

# **A REVIEW OF ACTIVITY-BASED COSTING LITERATURE: 2001–2011**

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## **Abstract**

The purpose of this paper is to provide an assessment of 183 articles on activity-based costing (ABC) from 32 academic and professional journals published during the period 2001 through 2011. The assessment aims to ascertain trends in publication of articles, methodologies used, data analysis methods employed, research settings and origins of authorship. Previous studies provide information regarding the status of ABC research until 2000. Therefore, the paper seeks to provide an updated appraisal of ABC research. Our results are further evidence that research interest in ABC continues to fall. Manufacturing was the primary setting and surveys the preferred strategy for ABC research over 2001–2011. Finally, our findings show that most of the papers published in academic and professional journals during 2001–2011 originate from the USA. The current study updates and extends previous reviews with respect to the time period covered as well as the number of journals analysed.

**Keywords:** Activity-based costing, ABC, literature review.

## **Introduction**

Activity-based costing (ABC) is a technique for assigning the direct and indirect costs of an organization to the activities consuming the organization's resources, and subsequently tracing the costs of performing these activities to the products, customers or distribution channels consuming the activities

(Kaplan, 1988). Initially ABC appeared to be the answer to the longstanding management accounting problem of overhead allocation. Johnson (1990) described ABC as one of the most important management accounting innovations of the twentieth century, and the initial excitement about this revolutionary method led to meteoric growth in ABC research until the mid-2000s. The current study provides evidence that the decline in the number of papers on ABC reported earlier by Bjørnenak and Mitchell (2002) and Gosselin (2007) continues. The reasons behind this fall are outside the scope of this study, but it is an issue that merits further investigation. The ways in which the current study differs from the two earlier literature reviews (Bjørnenak and Mitchell, 2002; Gosselin, 2007) are delineated in Table 1. The key distinguishing features of this study are that it investigates the settings used for ABC research, and includes doctoral theses on ABC.

**Table 1: A Comparison Between This Study and Previous Studies of ABC Literature**

	Current study (2012)	Gosselin (2007)	Bjørnenak and Mitchell (2002)
<b>Major themes included</b>			
Number of ABC/M articles	✓ (ABC only)	✓	✓
Research methods	✓	×	✓
Origin of authorship	✓	×	✓
Author combinations (academic & professional)	✓	×	✓
Number of links to other techniques	✓	✓ (Partly)	✓
Sectors included in ABC/M articles	✓	×	✓
Research settings	✓	×	×
Doctoral research on ABC	✓	×	×
Period covered	2001-2011	1988-2004	1987-2000
Number of journals examined	32	ProQuest search all journals	17
Journals included in the study			
Number of articles considered	183	1477	404
Surveys on ABC	×	✓	×
Contextual factors that affect the adoption of ABC	×	✓	×
Variables that affect the attainment of implementation stage	×	✓	×
Measurement of success of ABC implementation	×	✓	×
Organizational and social consequences of ABC	×	✓	×

The present study examines literature published from 2001 onwards, as Bjørnenak and Mitchell's (2002) review examines ABC-related literature published in 2000 and earlier. Bjørnenak and Mitchell (2002) covered 17 journals while the current study examined 32 journals.

The remainder of the paper is organized as follows. The next section discusses previous literature and posits the research questions that the paper attempts to answer. Then an overview of the methodology is outlined, followed by a discussion of results. The paper ends with a conclusion, areas for further research and the limitations of the study.

## **Previous Reviews of ABC Research Literature**

While many papers on ABC exist, only two comprehensive papers focus on the ABC literature. The first review of ABC literature was undertaken by Bjørnenak and Mitchell (2002), who examined 404 articles on ABC or Activity-based Management (ABM) published in 17 accounting journals during 1987–2000. With respect to research methods, Bjørnenak and Mitchell (2002) found a strong preference for survey approaches followed by analytical methods. They also found that the constraints and throughput accounting were the most widely explored sub-topics associated with ABC. The most recent literature review was carried out by Gosselin (2007), encompassing 1,477 papers published from 1988 to 2004. Gosselin (2007) documented the evolution of ABC from the beginning, reported the number of articles on ABC published over 1991–2004, analysed surveys on ABC, identified contextual factors that affect the adoption of ABC and the determinants of success of ABC implementation, and discussed the organizational and societal consequences of ABC implementation.

