

A Preliminary Meta-Analysis of SME-eBusiness Journal Publications: Current Trends and Future Research Opportunities Moving Beyond Adoption Factor Studies

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Abstract

Previous meta-analyses of SME-eBusiness journal research focuses on analysing adoption factors, pre-2000 articles and a small number of journals. This paper departs from this research by analysing 100 articles published between 2003 and 2006 in 41 journals on the basis of the research approaches employed, countries and eBusiness technologies studied, and research objectives focused upon. The paper presents preliminary insights into current major research trends based on this analysis, such as the predominant focus on adoption factor by many studies. It also identifies future research opportunities, and proposes a research agenda which aims to progress SME-eBusiness research beyond adoption factor studies by outlining research objectives to help SMEs overcome barriers and exploit drivers.

1. Introduction

Small and medium enterprises (SMEs) and their adoption and use of various forms of Electronic Business (eBusiness) has been the subject of considerable research, especially over the last decade with the commercialisation of the Internet. A non-exhaustive search of the literature uncovered at least 100 journal articles with a focus on SMEs and eBusiness – many of which looked at Internet or website adoption and use in particular. It is therefore an opportune time to conduct a meta-analysis of an indicative collection of recent SME-eBusiness journal articles to identify trends and future research opportunities.

Recent meta-analyses relating to SMEs and eBusiness have focused on identifying and analysing factors (drivers and barriers) which aim to predict or explain why SMEs (do not) adopt different forms of eBusiness [see 1; 2]. Premkumar's [1] meta-analysis in particular only examined pre-2000 articles, and did not include non-IS journals or eBusiness journals (eg, *Journal of Small Business and Enterprise Development* and *Electronic Markets* respectively) which publish SME-eBusiness studies.

While such "adoption factor" meta-analyses are useful, they do not offer insights into broader trends relating to the types of research (eg, research approaches and objectives) being conducted and into the future research opportunities these trends might present. Jeyaraj et al's [3] recent meta-analysis addresses this to some extent when examining possible research biases in adoption studies, but they studied primarily pre-2000 research on individual and organisational adoption of IT generally, not recent SME-eBusiness focused research.

This paper makes an important contribution by addressing these limitations of past meta-analyses because: it analyses 100 SME-eBusiness journal articles published from 2003 to 2006 (not pre-2000 articles); it includes non-IS and eBusiness journals (41 journals in total); and it identifies current major trends in the research approaches employed, countries and eBusiness technologies studied, and research objectives focused upon, rather than analysing

adoption factors as in previous meta-analyses. It must be noted that this paper presents a preliminary meta-analysis and indicative current major trends, because we did not analyse articles from all journals and did not include conference papers and book chapters presenting more recent work than is typically found in journal articles due to their publication lead times.

Most importantly, we believe, the broader meta-analysis presented in this paper has resulted in the identification of future research opportunities we hope will promote research which moves beyond the current tendency in the SME-eBusiness literature to focus on observed adoption factors. Among these opportunities, we argue that an important future research objective is to develop programmes, approaches and tools which can help SME owners (and the external parties who might help them) to make informed decisions about which eBusiness solutions are appropriate given the unique characteristics of each SME.

The paper is structured as follows. We firstly explain how we identified relevant journal articles and discuss the limitations of our approach. We then present our analysis of the articles, including current major trends and future research opportunities. We then outline a future research agenda based on our article analysis. Finally, we present concluding remarks.

2. Approach to identifying SME-eBusiness journal articles

Articles used for the meta-analysis were selected on the basis that they were journal articles involving conceptual or empirical work focusing on SMEs (or comparing them with large firms) and eBusiness. The search for SME-related articles included terms such as *small business* and *small firm* to find relevant articles. eBusiness included EDI, Internet, websites, email, intranets, supply chain management (SCM), customer relationship management (CRM), knowledge management (KM), etc. The articles were identified using searches in online research databases such as Emerald, ScienceDirect and EBSCOHost, where the journals used were those predominantly available in full-text via our University's library.

As stated earlier, our objective was to gain preliminary, indicative insights into the current major trends and future opportunities in SME-eBusiness research. For this reason, we only included articles published between 2003 and 2006. This resulted in 100 journal articles.

