# New directions for research on SME-eBusiness: insights from an analysis of journal articles from 2003 to 2006

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**Abstract**

Previous research which consolidates the growing body of academic literature on small and medium enterprises (SMEs) and electronic business (eBusiness) has taken the form of meta-analyses which focus on analysing adoption factors, pre-2000 articles and a small number of journals. This paper makes a valuable contribution to the analysis of SME-eBusiness research by addressing the limitations of past literature analyses because it presents an extensive literature review of 120 SME-eBusiness journal articles published between 2003 and 2006 in 53 journals. This paper is unique, when compared to meta-analyses of adoption factors, because it analyses the SME-eBusiness literature broadly on the basis of the data collection approaches used, countries and eBusiness technologies studied, and the primary research objective of each article. This approach to the analysis revealed a number of limitations in the existing research such as the tendency: to treat SMEs and eBusiness applications homogeneously rather than as highly diverse, complex entities; to repeat adoption factor studies which have now reached saturation point; and to focus on SMEs themselves without considering the complexity of relationships which many SMEs have with family, friends, other businesses and eBusiness solution providers. These limitations highlight the need for new research directions which move beyond identifying and evaluating adoption factors. The paper concludes by outlining a number of broad research directions which might help overcome the limitations with the existing body of SME-eBusiness research.

**Keywords**

Small and medium enterprises; SMEs; electronic business; adoption; internet; web; literature review.

**Earlier version**

A shorter, earlier version of this paper appeared in the 2006 CollECTeR Conference on Electronic Commerce, Adelaide, Australia, 9 December. This earlier version, however, only analysed 100 journal articles.

## 1 Introduction

Small and medium enterprises (SMEs) and their adoption and use of various forms of electronic business (eBusiness) have been the subject of considerable research, especially over the last decade with the commercialisation of the Internet. Our extensive search of the literature identified at least 120 journal articles published between 2003 and 2006 with a focus on SMEs and eBusiness. Many looked at Internet or website adoption and use in particular. It is therefore an opportune time to conduct an analysis of this large body of recent journal articles dealing with SME's use of eBusiness in order to identify trends and opportunities for new future research directions.

Previous analyses of SME-eBusiness literature have tended to take the form of meta-analyses which have focused on identifying and analysing factors (drivers and barriers) which aim to predict or explain why SMEs adopt (or do not adopt) different forms of eBusiness (see Premkumar 2003; Teo et al. 2004). Premkumar's (2003) meta-analysis in particular examined only pre-2000 articles, and did not include non-IS journals or eBusiness journals (for example, *Journal of Small Business and Enterprise Development* and *Electronic Markets* respectively) which we discovered are common publication venues for SME-eBusiness studies.

While such "adoption factor" meta-analyses are useful, the existing studies do not offer insights into broader trends relating to the types of research (for example, data collection approaches and research objectives) being conducted and into the future research opportunities these trends might present. Jeyaraj et al's (2006) recent meta-analysis addresses this to some extent when examining possible research biases in adoption studies, but their study focused on pre-2000 research on individual and organisational adoption of IT generally, not recent SME or eBusiness research. We believe that such meta-analyses of adoption factors will perpetuate the tendency in the literature to conduct only adoption factor research.

Our aim, by contrast, was to look at the body of research more broadly (for example, by considering the data collection approaches used and research objectives of the studies) to identify opportunities for new, broad research directions beyond adoption factor studies. While we do not claim our analysis was exhaustive, it can be considered reasonably indicative because the journal articles used were published in relevant, peer-reviewed academic journals. Indeed, the broader nature of our analysis has identified a number of limitations of existing research such as the tendency to:

- treat SMEs and eBusiness applications homogeneously rather than as highly diverse, complex entities;
- repeat adoption factor studies which we believe have now reached saturation point; and
- focus on SMEs themselves without considering the impact of the complex relationships many small firms in particular have such as with family, friends, other businesses and eBusiness solution providers (not just trading partners as suggested in the literature).

As a consequence of the literature analysis reported in this paper, we argue that there is a need for new research directions which move beyond identifying and evaluating adoption factors.

This paper therefore makes a valuable contribution to the analysis of SME-eBusiness research by addressing the limitations of past literature analyses because it includes 120 key SME-eBusiness journal articles published from 2003 to 2006 (not pre-2000 articles); it includes non-IS and eBusiness journals (53 journals in total); and it identifies major trends in the data collection approaches employed, countries and eBusiness technologies studied, and research objectives focused upon, rather than focusing purely on analysing adoption factors as in existing meta-analyses. Indeed, our paper is one of few (if any) extensive literature analyses of 2003-06 journal articles. It also presents some of our initial broad suggestions on new research directions which we believe will help overcome the limitations with the existing body of SME-eBusiness research. Among these directions, we argue for future research which investigates appropriate programmes, approaches and tools which can help SME owners (and the external parties who might help them) to make informed decisions about which business applications of eBusiness technologies are appropriate given the unique context of each SME.

The paper is structured as follows. We firstly explain how relevant journal articles were identified. Next we describe the way in which the analysis of these articles was undertaken and then present the major trends in four areas: the data collection approaches used; the eBusiness technologies or applications studied; the countries studied; and the research objectives of the articles. We then outline some initial broad suggestions on needed future research directions based on our analysis. Finally we make some concluding remarks.

# 2 Approach to identifying SME-eBusiness journal articles

Articles used for the literature analysis were selected on the basis that they were journal articles involving conceptual or empirical work focusing on SMEs and eBusiness, and were peer-reviewed academic journals. The search for SME-related articles included terms such as *small business* and *small firm* to find relevant articles. eBusiness applications included in the search included EDI, websites, email, e-enabled supply chain management (e-SCM), customer relationship management (e-CRM) and knowledge management (e-KM). eBusiness technologies such as Internet connectivity and intranets were also considered appropriate, so long as it was apparent the articles were concerned with these technologies being used for eBusiness. We did not include articles focusing on the use of specific internal applications such as accounting software if the use of this software did not involve some kind of network which underpins eBusiness.

We included only peer-reviewed academic journals to ensure that the articles analysed were of higher quality when compared to journals with no peer-review process. We analysed a wide range of publication venues (including specialist journals in such areas as supply chain management and knowledge management) to ensure a broad coverage of SME-eBusiness research. This was important because we concluded that focusing on just a few publication venues (for example, only high-ranking IS journals) might introduce bias towards a reduced number of eBusiness technologies or towards particular data collection approaches. The list of publication venues used for our SME-eBusiness literature analysis can be seen in Table 1.