As a management accounting topic, ABC is a relatively under-researched area (Shields, 1997; Chenhall & Smith, 2011). In his review of 152 articles published by North American academics during 1990–1997, Shields (1997) reported that ABC articles comprised 5.3% of all articles published in six leading accounting journals. A similar finding was reported by Chenhall and Smith (2011), who reviewed 231 Australian papers published by 10 leading management accounting journals between 1980 and 2009 and found that articles on ABC/M research constituted a mere 4%. Given that ABC

represents approximately 20% of accounting practice, the small proportion of ABC research is another indication of under-researching. The current review is an attempt to address a gap in the literature on ABC research, and thus update scholars on its current state and trends.

This paper presents a review of ABC research in selected academic and professional journals. This review was designed to investigate the following issues:

1. Number of articles on ABC published by year and journal during 2001-2011
2. Number of PhD dissertations on ABC in the USA, UK, Australia and other countries
3. Research settings used (academic papers only)
4. Sub-topics studied
5. Research methods
6. Data analysis methods
7. Country of origin of authorship

## **Methodology**

The methodology employed for this study comprised choosing the time span and the databases to be utilised, selecting journals, selecting articles and finally classifying and coding of the data garnered. Given that Bjørnenak and Mitchell (2002) reviewed ABC papers from 1987 to 2000, we decided to examine the literature from 2001 to 2011 (2011 being the final year of data available when we conducted our study). Although Gosselin's (2007) study covers the period 1991-2004, it differs from Bjørnenak and Mitchell (2002) with respect to focus of the study. Aims of this study and that of Bjørnenak and Mitchell (2002) have more in common. The data were extracted from the ABI/Inform Global ProQuest database and its online electronic library. Data relating to PhD theses on ABC were gathered from Ethos British Library Electronic Theses Online, ProQuest Dissertations and Theses, ProQuest Dissertations and Theses (UK and Ireland) and Australian Digital Theses (ADT) databases.

We included all journals (both academic and professional) reviewed by Bjørnenak and Mitchell (2002) plus journals identified by Chenhall and Smith (2011) as leading accounting journals (i.e., *Accounting, Auditing and Accountability, Accounting and Finance, Accounting Organizations and Society, Behavioral Research in Accounting, and Contemporary Accounting Research*). In addition, we included some Asia-based accounting and business journals which were not included in previous studies (i.e., *Asia Pacific Management Accounting Journal, Asian Review of Accounting*), some leading management accounting journals (*Advances in Management Accounting, Journal of Applied Management Accounting Research, Management Accounting Quarterly*) or known for publishing management accounting papers (*Journal of Corporate Accounting and Finance, Journal of Performance Management, International Journal of Production Economics*) and other leading accounting journals (*European Accounting Review, Irish Accounting Review, Managerial Auditing Journal*). Academic journals can be described as journals that publish peer-reviewed articles primarily for scholars, whereas professional journals publish articles written solely by practitioners or jointly with professional(s) and academic(s) and which are primarily intended for practitioners. In total, 183 articles from 32 journals were reviewed (Table 2). We excluded conference proceedings, prefaces, book reviews, commentaries, editorials and replies. Initially, the table of contents of every journal published during the review period was scanned to identify potential ABC-related articles, and then the abstract was read. If the abstract failed to provide sufficient information for inclusion or exclusion, the entire article was read. Finally, we used the “search within this publication” tool, with “activity based costing” and “ABC” as key words, to confirm our selections and find overlooked articles. Subsequently, all articles published between 2001 and 2011 in selected journals were read.