Table 1 summarises the 41 journals from which the articles were identified and analysed. It is not surprising that many of the articles came from journals dedicated to SMEs such as JSBED and SBE, in addition to highly regarded IS and eBusiness journals such as EM, EJIS and I&M. This table demonstrates that there are a wide range of publishing outlets for SME-eBusiness research. In addition, it can also be seen that SME-eBusiness articles have been appearing consistently throughout 2003 to 2005, with similar numbers of articles each year. It will be interesting to see if similar numbers of SME-eBusiness articles emerge in 2006. 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.

There are a number of limitations of this approach to the meta-analysis. Firstly, the long publication cycle of many journals (typically between 6 to 24 months) means that this analysis reflects SME-eBusiness journal publications rather than the most recent research. The latter would still be filtering through the journal publication processes. Including conference papers and book chapters would have helped address this problem, but we wanted to focus our analysis on publications which were likely to be of higher quality than those typically found in conferences. Indeed, journal articles are often improved versions of conference papers which incorporate feedback from conference participants and reviewers. Secondly, the journals analysed did not constitute a complete list of articles on SME-eBusiness research published worldwide during 2003 to 2006. For example, there might be

journals not abstracted or available via the major online research databases we used (eg, online-only journals), or journals which are not readily available electronically in full-text.

Table 1. Summary of journal articles identified

Journal Name	'03	'04	'05	'06	Total
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
European Business Review (EBR)	1				1
Engineering Construction & Architectural Management (EC&AM)			1		1
European Journal of Information Systems (EJIS)	2	3	1		6
Electronic Markets (EM)	1	3	6		10
Information & Management (I&M)	1	3	1		5
International Journal of Information Management (IJIM)				1	1
Irish Journal of Management (IJM)	1				1
International Marketing Review (IMR)			1		1
Info			1		1
Internet Research (IR)				1	1
International Small Business Journal (ISBJ)		2			2
Information Systems Frontiers (ISF)		1			1
Information Technology & Management (IT&M)	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
Journal of Electronic Commerce Research (JECR)	1	1			2
Journal of Enterprise Information Management (JEIM)		1	1		2
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 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
Logistics Information Management (LIM)	1				1
Management Decision (MD)			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			4
Supply Chain Management (SCM)	1				1
TOTAL	33	35	28	4	100

Despite these limitations, the use of recent, readily accessible journal articles via major online databases still enabled us to generate useful preliminary, indicative insights into the current, major research trends and potential future research opportunities. In addition, a larger number of articles would have become unmanageable given the preliminary nature of this study. For this purpose, we believe that the 100 journal articles identified were a sufficiently large number and cross-section of journals for this exercise. Table 1 also shows that many of the leading journals where we would expect to find SME-eBusiness articles are included.

3. Major current SME-eBusiness research trends and future opportunities

In this section we identify major current trends emerging from our meta-analysis of SME-eBusiness articles by examining the eBusiness technologies and countries studied, the research methods employed and the primary research objectives of the articles. This preliminary analysis enabled us to identify commonalities in the literature and to determine opportunities for future research. Given the preliminary nature of this analysis and space limitations, it is beyond the scope of this paper to do more detailed analysis, such as comparing (for instance) the research objectives with research approaches employed. It should also 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 research approaches

The majority of the research approaches employed by researchers in the SME-eBusiness articles analysed were, not surprisingly, observational in nature. It was encouraging that both qualitative and quantitative studies of varying types were published, including single case studies. A summary of the research approaches used in the articles is provided in Table 2. It should be noted that studies which involved (semi-structured) interviews purely to develop a survey instrument were not categorised as “combined qualitative and quantitative studies”, because the findings from the interviews were not reported in these articles.

Table 2. Summary of research approaches employed

Research Approach(es)	'03	'04	'05	'06	Total
Conceptual / literature review only	2	4	1		7
<i>Qualitative only studies – 32 articles</i>					
Semi-structured interviews	5	5			10
Case studies	9	5	3	1	18
Case study (longitudinal)		1			1
Action research (longitudinal)	1	1			2
Case studies and semi-structured interviews			1		1
<i>Quantitative only studies – 45 articles</i>					
Postal/email survey	7	15	15	2	39
Postal/email survey (longitudinal)			1		1
Phone survey		1	2		3
Website survey (longitudinal)			1		1
Postal/email and website survey	1				1
<i>Combined qualitative and quantitative studies – 16 articles</i>					
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	1	8
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	33	35	28	4	100

It can be seen from Table 2 that only seven studies reported results from longitudinal research, such as comparing survey results over time, or studying SMEs and their eBusiness use over time. This finding suggests there is an opportunity for longitudinal quantitative and qualitative studies examining temporal issues affecting SME eBusiness use.