 

| Journal name | '03 | '04 | '05 | '06 | Total |
|---|---|---|---|---|---|
| Australasian Journal of Information Systems (AJIS) | | | | 1 | **1** |
| Business Process Management Journal (BPMJ) | 1 | | | | **1** |
| Competition & Change (C&C) | 1 | | | | **1** |
| Communications of the ACM (CACM) | 1 | | | | **1** |
| Decision Sciences (DS) | 1 | | | | **1** |
| Electronic Journal of Information Systems in Developing Countries (EJISDC) | | | | 1 | **1** |
| The Electronic Library | | | | 1 | **1** |
| Electronic Markets (EM) | 1 | 2 | 7 | 2 | **12** |
| Engineering Construction & Architectural Management (EC&AM) | | | 1 | | **1** |
| European Business Review (EBR) | 1 | | | | **1** |
| European Journal of Information Systems (EJIS) | 3 | 2 | 1 | | **6** |
| IEEE Transactions on Engineering Management (ITEM) | | | | 1 | **1** |
| Info | | | 1 | | **1** |
| Information & Management (I&M) | 1 | 3 | 1 | | **5** |
| Information Systems Frontiers (ISF) | | 1 | | | **1** |
| Information Technology & Management (IT&M) | 1 | | | | **1** |
| Irish Journal of Management (IJM) | 1 | | | | **1** |
| International Journal of Applied Management and Technology (IJAMT) | | | | 1 | **1** |
| International Journal of Contemporary Hospitality Management (IJCHM) | | | | 1 | **1** |
| International Journal of Electronic Business (IJEB) | | | | 1 | **1** |
| International Journal of Information Management (IJIM) | | | | 1 | **1** |
| International Journal of Retail & Distribution Management (IJR&DM) | | | | 1 | **1** |
| International Marketing Review (IMR) | | | 1 | | **1** |
| International Small Business Journal (ISBJ) | | 2 | | | **2** |
| Internet Research (IR) | | | | 1 | **1** |
| Journal of American Academy of Business, Cambridge (JAAB) | | 2 | | 1 | **3** |
| Journal of Computer Information Systems (JCIS) | | 2 | 1 | | **3** |
| Journal of Electronic Commerce in Organizations (JECO) | 1 | 2 | | 3 | **6** |
| Journal of Electronic Commerce Research (JECR) | 1 | 1 | | | **2** |
| Journal of Enterprise Information Management (JEIM) | | 1 | 1 | 1 | **3** |
| Journal of Global Information Management (JGIM) | | | 3 | | **3** |
| Journal of Internet Commerce (JIC) | 1 | | | | **1** |
| Journal of Information Technology Management (JITM) | | | | 1 | **1** |
| Journal of Knowledge Management (JKM) | | | 1 | | **1** |
| Journal of Manufacturing Technology Management (JMTM) | | | | 1 | **1** |
| Journal of Marketing Management (JMM) | | 1 | | | **1** |
| Journal of Organizational Computing & Electronic Commerce (JOC&EC) | 2 | | | | **2** |
| Journal of Purchasing & Supply Management (JP&SM) | | 1 | | | **1** |
| Journal of Property Investment & Finance (JPI&F) | | | 1 | | **1** |
| Journal of Systems & Information Technology (JS&IT) | 4 | | | | **4** |
| Journal of Small Business & Enterprise Development (JSBED) | 8 | 9 | 2 | | **19** |
| Journal of Small Business Management (JSBM) | | | 1 | | **1** |
| Journal of Theoretical and Applied Electronic Commerce Research (JTAECR) | | | | 1 | **1** |
| The Journal of Strategic Information Systems (JSIS) | | | | 2 | **2** |
| Logistics Information Management (LIM) | 1 | | | | **1** |
| Management Decision (MD) | | | 1 | | **1** |
| Measuring Business Excellence (MBE) | | | | 1 | **1** |
| New Technology, Work & Employment (NTW&E) | | | 5 | | **5** |
| Production Planning & Control (PP&C) | | 1 | | | **1** |
| Qualitative Market Research (QMR) | 2 | | | | **2** |
| South African Journal of Business Management (SAJBM) | | | 1 | | **1** |
| Small Business Economics (SBE) | 1 | 3 | | 1 | **5** |
| Supply Chain Management (SCM) | 1 | | | | **1** |
| **TOTAL** | **34** | **33** | **29** | **24** | **120** |

*Table 1: Summary of journal articles identified*

We included only journal articles published between 2003 and 2006 to ensure that our analysis focused on recent research. We did not consider articles published in 2002 and earlier to be recent research because of the long

publication cycle of many journals (typically between 12 to 24 months ), which meant the research reported in such articles would be five years old or older. We considered including conference papers because of the long journal publication cycle and because they might reflect the most recent SME-eBusiness research when compared to journal articles alone. However, we included only journal articles because we wanted to focus our analysis on publications of higher quality (or at least more refined) than those typically found in conferences. Indeed, journal articles are often improved versions of conference papers which incorporate feedback from conference participants, as well as the conference and journal reviewers.

The articles were identified by searching online databases (such as Emerald, ScienceDirect and EBSCOHost) and Google Scholar. We predominantly restricted the articles to those which were available in full-text via our University's library. While this meant that some SME-eBusiness journal articles might have been missed, our wide search and inclusion of 120 journal articles enabled us to confirm with some degree of confidence that this paper reports on the only analysis (or one of the few) concerning an extensive collection of recent journal articles. We also believe the major research trends identified from our analysis can be considered reasonably indicative because the journal articles were published in relevant, peer-reviewed academic journals.

Table 1 summarises the 53 journals from which the articles were identified and analysed. It is not surprising that many of the articles came from journals dedicated to SME research such as *Journal of Small Business and Enterprise Development* and *Small Business Economics*, in addition to IS and eBusiness journals such as *Electronic Markets, European Journal of Information Systems* and *Information & Management*. This table demonstrates the following:

- There is a wide range of publishing outlets for SME-eBusiness research, although as a consequence this has tended to fragment the SME-eBusiness research.
- SME-eBusiness articles have been appearing consistently throughout the period 2003 to 2006, with similar numbers of articles each year. It should be noted that the search was not exhaustive and there are too few years covered for insights into historical publishing trends to be commented upon. Further, the smaller number of 2006 articles is partly a reflection that many journal issues published toward the end of 2006 were still not available via our University's online databases (or inter-library loans) when we conducted our literature analysis in early 2007.

# 3 Major SME-eBusiness research trends and future opportunities

In this section we identify major trends emerging from our analysis of the SME-eBusiness articles by examining the eBusiness technologies and countries studied, the data collection approaches employed and the primary research objective of each article. This analysis enabled us to identify broad commonalities and differences in the literature, as well as limitations, and to determine potential new directions for future research. It should be noted that while the results are mostly broken down by year, the articles analysed do not cover a sufficiently long period for reliable historical trends to be analysed.