**Table 2: Accounting Journals Reviewed in This Study**

Journal	Academic / Professional	Included in this study	Included in Bjørnenak & Mitchell (2007)	Identified by Chenhall & Smith (2011)
Accountancy	Professional	✓	✓	✗
Accounting, Auditing & Accountability Journal	Academic	✓	✗	✓
Accounting & Business Research	Academic	✓	✓	✗
Accounting & Finance	Academic	✓	✗	✓
Accounting Horizons	Academic	✓	✓	✗
Accounting, Organizations & Society	Academic	✓	✗	✓
Accounting Review	Academic	✓	✓	✓
Advances in Management Accounting	Academic	✓	✗	✗
Asia Pacific Management Accounting Journal	Academic	✓	✗	✗
Asian Review of Accounting	Academic	✓	✗	✗
Behavioural Research in Accounting	Academic	✓	✗	✓
British Accounting Review	Academic	✓	✓	✗
Contemporary Accounting Research	Academic	✓	✗	✓
Critical Perspectives on Accounting	Academic	✓	✓	✗
European Accounting Review	Academic	✓	✗	✗
Financial Management London [Formerly Management Accounting (UK)]	Academic	✓	✓	✗
International Journal of Production Economics	Academic	✓	✗	✗
Irish Accounting Review	Academic	✓	✗	✗
Journal of Accountancy	Professional	✓	✓	✗
Journal of Accounting Literature	Academic	✓	✓	✗
Journal of Accounting and Economics	Academic	✓	✓	✓
Journal of Accounting Research	Academic	✓	✓	✓
Journal of Applied Management Accounting Research	Academic	✓	✗	✗
Journal of Business Finance & Accounting	Academic	✓	✓	✗
Journal of Corporate Accounting & Finance	Professional	✓	✗	✗

<b>Journal</b>	<b>Academic / Professional</b>	<b>Included in this study</b>	<b>Included in Bjørnenak &amp; Mitchell (2007)</b>	<b>Identified by Chenhall &amp; Smith (2011)</b>
Journal of Cost Management	Professional	✓	✓	✗
Journal of Management Accounting Research	Academic	✓	✓	✓
Journal of Performance Management	Professional	✓	✗	✗
Management Accounting Quarterly	Academic	✓	✗	✗
Management Accounting Research	Academic	✓	✓	✓
Managerial Auditing Journal	Academic	✓	✗	✗
Strategic Finance [formerly Management Accounting (US)]	Professional	✓	✓	✗

The classifications used to categorise articles were adapted or adopted from the literature. Following Bjørnenak and Mitchell (2002), each article was classified across six attributes:

1. Number of articles on ABC
2. Research setting
3. Sub-topics
4. Research methods
5. Data analysis methods
6. Country of origin of authorship.

As the seventh category, we have added an analysis of PhD theses on ABC completed in selected countries (USA, UK, and Australia) as this can potentially provide some further insight into research on ABC.

It goes without saying that authors must exercise judgment while classifying articles based on research methods and methods of data analysis. Therefore, to reduce subjectivity, every academic paper was initially reviewed and classified independently by the current authors. This was followed by a meeting to identify differences and reach a consensus on items of disagreement.

## Discussion of findings

### Number of ABC Papers Classified by Journals

As shown in Table 3, the professional journals with most ABC papers are *Journal of Cost Management* (33.0% of 106 articles), followed by *Management Accounting Quarterly* (17.9%) and *Strategic Finance* (10.3%). Our analysis indicates that publication of ABC-related articles in professional journals reached a peak in 2007 followed by a period of steady decline.

**Table 3: ABC-Related Publications by Professional Journals by Year**

PROFESSIONAL JOURNALS	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Accountancy	0	0	0	0	0	0	0	0	0	0	0	0
Financial Management (Formerly Mgmt Acctg UK)	3	3	3	1	1	0	0	1	0	1	0	13
Journal of Accountancy	0	0	0	0	0	0	1	1	0	0	0	2
Journal of Corporate Accounting & Finance	1	4	1	1	1	2	0	0	0	0	0	10
Journal of Cost Management	0	0	5	5	2	0	13	2	3	4	1	35
Journal of Performance Management	2	3	0	4	1	0	3	2	0	1	0	16
Management Accounting Quarterly	2	1	2	2	2	2	3	1	3	0	1	19
Strategic Finance (Formerly Mgmt Acctg US)	1	3	1	1	2	2	0	0	1	0	0	11
<b>TOTAL</b>	<b>9</b>	<b>14</b>	<b>12</b>	<b>14</b>	<b>9</b>	<b>6</b>	<b>20</b>	<b>7</b>	<b>7</b>	<b>6</b>	<b>2</b>	<b>106</b>

Table 4 shows the number of papers published in academic journals. The *International Journal of Production Economics* published the largest proportion of papers on ABC (16.9%), followed by *Management Accounting Research* (14.3%) and *Advances in Management Accounting* (11.7%).