More significantly, perhaps, another issue emerging from this analysis of research approaches is that the SME-eBusiness articles analysed primarily observe eBusiness use and adoption among SMEs. There are comparatively few examples in which the primary objective of researchers is to take an active (rather than observational) role in encouraging

and supporting SME use of eBusiness. Some notable exceptions were Ihlstrom & Nilsson and McGovern & Hicks' [4; 5] action research studies where they assisted SMEs with eBusiness projects and knowledge development, and Hari et al's [6] knowledge management education CD developed for the construction industry. This issue and related future research opportunities are explored further in section 4 where we discuss a proposed research agenda.

A further issue with the existing focus on observational research approaches is that many of these studies (especially surveys) rely upon SME owner/manager perceptions. Jeyaraj et al [3] point out that, in the context of individual and organisational IT adoption, there is some evidence emerging that perceived system use does not correlate with actual system use. This suggests that research approaches which focus on an SME respondent's perception of eBusiness use might not produce reliable insights into actual eBusiness usage or practices (eg, strategy development). Future research approaches which observe *actual* behaviour (eg, case studies and action research) might address this. It is recognised that such observations are more difficult and less generalisable than surveys, but they offer a way to verify whether any differences between perceived and actual use/practices exist in the SME-eBusiness context.

3.2. eBusiness technologies and applications studied

Further indicative insights were gained when examining the eBusiness technologies and applications empirically studied by the journal articles analysed, as summarised in Table 3. The articles were categorised based on the eBusiness examples specified by authors or, if this was unclear, based on the description in their results. This proved to be a challenge in some cases where authors referred merely to the Internet, Web (or websites), eCommerce, eBusiness, ICT, IS/IT, etc when reporting their empirical findings, rather than the specific technologies or applications used (or not) by SMEs. The conceptual/theoretical papers, which have been separated in Table 3, tended to fall into this generic, non-specific category also.

Table 3. Summary of eBusiness technologies and applications investigated

eBusiness Technologies and Applications	'03	'04	'05	'06	Total
Conceptual / theoretical papers	2	4	1		7
eBusiness technologies unclear or unspecified (eBusiness generally)	1	3	3		7
Web generally	8	15	6	2	31
Web generally plus email	2				2
Internet generally	1	1	1		3
Internet use generally plus mobile phone		1			1
Many eBusiness technologies and applications (eg, research, sales, CRM)	12	6	4	1	23
Many eBusiness technologies plus EDI	4	3	3		10
Focus on supply chain technologies (plus possibly other technologies)	2	2	2		6
Knowledge management (plus possibly other technologies)	1		2	1	4
Electronic marketplaces			2		2
Teleworking			2		2
Broadband Internet			1		1
Online training			1		1
Total	33	35	28	4	100

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 applications such as a sales channel, product catalogue, payment channel, online brochure, etc. Treating the Internet or Web collectively fails to consider that there might be different mitigating factors influencing why SMEs (do not) adopt, or vary in their use of, specific applications of Internet/Web technology – or if the applications are even applicable to particular SMEs at all. This limitation of existing SME-eBusiness research must be addressed in future studies to ensure

that the heterogeneous applications of the Internet/Web are treated separately. The implications of this for future research are examined in more detail in sections 3.4 and 4.

Another major observation is that, not surprisingly, there has been a strong focus by 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 applications which have received comparatively little attention, such as SME use of teleworking, online training, mobile commerce, etc. We must emphasise, however, that it is likely that there are other SME studies in these areas we did not identify due to the preliminary nature of this work, and that more exhaustive article searches could determine the full extent of research in these areas.

3.3. A predominant focus on single country studies

Further current 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.