## 3.1 A predominant focus on observational data collection approaches

The data collection approaches reported in the articles were identified and categorised based on the description of the research design or method in each article. A summary of the data collection approaches used in the articles is provided in Table 2. We aimed to categorise the data collection approaches consistently, which in a few cases involved putting an article in a different category than suggested by the article's method section. For example, an article was categorised as a case study only if it was clear it involved more extensive data collection than a semi-structured interview with one employee in an the SME (for example, analysis of documents and/or interviewing multiple staff and/or observing behaviour). This ensured that the categorisation was more consistent with the majority of articles which described the equivalent data collection approach as a semi-structured interview. It should also be noted that studies which involved (semi-structured) interviews purely to develop a survey instrument were not categorised as "combined qualitative and quantitative data collection", because the findings from the interviews were not reported in these articles.

It was encouraging that both qualitative and quantitative data collection of varying types were published, with no apparent bias toward one type. More specifically, 39 articles reported qualitative data and 55 on quantitative data. In addition, 19 articles combined qualitative and quantitative data collection to address the limitations of using one category of collection only. This finding also shows that there are publication venues which support both quantitative and qualitative research.

It can be seen from Table 2 that only 9 articles reported results from longitudinal research, such as comparing survey results over time, or studying SMEs and their eBusiness use over time. This represents a gap in the research because SMEs can develop their eBusiness capability or change their direction quite quickly. We

 

conclude that there is an opportunity for longitudinal studies, both quantitative and qualitative, which examine temporal issues affecting SME eBusiness use. Such research is important because it charts the development of eBusiness adoption and the effect of experience, experimentation and intervention by third parties. This could include studying why some SMEs might abandon eBusiness initiatives over time, rather than expanding their use of and investment in eBusiness.

| Data collection approach(es) | '03 | '04 | '05 | '06 | Total |
|---|---|---|---|---|---|
| Conceptual / literature review only | 2 | 4 | 1 | | **7** |
| ***Qualitative only data collection*** | | | | | |
| Semi-structured interviews | 5 | 5 | | 3 | **13** |
| Semi-structured interviews (longitudinal) | | | | 1 | **1** |
| Case studies | 9 | 5 | 3 | 2 | **19** |
| Case study (longitudinal) | | 1 | | | **1** |
| Action research (longitudinal) | 1 | 1 | | 1 | **3** |
| Case studies and semi-structured interviews | | | 1 | | **1** |
| Focus groups and semi-structured interviews | | | | 1 | **1** |
| ***Quantitative only data collection*** | | | | | |
| Postal/email survey | 9 | 13 | 16 | 10 | **48** |
| Postal/email survey (longitudinal) | | | 1 | | **1** |
| Phone survey | | 1 | 2 | | **3** |
| Website survey | | | | 1 | **1** |
| Website survey (longitudinal) | | | 1 | | **1** |
| Postal/email survey and website survey | | | | 1 | **1** |
| ***Combined qualitative and quantitative data collection*** | | | | | |
| Focus group and website survey | | | | 1 | **1** |
| Postal/email survey and case studies | 2 | | | | **2** |
| Postal/email survey, website survey and case study | 1 | | | | **1** |
| Postal/email survey and semi-structured interviews | 3 | 2 | 2 | 3 | **10** |
| Postal/email survey and semi-structured interviews (longitudinal) | | 1 | 1 | | **2** |
| Phone survey and semi-structured interviews | 1 | | 1 | | **2** |
| Website survey and semi-structured interviews | 1 | | | | **1** |
| **Total** | **34** | **33** | **29** | **24** | **120** |

*Table 2: Summary of data collection approaches employed*

The majority of the data collection approaches employed by authors of the SME-eBusiness articles aimed to document post hoc eBusiness use and adoption among SMEs. However there are comparatively few examples in which the primary objective of researchers was to take an active (rather than observational) role in encouraging and supporting SME use of eBusiness. Some notable exceptions were Ihlstrom & Nilsson (2003), McGovern & Hicks (2004) and Ray & Ray's (2006) action research studies where they assisted SMEs with eBusiness knowledge and project development, and Hari et al's (2005) knowledge management education CD developed for the construction industry.

Another issue with the focus on post hoc data collection approaches (especially surveys) is that they only elicit the perceptions of SME owner/managers. Jeyaraj et al. (2006) point out that, in the context of individual and organisational IT adoption generally, there is evidence emerging that perceived system use does not correlate with actual system use. This suggests that data collection approaches which focus on an SME respondent's perception of eBusiness use might not produce reliable insights into actual eBusiness usage or practices (for example, strategy development). Future research which observes actual SME behaviour with regards to eBusiness (for example, website content analysis, case studies and action research) might help address this limitation.

## 3.2 eBusiness technologies and applications studied

Further insights into SME-eBusiness research trends were gained when examining the eBusiness technologies and applications reported in the journal articles analysed, as summarised in Table 3. The articles were categorised based on the eBusiness examples specified by the article authors or, if this was unclear, based on the description of eBusiness technologies or applications in their results. This proved to be a challenge in some cases where authors referred merely to such technologies or applications as the Internet, Web, websites, eCommerce,

 

eBusiness, ICT and IS/IT, rather than the specific technologies or applications used (or not) by SMEs. The conceptual/theoretical papers, which have been separated in Table 3, as expected tended to use such broad, generic terms rather than referring to specific eBusiness applications.

| eBusiness technologies and applications | '03 | '04 | '05 | '06 | Total |
|---|---|---|---|---|---|
| Conceptual / theoretical papers | 2 | 4 | 1 | | **7** |
| eBusiness technologies unclear or unspecified (eBusiness generally) | 2 | 2 | 3 | 1 | **8** |
| Web generally | 8 | 15 | 6 | 3 | **32** |
| Web generally plus email | 2 | | | 6 | **8** |
| Internet generally | 1 | 1 | 1 | 2 | **5** |
| Internet use generally plus mobile phone | | 1 | | | **1** |
| Many eBusiness technologies and applications (eg, research, sales, CRM) | 12 | 6 | 4 | 7 | **29** |
| Many eBusiness technologies plus EDI | 4 | 2 | 4 | 1 | **11** |
| Focus on supply chain technologies (plus possibly other technologies) | 2 | 2 | 2 | | **6** |
| Knowledge/information management (plus possibly other technologies) | 1 | | 2 | 1 | **4** |
| Third-party web services | | | | 1 | **1** |
| Electronic marketplaces | | | 2 | 1 | **3** |
| eProcurement with government | | | | 1 | **1** |
| Teleworking | | | 2 | | **2** |
| Broadband Internet | | | 1 | | **1** |
| Online training | | | 1 | | **1** |
| **Total** | **34** | **33** | **29** | **24** | **120** |