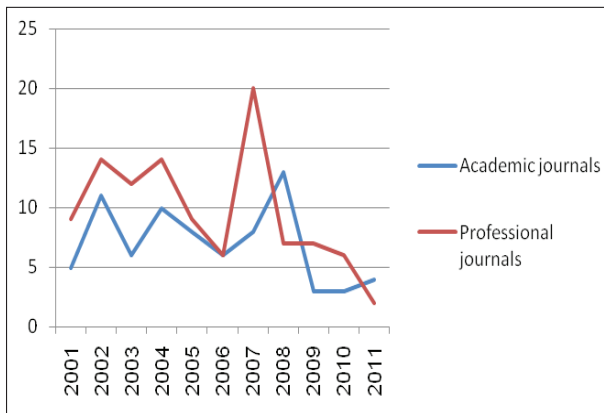
There was a slight drop in the number of ABC papers published in the latter six years (2006–2011) compared to the earlier five years (2001 to 2005). It is interesting to note that substantially more papers were published in professional journals than academic journals despite academic journals outnumbering professional journals in this study. Despite an increase in publication of ABC papers in 2007 and 2008, a decline can be observed during 2009–2011.



**Table 4: ABC-Related Publications in Academic Journals by Year**

<b>ACADEMIC JOURNALS</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>Total</b>
Accounting, Auditing & Accountability Journal	0	0	0	0	0	0	1	0	0	0	0	1
Accounting & Business Research	0	0	0	0	1	0	0	0	0	0	0	1
Accounting & Finance	0	0	0	1	0	0	2	0	0	0	0	3
Accounting Horizons	0	0	0	0	0	0	0	0	0	0	0	0
Accounting, Organizations & Society	1	4	0	0	0	0	0	1	0	0	0	6
Accounting Review	0	0	0	0	0	0	0	2	0	0	0	2
Advances in Management Accounting	0	0	2	3	1	1	1	0	0	0	1	9
Asia Pacific Management Accounting Journal (First published in 2007)	0	0	0	0	0	0	0	0	1	0	0	1
Asian Review of Accounting	1	0	0	0	1	0	0	1	0	0	1	4
Behavioural Research in Accounting	0	0	0	1	0	0	2	0	0	0	0	3
British Accounting Review	0	1	0	0	0	0	1	0	0	0	2	4
Contemporary Accounting Research	0	0	0	0	0	0	0	1	0	0	0	1
Critical Perspectives on Accounting	0	1	0	0	0	0	0	0	0	0	0	1
European Accounting Review	0	0	0	0	0	0	1	0	0	0	0	1
International Journal of Production Economics	0	1	1	1	1	3	0	5	0	1	0	13
Irish Accounting Review	0	0	0	1	0	1	0	0	0	0	0	2
Journal of Accounting Literature	0	0	0	0	0	0	0	0	0	0	0	0
Journal of Accounting and Economics	0	0	0	0	0	0	0	0	0	0	0	0
Journal of Accounting Research	1	1	1	0	0	0	0	0	0	0	0	3
Journal of Applied Management Accounting Research	0	0	0	1	2	1	0	0	2	1	0	7
Journal of Business Finance & Accounting	0	0	0	0	0	0	0	0	0	0	0	0
Journal of Management Accounting Research	1	0	0	1	0	0	0	0	0	0	0	2
Management Accounting Research	1	2	2	1	1	0	1	2	0	1	0	11
Managerial Auditing Journal	0	1	0	0	1	0	0	0	0	0	0	2
<b>TOTAL</b>	<b>5</b>	<b>11</b>	<b>6</b>	<b>10</b>	<b>8</b>	<b>6</b>	<b>8</b>	<b>13</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>77</b>

Figure 1 below compares the number of ABC papers published in the reviewed academic and professional journals annually from 2001 to 2011. The volume of publications was steady between 2002 and 2004, followed by a steep rise in output in 2007 (academic journals) and 2008 (professional journals). These rises were immediately followed by equally rapid declines to lower publication numbers. Gosselin (2007) similarly points to a fall in ABC-related articles since the early 2000s compared to early eighties. Our study provides further evidence that an overall decline in ABC research continues. This is consistent with Scapens and Bromwich (2010) who reviewed the papers published in *Management Accounting Research* during the period 1999–2009, and found that papers on ABC as a proportion of total management accounting topics studied fell from 7% in 1990–1999 to 5% per in 2000–2009.