Table 4. Summary of countries studied

Country) 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	1	23
USA	5	5	4	1	15
Australia	4	1	4		9
Canada		1	2	1	4
Ireland	4				4
Italy	2	2			4
New Zealand	1	2	1		4
Scotland	2		2		4
Sweden	2	2			4
Hong Kong	1	2			3
South Africa	1	1	1		3
Taiwan		1	1		2
Turkey	1		1		2
Chile		1			1
Pakistan		1			1
Portugal	1				1
Spain				1	1
Two Countries					
Australia and Sweden			2		2
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	33	35	28	4	100

The first major observation from Table 4 is that a large proportion (nearly a quarter) of the SME-eBusiness articles analysed concerned UK SMEs. 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 [eg, 7] and the West Midlands [eg, 8]. In addition, nearly half the articles analysed investigated SMEs in the UK, USA and Australia. This suggests that

there are future research opportunities and 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 journals accessible via online databases.

Another major observation from Table 4 is that only seven of the articles analysed included cross-country comparisons. Not surprisingly, the country combinations for which there were two articles were written by the same authors: MacGregor & Vrazalic [9; 10] conducted the two Australia-Sweden comparative studies; and Beck et al [11; 12] conducted the two USA-Germany-Denmark-France comparative studies. Again, this suggests a future research opportunity for further cross-cultural SME-eBusiness studies.

3.3. A predominant focus on SME adoption/use of eBusiness

More interesting current major trends in the SME-eBusiness literature were identified when developing a preliminary, indicative classification of the articles based on the primary research objective stated by authors or, where this was unclear, by our assessment of the nature of the empirical findings to deduce the primary objective. The classification emerged inductively through content analysis carried out by the first author. The first step 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 first author then wrote a short summary of each article's primary research objective in a word processed document, and then identified broad themes using a condensation approach.

A major limitation of this approach is possible researcher bias, because the summaries, condensation and resulting themes were not independently verified by a second researcher. We believe, however, that the indicative trends identified serve as a useful starting point for future studies looking to analyse the SME-eBusiness literature on the basis of research objectives, since it appears that no previous meta-analysis of this kind has been conducted on the SME-eBusiness literature. This future research could, for instance, involve more thorough and independently verified content analyses of a greater number of recent (and even earlier) articles and their research objectives. We have included below the complete list of articles in each category identified to aid in future independent verification and replication of this work.

As stated in section 3.1, most articles analysed focused on observing SMEs with respect to eBusiness. Indeed, the majority of the articles analysed 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 foci of the studies.

There are a number of indicative insights which emerged when we compiled these preliminary categories (or trends) in Table 5 regarding the article research objectives:

Firstly, it is apparent that the majority of the SME-eBusiness articles analysed focus primarily on studying the SMEs themselves [13], with only brief (if any) research into the supply-side of innovation diffusion [see 14 for a notable exception]. 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 and/or consultants by some SMEs. For example, some SMEs did not know who they could trust regarding eBusiness knowledge, did not achieve the anticipated benefits from eBusiness, or believed vendors/consultants cost too much [see 13; 14-16]. In addition, Jones et al [17] 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 have examined the role of governments, industry associations, clusters and business networks [13; 15; 18 are a few exceptions; 19; 20], but this is more of a by-product

rather than a focus in many of these studies. This suggests there is a need for research which also looks beyond SMEs themselves and focuses on the supply side of eBusiness, such as how SMEs can gain eBusiness know-how and which sources are effective and trusted.

Table 5. Summary of research objectives

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 [21-26].	6
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 [11; 12; 16; 27-36].	13
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 [7; 9; 15; 37-62] or the success factors for pure online SMEs based on lessons learned from successful dot-coms [63].	30
eBusiness barriers and networking/alliances	Comparing perceived eBusiness barriers against whether SMEs participate in strategic alliances [10; 64], or looking at factors including eBusiness use which impact on SME owner/manager decisions to participate in formal networking arrangements [65].	3
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 [1; 19; 66-83].	20
Adoption factor impact on implementation / performance	Examining a subset of adoption factors and their impact on the success of eBusiness implementations [14; 84] or on the business performance of SMEs [85].	3
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 [86-89], or categorising SMEs in terms of their extent of eBusiness integration against eBusiness sophistication [90].	5
eBusiness strategy	Exploring the complex interrelationships between business strategy, eBusiness strategy and firm performance [91-93] (in some cases proposing models or reporting on the evolution of how eBusiness strategies are formed in SMEs [17; 94-96]), or a subset of adoption factors and their impact on how (if at all) eBusiness is used strategically by SMEs [20; 97].	9
eBusiness investment justification	Investigating the approaches to eBusiness investment evaluation and justification [98] or the benefits, costs and risks of eBusiness investment by SMEs [99].	2
Website changes over time	Examining the extent of changes which occur to SME websites over time [100].	1
Government eBusiness adoption measures	Arguing why the tendencies of government to use purely statistical measures of SME eBusiness adoption is inappropriate given the heterogenous nature of SMEs [101].	1
Knowledge sharing and co-opetition	Exploring co-opetition among SMEs, issues regarding knowledge sharing and the role of eBusiness for managing knowledge [102].	1
Role of external parties on eBusiness adoption	Examining the role and potential impact of external parties such as government-funded eBusiness advisors and intermediaries on SME eBusiness adoption [13; 18], or the effects of interventions initiated by researchers to improve eBusiness adoption by SMEs, such as providing eBusiness consulting [4; 5; 8] and developing educational resources [6].	6