*Table 3: Summary of eBusiness technologies and applications investigated*

The first major observation from Table 3 was the surprising tendency by many researchers to treat the applications of the Internet and the Web collectively. This is problematic because these technologies can be used for a plethora of quite different business applications (see Chong 2006) such as for sales, product catalogue, payments, procurement, online brochure, employee recruitment, online banking and online service delivery. Treating the Internet or Web collectively fails to consider that there might be different mitigating factors influencing SME adoption decisions (or variations in use of "the Internet" or "the Web") regarding specific applications of these tools. For example, some small firm proprietors are not interested in expanding their customer-base (Castleman 2004), so that a web-based marketing channel might not be appropriate. If owners of such businesses only perceive the web as a marketing tool, they would most likely state that the web is not suitable for their business. By contrast, if these same proprietors perceive the web as an online customer service channel or as a way to access services such as banking, then their answer to the exact same question about the perceived suitability of the web might be quite different. This example highlights the problems which can arise when researchers treat the Web as a collective term and merely query why SMEs have or have not adopted a website. Semi-structured interviews offer an opportunity to delve deeper into these complex issues, which is more difficult with surveys. This limitation of many SME-eBusiness studies must be addressed in future to ensure that the heterogeneous nature of Internet/Web applications is taken into account by treating these applications separately. The implications of this for future research are examined further in sections 3.4 and 4.

Another major observation is that, not surprisingly, there has been a strong focus in the SME-eBusiness literature over the last few years on the Internet, websites and email. Table 3 suggests future research could target other eBusiness technologies, and their business applications, which have received comparatively little attention, such as SME use of teleworking, online training and mobile commerce. It is likely that there are other SME studies in these areas we did not identify, and that more exhaustive article searches in future could determine the full extent of research in these areas.

## 3.3 A predominant focus on single country studies

Further major trends in the recent SME-eBusiness journal literature emerged when we examined the countries in which the authors conducted their empirical work, as summarised in Table 4. Since our focus was on the country targeted for empirical investigations, we did not categorise conceptual and theoretical papers based on countries.

The first major observation from Table 4 is that a large proportion (21%) of the SME-eBusiness articles analysed investigated SMEs in the UK. This might reflect the government funding which has been provided in the UK to stimulate eBusiness adoption and use by SMEs in various areas such as Wales (for example, Jones et al. 2003b) and the West Midlands (for example, Matlay & Addis 2003). In addition, over half the articles (52%) analysed investigated SMEs in the UK, USA, Australia, Canada and New Zealand. This suggests that there are future research opportunities and a need for SME-eBusiness research in developing and/or non-native English speaking

 

countries. Although it is quite possible that such research is being published, but not necessarily in English language journals accessible via our University's online research databases.

| Country/ies studied | '03 | '04 | '05 | '06 | Total |
|---|---|---|---|---|---|
| Unclear | | | 1 | | **1** |
| Not applicable (conceptual / theoretical papers) | 2 | 4 | 1 | | **7** |
| ***Single Countries*** | | | | | |
| United Kingdom | 6 | 10 | 6 | 3 | **25** |
| USA | 5 | 5 | 4 | 3 | **17** |
| Australia | 4 | 1 | 4 | 1 | **10** |
| Canada | | 1 | 2 | 2 | **5** |
| New Zealand | 1 | 1 | 2 | 1 | **5** |
| Sweden | 2 | 2 | | 1 | **5** |
| Ireland | 4 | | | | **4** |
| Italy | 2 | 2 | | | **4** |
| Scotland | 2 | | 2 | | **4** |
| Hong Kong | 1 | 2 | | 1 | **4** |
| South Africa | 1 | 1 | 1 | | **3** |
| India | | | | 2 | **2** |
| Malaysia | | | | 2 | **2** |
| Spain | | | | 2 | **2** |
| Taiwan | | 1 | 1 | | **2** |
| Turkey | 1 | | 1 | | **2** |
| Botswana | | | | 1 | **1** |
| Chile | | 1 | | | **1** |
| Greece | | | | 1 | **1** |
| Indonesia | | | | 1 | **1** |
| Korea | | | | 1 | **1** |
| Pakistan | | 1 | | | **1** |
| Portugal | 1 | | | | **1** |
| ***Two Countries*** | | | | | |
| Australia and Sweden | | | 2 | | **2** |
| Australia and Germany | | | | 1 | **1** |
| Canada and USA | | | | 1 | **1** |
| ***Four Countries*** | | | | | |
| USA, Germany, Denmark and France | | | 2 | | **2** |
| USA, UK, Austria and Spain | 1 | | | | **1** |
| ***Eight Countries*** | | | | | |
| UK, Ireland, Finland, Germany, Denmark, France, Italy, Spain | 1 | | | | **1** |
| ***Ten Countries*** | | | | | |
| Brazil, China, Denmark, France, Germany, Japan, Mexico, Singapore, Taiwan, USA | | 1 | | | **1** |
| **Total** | **34** | **33** | **29** | **24** | **100** |

*Table 4: Summary of countries studied*

Another major observation from Table 4 is that only 9 articles included cross-country comparisons. This suggests a future research opportunity for cross-cultural SME-eBusiness studies to determine the extent to which SME eBusiness adoption and use varies given national and cultural contexts. Given the adoption factor style of research which dominants this field (discussed in the next section), the studies often focus on a particular country to reduce the number of independent variables (among other reasons). Indeed, MacGregor & Vrazalic (2005a; 2005b), who conducted the two Australia-Sweden comparative studies, chose the particular regions in both countries based on their similarities at the macro-level. Beck et al. (2005a; 2005b), who conducted the two USA-Germany-Denmark-France comparative studies, did compare eBusiness use, benefits and barriers between the four countries, but they did not explore the possible national or cultural contexts (among other things) which might have given rise to these variances.

## 3.4 A central concern with SME adoption/use of eBusiness

More interesting major trends among the SME-eBusiness articles analysed were identified when we classified the articles based on their primary research objective. The primary objective of an article was determined from any statements about the objective by the article authors. If the objective was unclear, it was determined by

 

assessing the nature of the empirical findings to deduce the primary research objective. This involved reading each paper, with particular emphasis on the article authors' stated objectives in the introduction and the lead-in to the empirical work (where applicable). The broad themes or categories of research objectives were identified inductively using a condensation approach.