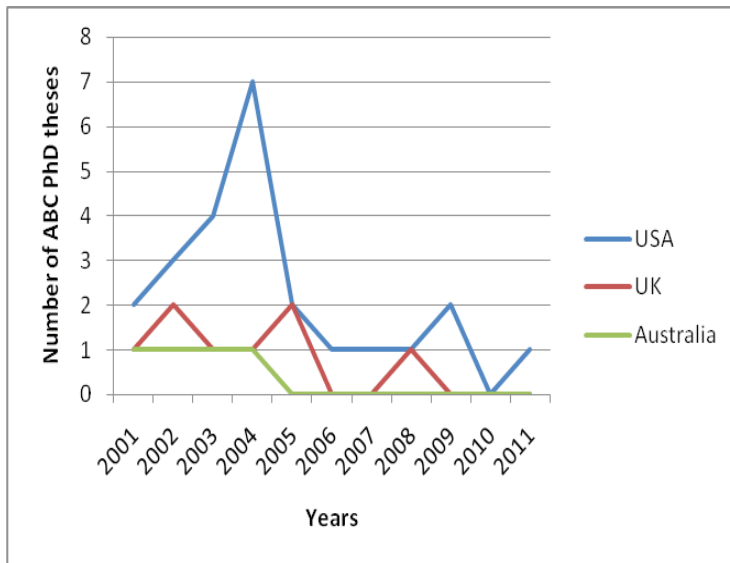


**Figure 1: Number of ABC Papers in Academic and Professional Journals 2001 to 2011**

Four journals (*Accounting Horizons*, *Journal of Accounting Literature*, *Journal of Accounting and Economics*, *Journal of Business Finance and Accounting*) published no ABC-related papers between 2001 and 2011, while six journals (*Accounting Auditing and Accountability*, *Accounting and Business Research*, *Asia-Pacific Management Accounting Journal*, *Contemporary Accounting Research*, *Critical Perspectives on Accounting* and *European Accounting Review*) published only one article each during the same period.

### PhD Theses on ABC

In order to comprehensively examine ABC research since 2001, we investigated PhD theses on ABC. As the academic literature on ABC derives largely from the United States of America (USA), the United Kingdom (UK) and Australia, our analysis mainly focuses on theses completed in those countries. Figure 2 shows the number of ABC-related theses identified in the USA, UK and Australia from 2001 to 2011.



**Figure 2: Number of ABC-Related PhD Theses in the USA, UK and Australia from 2001 to 2011**

The findings reported in Table 5 demonstrate the dominance of the USA in production of doctoral theses on ABC during the study period.

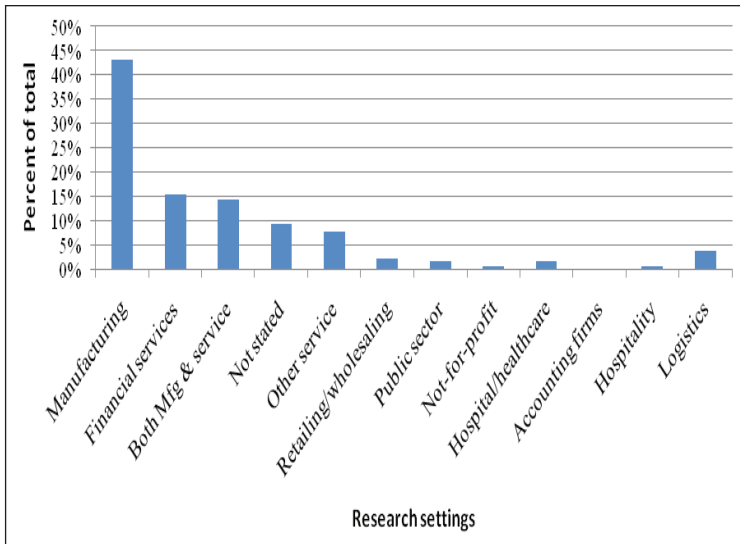
**Table 5: Number of ABC-Related PhD Theses in the USA, UK and Australia, 2001–2011**

	2001-2011 (Total)	2001-2005	2006-2011	Percentage change 2005 to 2011
USA	25	18	7	–66%
UK	7	6	1	–83%
Australia	4	4	0	–100%

Table 5 also demonstrates the extent of decline in ABC-related doctoral theses after 2005 when the periods 2001–2005 and 2006–2011 are compared. The number of doctoral theses fell by 66% in the USA, 83% in the UK and 100% in Australia.

