M., Tinkler, J., Viney, I., Wouters, P., Hill, J., & Johnson, B. (2015). *The metric tide: Report of the independent review of the role of metrics in research assessment and management*. HEFCE 2015 http://www.hefce.ac.uk/pubs/rereports/year/2015/metrictide/.

Please cite this article as: S. Hussain, L. Y. J. Liu and A. D. Miller, Accounting as a dichotomised discipline: An analysis of the source materials used in the construction of accounting articles, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2019.04.007