The literature analysis was conducted by the first author. While this single researcher approach to the analysis had the potential to introduce researcher bias, our aim was to conduct a more exhaustive literature analysis (120 journal articles) than previous analyses in the literature so that we could identify major trends and future research opportunities from an indicative body of work. We could have addressed researcher bias by conducting independent analyses and then comparing our findings to arrive at a consensus about the categories and article classifications. This would not, however, have achieved our aim because it would have meant restricting the analysis to a much smaller number of articles, and thereby limiting the more indicative insights into the SME-eBusiness literature achievable when analysing a greater number of articles. An alternative would have been to divide the 120 journal articles between us and later combine the categories and article classifications into a single collection. However, we believed it was better for one researcher to do the entire analysis so that the resulting categories and article classifications were consistent across all 120 journal articles. In Table 5 we have included all 120 articles and the category to which each was assigned for those wanting to replicate this work.

As stated in section 3.1, most articles employed data collection approaches which focused on documenting post hoc perceptions of SME informants about eBusiness. Indeed, the majority of the articles were descriptive studies of eBusiness adoption and/or use by SMEs, with many exploring a range of drivers, barriers and critical success factors, or a subset of these factors. Table 5 summarises the primary research objective of each article analysed.

| Category | Description | Total |
|---|---|---|
| Extent of eBusiness use | Examining the extent of SME adoption of various eBusiness technologies and applications. In some cases, the articles also looked at specific factors such as firm characteristics which influenced this adoption (de Klerk & Kroon 2005; Egan et al. 2003; Fry et al. 2004; Koh & Maguire 2004; Kula & Tatoglu 2003; Wynarczyk 2005) and the use of eBusiness for addressing the information needs of SMEs (Mutula & van Brakel 2006). | 7 |
| eBusiness benefits / uses | Identifying the (strategic) benefits and/or uses of eBusiness technologies and applications by SMEs and, in some cases, the specific adoption factors or barriers affecting these benefits/uses (Beck et al. 2005a; Beck et al. 2005b; Chau 2003; Karanasios & Burgess 2006; Kyobe 2004; Levenburg 2005; MacGregor 2004b; Mohan-Neill 2006; Pflughoeft et al. 2003; Santarelli & D'Altri 2003; Schlenker & Crocker 2003; Sellitto et al. 2003; Sharma & Bhagwat 2006b; Stansfield & Grant 2003; Yeung et al. 2003). | 15 |
| eBusiness drivers / barriers | Identifying the range of drivers (referred to in some articles as critical success factors) of and/or barriers to eBusiness adoption/use by SMEs (Al-Qirim 2003; 2005; 2006; Beach 2004; Ching & Ellis 2004; Chong 2006; Del Aguila-Obra & Padilla-Meléndez 2006; Fillis et al. 2003; Fisher & Craig 2005; Galloway & Mochrie 2005; Gengatharen & Standing 2005; Hicks et al. 2006; Hughes et al. 2003; Jones et al. 2003b; Kaynak et al. 2005; Khazanchi 2005; Lawson et al. 2003; Lee 2004; MacGregor & Vrazalic 2005a; MacGregor & Vrazalic 2006; Ramsey et al. 2003; Ramsey & McCole 2005; Rao et al. 2003; Stockdale & Standing 2004; Tan & Ouyang 2004; Taylor & Murphy 2004; Tsao et al. 2004; Wagner et al. 2003; Warren 2004; Wong & Aspinwall 2005; Wymer & Regan 2005; Zheng et al. 2004) or the success factors for pure online SMEs based on lessons learned from successful dot-coms (Barnes et al. 2004). | 33 |
| eBusiness barriers / drivers and their impact on B2B relationships / networking / alliances | Comparing perceived eBusiness barriers against whether SMEs participate in strategic alliances (MacGregor 2003; MacGregor & Vrazalic 2005b), examining the impact of website content features (along with other factors such as trust) on B2B eCommerce among SMEs (Lawson-Body & O`Keefe 2006), or looking at factors including eBusiness use which impact on SME owner/manager decisions to participate in formal networking arrangements (MacGregor 2004a). | 3 |

 

| Category | Description | Total |
|---|---|---|
| Adoption factor subset | Exploring of a subset of adoption factors (and in some cases the relationships between these factors) and their impact on the adoption of eBusiness technologies (Burke 2005; Clear & Dickson 2005; Dholakia & Kshetri 2004; Gemino et al. 2006; Grandon & Mykytyn Jr 2004; Grandon & Pearson 2004; Houghton & Winklhofer 2004; Khalifa & Davison 2006; Lee & Cheung 2004; Lucchetti & Sterlacchini 2004; MacKay et al. 2004; Martin 2005; Mohd Salleh et al. 2006; Piscitello & Sgobbi 2003; 2004; Premkumar 2003; Riemenschneider et al. 2003; Ritchie & Brindley 2005; Seyal et al. 2004; Spurge & Roberts 2005; Webster et al. 2005; Zhu et al. 2003). | 22 |
| Adoption factor impact on implementation / performance | Examining a subset of adoption factors and their impact on the success of eBusiness implementations (Caldeira & Ward 2003; de Guinea et al. 2005) or on the business performance of SMEs (Auger 2005; Shin 2006). | 4 |
| eBusiness integration / business transformation | Examining a subset of adoption factors (and in some cases the relationships between these factors) and their impact on the extent of eBusiness-enabled integration and/or business transformation (Daniel 2003; Kettinger & Hackbarth 2004; Lin & Lee 2005; Raymond et al. 2005), or categorising SMEs in terms of the extent of eBusiness integration against eBusiness sophistication (McGrath et al. 2006; Shiels et al. 2003). | 6 |
| eBusiness strategy | Exploring the complex interrelationships between business strategy, eBusiness strategy and firm performance (Karagozoglu & Lindell 2004; Locke 2004; Ray & Ray 2006; Rivard et al. 2006; Tse & Soufani 2003) (in some cases proposing models or reporting on the evolution of how eBusiness strategies are formed in SMEs (Alexander et al. 2003; Ashworth et al. 2006; Jones et al. 2003a; Kartiwi 2006; Paper et al. 2003; Tucker & Lafferty 2004), or a subset of adoption factors and their impact on how (if at all) eBusiness is used strategically by SMEs (Levy & Powell 2003; Martin & Matlay 2003). | 13 |
| eBusiness investment justification | Investigating the approaches to eBusiness investment evaluation and justification (Love & Irani 2004) or the benefits, costs and/or risks of eBusiness investment by SMEs (Love et al. 2005; Sharma & Bhagwat 2006a). | 3 |
| Website content analyses | Examining the extent of changes which occur to SME websites over time (Alonso Mendo & Fitzgerald 2005) or the information features of SME websites (Soto-Acosta & Merono-Cerdan 2006; Zafiropoulos et al. 2006). | 3 |
| Government eBusiness adoption measures | Arguing why the tendencies of government to use purely statistical measures of SME eBusiness adoption is inappropriate given the heterogeneous nature of SMEs (Putterill 2004). | 1 |
| Knowledge sharing and co-opetition | Exploring co-opetition among SMEs, issues regarding knowledge sharing and the role of eBusiness for managing knowledge (Levy et al. 2003). | 1 |
| Role of external parties on eBusiness adoption | Examining the role and potential impact of external parties such as government-funded eBusiness advisors, consultants, vendors and intermediaries on SME eBusiness adoption (Beckinsale et al. 2006; Brown & Lockett 2004; Simpson & Docherty 2004), interactions with trading partners, industry associations, vendors, etc and their impact on eBusiness use (Fink & Disterer 2006), or the effects of interventions initiated by researchers to improve eBusiness adoption by SMEs, such as providing eBusiness consulting (Ihlstrom & Nilsson 2003; Matlay & Addis 2003; McGovern & Hicks 2004) and developing educational resources (Hari et al. 2005). | 8 |