### *Research Settings*

With respect to research settings, we considered only papers published in academic journals and adopted the classification scheme used by Chenhall and Smith (2011): manufacturing, both manufacturing and services, retail, public sector, not-for-profit, hospital/healthcare, accounting firms, hospitality, logistics, other service and not stated categories. Our analysis (Figure 3) indicates that manufacturing (43%) remains the most prominent setting for ABC research, followed by financial services (15%) and both manufacturing and services (14%). This finding is consistent with earlier studies of Shields (1997) who examined North Americans' contributions to research in management accounting and found that 38% of the ABC-related articles written by North American scholars in 1990–1996 were based on manufacturing industry.



**Figure 3: Research Settings in ABC Articles**

The above result is also supported by the work of Chenhall and Smith (2011), who conducted a review of Australian scholars’ contribution to management accounting literature based on papers published in the top ten leading accounting journals between 1980 and 2009. In comparing settings for ABC research to those for management accounting topics in general, this finding stands in contrast to Scapens and Bromwich (2010) who found that the proportion of manufacturing as research setting for papers published in *Management Accounting Research* during 1999–2009 fell from 16% in 1990–1999 to 9% over 2000–2009.

In 2006, the services sector accounted for around 80% of developed economies’ total value added (e.g., Australia 78%; USA 84%, UK 88%, Japan 78%) and employed most of the labour force (e.g., Australia 85%, USA 88%, UK 88%, Japan 72%) (DIISR, 2009). Given the current magnitude of the services sector and with its growth expected to continue, it is perplexing that such a small proportion of ABC-related research occurs in service setting.

### Distribution of ABC Sub-Topics Studied

Figure 4 displays the ABC sub-topics classifications used in this study, which was heavily adapted from BjØrnenak and Mitchell’s (2002) categorisation. Some items (i.e. economic value added, business process reengineering, environmental accounting, target costing and e-retailing) were not mentioned in any papers, so we omitted those classifications; in their place, new categories of implementation, organizational change, success factors, performance, value/supply chain, pricing and competitiveness were added. To widen the coverage, ‘zero-based budgeting’ was renamed ‘budgeting’.

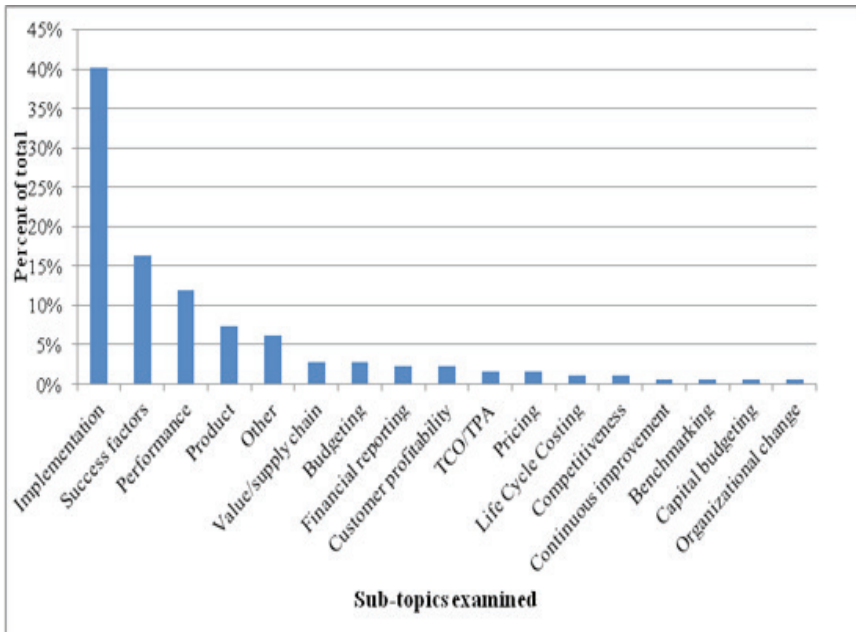


Figure 4: Distribution of ABC Sub-topics Studied

BjØrnenak and Mitchell (2002) found that the most widely examined topics in relation to ABC in 1987–2000 were theory of constraints / throughput accounting, continuous improvement, total quality control, economic value added, just in time and business process reengineering; our findings (Figure 4) differ substantially. We found that implementation, success factors, performance, product attributes, value chain and budgeting were the dominant ABC-linked topics; the most popular topics identified by

Bjørnenak and Mitchell (2002) were not even in the top 10. Implementation issues surrounding ABC have been highlighted by several scholars (Shields, 1995; Gosselin, 1997; Hopper et al., 2001), therefore the amount of research attention received by implementation and success factors is not surprising.