*Table 5: Summary of research objectives*

A number of insights emerged when we categorised the articles based on their primary research objective:

Firstly, it is apparent that the majority of the SME-eBusiness articles analysed focus primarily on studying the SMEs themselves (Brown & Lockett 2004), with limited research into the supply-side of innovation diffusion (some notable exceptions are Beckinsale et al. 2006; de Guinea et al. 2005). The need for more research which specifically addresses this issue was evident in the few articles which did explore, to some extent, the dissatisfaction with vendors, consultants and Internet Service Providers (ISPs) by some SMEs. For example, some SMEs did not know whom they could trust regarding eBusiness knowledge, did not achieve the anticipated benefits from the eBusiness solutions provided, or believed vendors/consultants cost too much (see Al-Qirim 2006; Brown & Lockett 2004; de Guinea et al. 2005; Karanasios & Burgess 2006; Lawson et al. 2003; Stansfield & Grant 2003). In addition, Jones et al (2003a) also found conflicting expectations between SMEs and ISPs/advisers, where SMEs expected them to provide eBusiness "how-to" knowledge, but the ISPs/advisers did not have the ability or desire to provide it. Similarly, only a few studies examined the role of governments, industry associations, clusters and business networks (a few exceptions include Brown & Lockett 2004; Lawson et al. 2003; Martin & Matlay 2003; Simpson & Docherty 2004; Spurge & Roberts 2005), but where such roles were examined it was often a by-product rather than a focus in many of these studies. Fink & Disterer (2006) and Beckinsale et al. (2006) were notable exceptions because they specifically looked at the impact of external parties such as trading partners, industry associations, vendors, etc on eBusiness adoption by SMEs. Further, some authors studied the role of web-based information resources (Thomas et al. 2004) and the impact of the accreditation of ICT advisers (Morgan et al. 2006), but these studies did not examine the impact of these initiatives on SMEs themselves. Simpson & Docherty (2004) were an exception to this. This indicates that there is a need for research which looks beyond SMEs themselves and focuses on the supply-side of eBusiness, such as how SMEs can gain eBusiness "know-how" or "how-to" knowledge and which sources are effective and trusted by SMEs.

Secondly, a large number of studies focused on identifying adoption factors, which suggests that there is a need for more novel SME-eBusiness studies which move beyond identifying or confirming the influence of adoption factors. To a large extent Wymer & Regan's (2005) consolidation of previous SME-eBusiness adoption factor research into a single, coherent framework of factors should obviate the need for studies aimed purely at identifying factors. The exception might be those studies which examine comparatively new or neglected eBusiness applications. For example, Clear & Dickson (2005) looked at SME teleworking practices, Fisher & Craig (2005) and Gengatharan & Standing (2005) examined regional electronic marketplaces for SMEs, and Wong & Aspinwall (2005) studied SME knowledge management adoption factors. These studies identified some adoption factors which were different to previous research due to the unique attributes of their respective eBusiness domain. While adoption factor based studies are useful, we argue that the SME-eBusiness research community has now reached a point where we can progress beyond these well-established adoption factors and start to conduct research which will help SMEs to overcome the barriers and exploit the drivers. Examples might include researchers taking a more active, rather than observational, role in helping to improve SMEs' perception of the relevance of eBusiness. This could involve more action research studies such as those summarised in section 3.1 and Matlay & Addis' (2003) study of the impact of higher-education-based consultancy on SME adoption of eBusiness in particular. This would complement our call for more innovation supply-side research which we suggested previously.

Thirdly, we found that there is a tendency in the SME-eBusiness literature to treat SMEs as a homogenous group, varying only on the basis of broad demographics such as size and industry. Some authors (for example, see Beckinsale et al. 2006; Castleman 2004; Levy & Powell 2003; Matlay & Addis 2003; Putterill 2004; Ramsey et al. 2003; Taylor & Murphy 2004) point out, however, that individual SMEs vary widely from one another in ways overlooked by many studies, such as strategic focus, customer orientation, business growth, business processes, owner attitude and social networks. In addition, Castleman (2004) also argues that empirical evidence in Australia shows that not all small business operators are governed by business-oriented objectives such as profit, growth, competitive advantage and so on. Many small business decision-makers exhibit quite different (but equally understandable) rationalities which are governed more by social and family issues. For example, their decisions might be influenced by issues such as preserving the owner's sense of personal identity and control which is defined by their firm, ensuring that the owner has more time for family, maintaining parental authority in the firm, and even cementing relationships with friends, social networks and customers through telephone and face-to-face interactions. Bottom-line considerations are less important to these types of small firms than social and family issues. This is perhaps why studies which treat SMEs homogenously find conflicting results concerning the correlations between owner, firm and environmental adoption factors, and the uptake of eBusiness technologies and applications (for example, see Wymer & Regan 2005). This should not come as a surprise, we posit, because the heterogeneous nature of SMEs (and of eBusiness, as we argued in section 3.2) implies there are a plethora of combinations of factors potentially influencing eBusiness adoption and/or use by SMEs. The limited sample sizes in current SME studies could never hope to discover correlations

 

between a full set adoption factors (if indeed such a list could be compiled) and the set of SME characteristics describing their heterogeneity. In addition, this SME diversity also implies that the benefits of a business application of eBusiness technology could be perceived and valued quite differently among SMEs due to their heterogeneity. The challenge for researchers in future studies (as well as for practitioners) will be determining ways in which we might match the unique combination of characteristics exhibited by and business objectives of a particular SME with one or more specific business applications of eBusiness technology. This also suggests that only some (if any) eBusiness applications might be appropriate for specific SMEs, and that their non-adoption decisions are perfectly rational (see Castleman 2004).