Research methodology classifications were surveys, case/interviews, experiment, action research, archival, analytical discussion, analytical (mathematical), literature review, multiple methods and other. This classification scheme draws on Chenhall and Smith (2011). We added two more classifications: “Content Analysis” and “Grounded Theory”. The distribution of research methods used in the ABC-related academic publications we examined is reported in Table 6. Survey was easily the dominant research method, employed in 33 papers. Other common research methods were experiment (14 papers), analytical discussion (11) and analytical mathematical papers (8).

**Table 6: Research Methods**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Survey	2	2	2	5	4	2	4	4	1	2	3	31
Case	1	3	0	1	1	2	2	1	1	1	1	14
Analytical discussion	1	4	1	2	0	0	1	1	1	0	0	11
Experiment	0	0	2	2	1	1	2	2	0	0	0	10
Analytical mathematical	2	0	1	0	1	0	0	4	0	0	0	8
Archival	0	2	0	0	0	0	0	0	0	0	0	2
Literature Review	0	0	0	0	0	0	0	1	0	0	0	1
Action Research	0	0	0	0	0	0	0	0	0	0	0	0
Total	6	11	6	10	7	5	9	13	3	3	4	77

Kaplan (1998) describes case studies as a research method that involves researchers’ active participation in developing and/or implementing new solutions or methods that alter existing practices. Case studies (14) ranked second after surveys (31) in our review of methods, which is suggestive of attempts to gain a deeper insight into the ABC phenomenon, which may be considered as a positive development.

We observed relationships between individual journals and particular research methods. For example, papers based on experimental research were published in only four journals: *Accounting Review*, *Advances in Management Accounting*, *Behavioural Research in Accounting* and *Journal of Management Accounting Research*. However, no ABC-related papers using experimental techniques have been published since 2009, and no ABC-related archival research papers since 2003.

### Data Analysis Methods

The data analysis categories were largely based on Chenhall and Smith (2011): case-based action, descriptive statistics, t-test, z-test, F-test, correlation, factor analysis, regression, ANOVA/MANOVA, Partial Least Squares (PLS)/Structural Equation Modelling (SEM)/Path Analysis (PATH), and cluster analysis. To classify experimental papers, we added the category “Operations Research”. Table 7 shows that almost a quarter (24.8%) of papers use descriptive statistics for data analysis, and case-based analysis is next most common.

**Table 7: Data Analysis Methods**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Descriptive stats	2	2	0	6	3	2	5	1	1	1	4	27
Case-based/ action	1	5	0	0	2	3	2	1	1	2	1	18
Regression	1	2	0	4	1	0	4	2	0	0	1	15
T-test, z-test, F-test	2	1	0	1	0	0	4	4	1	0	2	15
ANOVA/ MANOVA	0	0	0	1	0	1	2	2	0	0	0	5
Correlation	0	1	0	1	0	0	0	1	0	0	0	3
Factor analysis	0	0	0	2	0	0	1	0	0	0	0	3
PLS/SEM/PATH	0	0	0	1	0	0	0	1	0	0	0	2
Cluster	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	1	1	1	1	0	0	0	0	0	0	4
Not stated/ not applicable	1	4	2	2	1	0	0	6	1	0	0	17
<b>Total</b>	<b>7</b>	<b>16</b>	<b>3</b>	<b>19</b>	<b>8</b>	<b>6</b>	<b>18</b>	<b>18</b>	<b>4</b>	<b>3</b>	<b>8</b>	<b>109</b>



### Nationality of Authors of ABC Research

We used the author’s university affiliation to denote nationality of authorship. The authorship classification was largely based on Bjørnenak and Mitchell’s (2002) scheme. In terms of contribution to academic journals, USA, Australia and UK are clearly the dominant countries in ABC-related research. US authors are also overwhelmingly the leading publishers of ABC-related papers in professional journals, followed by authors from the UK and China.