This emphasises the importance of future research which explores how eBusiness solution providers and advocates (including researchers themselves) can help SME senior managers to understand and match the benefits of a specific business application of eBusiness technology with their unique context and business needs. We also need to avoid what Castleman (2004) calls a technological expansionist view that adoption is always a good thing and that failure to adopt is a sign of failure, for instance, of the SME or government. Instead, we believe that non-adoption by SMEs can be appropriate and, indeed, desirable if eBusiness solution providers cannot demonstrate to SMEs that an eBusiness-based solution can address their specific business needs and context, or if the SME's specific needs and context does not lend itself to eBusiness.

Our initial suggestions on potential future research directions for SME-eBusiness researchers which we believe will help address these issues are outlined in the next section.

# 4 Proposed directions for research on SME eBusiness behaviour

One major change in future research direction we suggest, based on the limitations of existing SME-eBusiness literature, is to focus more critically on the supply-side of eBusiness. While the existing research has identified a range of adoption factors, such as owner and firm characteristics, it is unrealistic to expect SMEs to change many of these characteristics (for example, become less risk averse) so that they will be more likely to adopt eBusiness. Instead, future research needs to be more critical of the responsibility and ability of vendors, consultants, ISPs and other solution providers to provide each individual, unique SME with a compelling business case to adopt an eBusiness solution which matches their personal and business goals. The appropriateness of this eBusiness supply-side approach to future research can be seen both from a theoretical and empirical point of view:

- Rogers' (1995) innovation diffusion theory emphasises the essential role of perceived relative advantage as an innovation characteristic influencing the rate of adoption. Indeed, relative advantage (or perceived benefit) is a strong predictor of adoption, although on its own it does not guarantee adoption (Al-Qirim 2005; Ching & Ellis 2004; Del Aguila-Obra & Padilla-Meléndez 2006; Fillis et al. 2003; Gemino et al. 2006; Kaynak et al. 2005; Pflughoeft et al. 2003; Stansfield & Grant 2003; Wymer & Regan 2005). For a benefit to be perceived, however, it stands to reason that a business application of eBusiness technology must address a specific business need or problem of the SME, and that the decision-maker(s) of the SME are convinced of this benefit. The importance of convincing an SME decision-maker of the benefit is also implied in Rogers' innovation-decision process where the first three stages involve: (1) gaining knowledge about an innovation (for example, awareness and know-how knowledge); (2) which leads to an attitude toward the innovation; and (3) then a decision regarding adoption. The degree to which Rogers' theory applies to SMEs might be debated and will be the subject of another paper. However, the theory does support the notion that the business applications of eBusiness technology must match the unique context and business needs of an SME (or there will be no perceived relative advantage), and that an important role for eBusiness solution providers is to offer know-how knowledge which is convincing to influence attitudes and adoption decisions.

- Attewell's (1992) theory of complex innovation adoption (which includes eBusiness applications) argues that what he calls *mediating institutions* (who are typically solution providers) have a central role to play. This is because the adoption of complex innovations requires the transfer of complex know-how knowledge which is typically only obtained when organisations learn by using the adoption, which helps explain why SME knowledge about eBusiness and its benefits does not necessarily result in adoption. Mediating institutions create and accumulate the know-how as a result of implementing on behalf of many adopters, and thus achieve economies of scale.

- Davis' Technology Acceptance Model (TAM) is an extension of the Theory of Reasoned Action (TRA) which posits that perceived ease of use and perceived usefulness are predictors of attitudes towards use and intentions to use a technology (Grandon & Pearson 2004). Perceived usefulness is associated with perceived benefit, because it relates to the extent that an individual (such as an SME owner/manager) believes a technology (an eBusiness application in this context) will have a performance benefit (Riemenschneider et

 

al. 2003). Grandon & Pearson (2004) found that the perceived usefulness and ease of use constructs were among the most significant factors influencing Internet/web adoption. TAM and the associated findings of Grandon & Pearson provide support for the notion that it is important that SME decision-makers perceive that an eBusiness application will address the business need of an SME. This suggests that eBusiness solution providers have a central role in changing SME decision-maker perceptions.

- The Theory of Planned Behaviour (TPB) is also an extension of TRA and aims to explain the link between attitudes and behaviour intention, which consequently can lead to action such as the adoption of an eBusiness application (Harrison et al. 1997). Harrison et al. (1997) explains that a positive attitude toward a behaviour (such as adoption of an eBusiness application) is based on the degree to which the person believes mostly positive outcomes (such as benefits) will occur. This supports the notion that external parties will have a central role in encouraging positive attitudes among SME decision-makers.
- Reimenschneider et al. (2003) devised a model which comprised TAM and TPB. Similarly, Venkatesh et al. (2003) developed the Unified Theory of Acceptance and Use of Technology (UTAUT) which combines eight theoretical models including TAM and TPB. Factors such as relative advantage, perceived usefulness and outcome expectations (which are all interrelated and based on a perception of benefits from adoption or use) underpin the UTAUT's performance expectancy construct. Reimenschneider et al. (2003) found that their combined model demonstrated a more superior fit with their data, and that the decisions by small firm executives to adopt websites were primarily due to anticipated benefits and social approval. Again, this supports the notion that an important aspect of SME adoption of a business application of eBusiness technology is an expectation that it will address a specific business need, and also that external parties will have a central role in shaping these expectations.

This suggests that unless SME senior managers (or employees in an SME) already have a positive attitude toward eBusiness and know-how, eBusiness solution providers and advocates need to convince SME senior managers (and promote positive attitudes) that the firm can obtain benefits before adoption will occur. We therefore posit that there is a need for eBusiness supply-side research which investigates and develops programmes, approaches and tools to help SME owners (or the external parties who might help them) to determine which eBusiness applications correspond with the unique context of each SME and their specific business needs.

Our analysis of the limitations of the existing SME-eBusiness literature enabled us to identify a number of new directions for future research, many of which will involve a greater eBusiness supply-side view of SME adoption of eBusiness:

1. Explore the dimensions on which SMEs are heterogeneous using both quantitative and qualitative research which builds upon recent work in the SME-eBusiness field (for example, see Beckinsale et al. 2006; Castleman 2004; Levy & Powell 2003; Matlay & Addis 2003; Putterill 2004; Ramsey et al. 2003; Taylor & Murphy 2004) and the small business literature more generally. Such dimensions of heterogeneity might include the strategic focus, customer orientation, business growth, business processes, owner attitude toward technology and social/business network participation of SMEs. This might also include identifying the full range of different business goals which SMEs might have, such as leisure and lifestyle in addition to more economic rationalist goals such as firm growth. The development of survey and interview instruments aimed at exploring SME adoption/use of eBusiness should include constructs which take these heterogeneous dimensions of SMEs into account.
2. Identify the full range of eBusiness applications which are applicable to SMEs. There is already research in this area which can be drawn upon, but the tendency of existing literature to treat the Internet and Web (for instance) homogeneously highlights the need to distinguish between the uses of these technologies for sales, product catalogues, payments, online brochures, employee recruitment, online banking and online service delivery. Since the literature focuses on Internet, Web and email use by SMEs, future research should also provide greater attention to other technologies such as mobile computing and associated business applications such as telework. Future quantitative and qualitative research can focus on determining which applications are most suitable for which SME business goals and dimensions of heterogeneity.
3. Examine the internal parties (such as business partners, employees, etc), family, friends and external influences (such as education institutions, consultancies, government, industry associations, accountants, vendors, etc) SMEs trust most for eBusiness advice, support and services. This research should also investigate the reasons underpinning this trust, which might depend on the heterogeneous characteristics of the SME, the type of advice/service being provided, previous experience with the parties concerned, and other issues.

 

4. Investigate the knowledge expectation gaps between SMEs and particular types of parties in terms of their eBusiness know-how and other needs. For example, the evidence from our literature analysis suggests that there might be different expectations of SMEs and ISPs/vendors/consultants with regards to the types of eBusiness related knowledge and services which are needed. Similarly, the parties which SMEs might trust for business advice (see the previous point concerning trust) may not have the required eBusiness knowledge, and thus present another type of expectation gap. This will necessitate network analysis type research (using a combination of quantitative and qualitative data collection approaches) to examine this complex mix of influences of internal and external parties on SME decision-makers regarding the appropriateness and uptake of specific eBusiness applications. Beckinsale et al (2006) provides a good starting point for this type of research, which includes a suggested way in which to model the interrelationships between actors in the network of individuals and businesses.

5. Explore the types of intervention strategies which can be used within the network of trust and eBusiness support relationships aimed at SMEs. Research in this area could include quantitative and qualitative research which examines the effectiveness of particular strategies, such as tools for assisting small firms with performing cost-benefit analyses for specific eBusiness applications, education programmes (such as workshops and role-playing simulations), skills and advice resource offerings, action-oriented consultancies, and so on. This research could also investigate which parties are best positioned to use particular intervention strategies based on SME trust preferences, as well as recognising the heterogeneity of SMEs.

6. Identify and investigate new forms of eBusiness solutions which address the difficulties which SMEs face using eBusiness applications. For example, this might include novel solutions to address security concerns or the difficulties faced with integrating software from different providers. This could include research which is now emerging concerning SME use of Application Service Providers (see, for example, Brown & Lockett 2007; Lee et al. 2007).

7. Conduct longitudinal research using both quantitative and qualitative data collection approaches to address the current limitation in existing research which tends to provide single snap-shots SME adoption of eBusiness. This could include action research projects, longitudinal case studies and comparing survey results over an extended period of time. Longitudinal research is important because SMEs can develop their eBusiness capability or change their direction quite quickly, and because it charts eBusiness adoption development and the effect of experience, experimentation and intervention by third parties.

8. Design data collection regimes to include observations of *actual* use of eBusiness by SMEs rather than relying entirely on informant perceptions of use. This was identified as a major limitation of existing SME-eBusiness research. We recognised that observing actual use is more difficult, time-consuming and less generalisable (especially longitudinal case studies and action research), but it would offer a way to verify whether any differences between perceived and actual use/practices exist. This could be achieved with minimal additional investment of time if researchers conduct a few confirmatory studies which investigate actual eBusiness practices by SME managers and employees; and which complement surveys and semi-structured interviews which rely upon the SME informant's perceptions.

9. Examine cross-cultural variances which can occur among SMEs in various countries to identify, for instance, the similarities and differences with regards to adoption profiles, the influence of regional contexts, and the extent to which SME heterogeneity varies between countries (if at all). An important research direction identified from our literature analysis is the need to encourage further research into SME eBusiness adoption in non-native English speaking countries and developing countries. Where this research is occurring, we need to encourage publication of this research in English language journals to broaden the profile of the existing body of SME-eBusiness research which currently tends to be biased towards the UK, USA, Australia and New Zealand.

It is beyond the scope of this paper to elaborate on these potential research directions further – this will be the focus of future papers. However the proposed research directions (resulting from our extensive literature analysis) provide some initial, broad suggestions for SME-eBusiness researchers on future research which can be explored and on issues to consider when designing future data collection instruments. More specifically, we anticipate that the initial ideas outlined here will encourage researchers to undertake research which moves beyond adoption factor type studies. Indeed, we anticipate that research in the areas identified could well contribute to greater levels of adoption of eBusiness applications by SMEs – if adoption is applicable to the specific SMEs at all.

 

# 5 Conclusions

The paper presented an analysis of recent SME-eBusiness literature which addresses limitations of previous similar studies by analysing current journal articles from 2003 to 2006 (instead of pre-2000 articles) from a range of journals (instead of just a few journals). More importantly the paper was more than just a meta-analysis of adoption factors, because it identified trends emerging relating to eBusiness applications and countries studied, data collection approaches used and primary research objectives focused upon. The paper highlighted potential future research directions based on these major trends including the need for research which:

- considers the heterogeneous nature of eBusiness (and its varied business applications) and of SMEs;
- focuses on the supply-side of eBusiness diffusion;
- studies the temporal effects related to SME use of eBusiness applications with longitudinal studies; and
- moves beyond the current focus on identifying and studying specific adoption factors by looking at the social, knowledge sharing and trust aspects associated with adoption decisions by SMEs.

We believe our suggestions for future research directions will have important implications because we anticipate they will encourage the practitioner and research communities to take a more active role in promoting SME adoption of eBusiness and to take into account that specific eBusiness applications should match with the unique context and business needs of SMEs. We argue that an important aim of this future research should be on identifying and investigating appropriate programmes, approaches and tools which can help SME owners (and the external parties who might help them) to make informed decisions about which business applications of eBusiness technologies are appropriate for them.

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Tanya Castleman is Professor of Information Systems and Head of the Deakin Business School. Her research concentrates on the social and organisational aspects of eBusiness. She has investigated the social and organisational dynamics of companies and their relationship to eBusiness design, adoption and use. Her research examines these issues in both large and small organisations as well as in supply chains and virtual networks. In addition to her academic research which is internationally recognised, Tanya has conducted research consultancies on a range of eBusiness topics.

 