**Table 8: Nationality of Authors**

Country	Academic	Professional	Country	Academic	Professional
USA	72	138	Chile	2	0
Australia	30	0	New Zealand	2	0
United Kingdom	20	14	Portugal	2	0
China	13	9	Ireland	1	0
Finland	7	1	Saudi Arabia	1	1
Malaysia	7	0	United Arab Emirates	1	0
Turkey	6	0	Thailand	1	0
Belgium	5	2	Italy	0	3
Canada	4	1	Poland	0	2
Netherlands	3	1	Israel	0	1
Greece	3	3	Iran	0	1
Taiwan	3	0	South Africa	0	1
Germany	2	3			

It is interesting to note that while countries such as China, Malaysia and Turkey were not mentioned in Bjørnenak and Mitchell’s (2002) study, Table 8 reveals that these three countries now rank fourth, sixth and seventh, respectively. Other newcomers include Belgium, Germany, Chile and Portugal. The fact that some papers are single-authored and some are multiple-authored should be considered in analysing the results presented in Table 8

## **Conclusion**

In this paper we reviewed the ABC literature published between 2001 and 2011 inclusive with respect to seven attributes. Subject to the limitations discussed in the following section, our results provide further evidence for a continuing decline in ABC research. It is noteworthy that the decline was observed not only in the number of ABC-related articles but also in the number of successfully completed doctoral theses during 2001–2011.

As Chenhall and Smith (2011) stressed, although many questions about ABC/M remain unanswered (i.e., how best to design and use of ABC/M systems, how to use them for cost control, etc.), ABC/M has become less fashionable among researchers. Kaplan (1998) suggested that ABC was such an effective method that only poor management could account for lack of success in using it, and Gosselin (2007) described the situation as ‘ABC paradox’ where there is a method, which seems theoretically and conceptually sound but on the other hand for some reason implementation rates failed to live up to expectations. The results of the present study indicate that manufacturing maintains its primacy as the ABC researcher’s setting of choice despite the growing size and importance of the services industry. In the light of empirical evidence (Anderson, 1995; Shields, 1995; Anderson and Young, 1999; Kennedy and Affleck-Graves, 2001) that implementation problems associated with ABC continue, it is not surprising that implementation and success factors are the most widely examined topics in relation to ABC.

Surveys are the most widely used research method, followed by case studies. For a deeper understanding of the problems more case study research is needed. Continued dominance of surveys indicates that the topic has not yet reached maturity. Lack of the use of grounded theory approach suggests that more work is required for theory building. Descriptive statistics is the most popular analytical method among researchers. Finally, our analysis points to the continuing dominance of US authors in the ABC field.

Future research should unravel the reasons underlying dwindling research interest in ABC. Given ongoing implementation problems, longitudinal rather than cross-sectional research is needed. Neither this nor previous reviews considered whether ABC research was primarily longitudinal

or cross-sectional, so this is an obvious direction for future research. Future literature studies could also document difficulties experienced by adopters of ABC or difficulties envisaged by non-adopters of ABC while examining successful applications of ABC. Comparing accounts of successful and unsuccessful ABC implementations would provide insight into understanding the key hurdles and success strategies.

## **Limitations**

The current study is subject to three key limitations. The first limitation concerns the journals included in this review. This pertains to our inclusion criterion for journals and PhD theses on ABC. We made every effort to identify relevant articles for inclusion, particularly in identifying PhD theses, however we only used by using key words and read the abstract without reading the entire thesis. Secondly, articles pertaining to ABC do not only appear not only in management accounting journals but also in non-accounting journals such as *International Journal of Hospitality and Tourism Administration*, *Public Money & Management*, *Industrial Marketing Management*, *Managing Service Quality*, *European Management Journal*, *The TQM Magazine*, *Journal of Business and Industrial Marketing*, *Journal of Engineering Design*, etc. As we limited our review to accounting journals, we may have missed valuable contributions to the ABC literature. The final limitation concerns subjectivity in the classification of articles. As described earlier, we made every effort to minimise subjectivity, but it is acknowledged that bias cannot be fully eliminated (i.e., both authors may err inadvertently).

The list of papers reviewed and definitions of classifications used in the study can be obtained from the corresponding author (bulend.terzioglu@acu.edu.au).

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