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 adoption factors. To a large extent Wymer & Regan's [61] 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 which examine other eBusiness applications. For example, Clear & Dickson [74] looked at SME teleworking practices, Fisher & Craig [51] and Gengatharan & Standing [41] examined

regional electronic marketplaces for SMEs, and Wong & Aspinwall [60] 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 posit 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 barriers and exploit drivers. Examples, in addition to innovation supply-side research, might include researchers taking a more active, rather than observational, role in helping to improve the relevance of eBusiness for SMEs, such as the studies summarised in section 3.1 and Matlay & Addis' [8] study of the impact of higher-education-based consultancy on SME adoption of eBusiness. In section 4 we provide an overview of a proposed research agenda which might help address this future need by SMEs.

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 [eg, see 8; 46; 56; 97; 101] 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, social networks, etc. This is perhaps why studies which treat SMEs homogeneously find conflicting results concerning the correlations between owner, firm and environmental adoption factors and the uptake of eBusiness technologies and applications [eg, see 61]. This should not come as a surprise, we posit, because the heterogeneous nature of SMEs (and of eBusiness – see 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 an eBusiness application 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 a particular SME with one or more eBusiness applications. This also suggests that only some (if any) eBusiness applications might be appropriate for some SMEs, and that non-adoption decisions are perfectly acceptable and appropriate.

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 eBusiness application with their unique characteristics. A proposed research agenda to address this is outlined in the next section.

4. Overview of a proposed future research agenda

The appropriateness of an eBusiness supply-side focused research agenda which focuses on matching the benefits of a specific eBusiness application with unique SME characteristics can be seen both from a theoretical and empirical point of view. For example:

- Rogers' [103] innovation diffusion theories emphasise the essential role of perceived relative advantage as an innovation characteristic influencing the rate of adoption. He also points out that the typical innovation-decision process initially involves gaining knowledge about an innovation (eg, awareness and know-how knowledge) which leads to an attitude toward the innovation, and then a decision regarding adoption.

- Davis' Technology Acceptance Model (TAM) is an extension of the Theory of Reasoned Action (TRA) which uses perceived ease of use and perceived usefulness as predictors of attitudes towards use and, consequently, intentions to use [69]. 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 or application (eg, an eBusiness application) will have a performance benefit [76].
- 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 [104]. Harrison et al [104] 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.
- Venkatesh et al [105] developed the Unified Theory of Acceptance and Use of Technology (UTAUT) which combines eight models including TAM and TPB. Factors such as relative advantage, perceived usefulness and outcome expectations (which are all interrelated) underpin the UTAUT's performance expectancy construct.
- Despite the heterogenous nature of SMEs, empirical findings in the SME-eBusiness literature consistently show, perhaps unsurprisingly, that perceived benefits (or related perceived value, relative advantage and usefulness) is one of the key factors correlated with eBusiness application adoption [eg, see 1; 44; 61; 68 to name a few].

This suggests that unless SME senior managers (or employees) already have a positive attitude toward eBusiness and know-how, eBusiness solution providers and advocates need to convince SME senior managers that the SME can obtain benefits, and they need to promote positive attitudes for potential adoption to occur. We therefore posit that a future research agenda is needed 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 characteristics of each SME. A brief overview of the examples of the types of research needed to fulfil this research agenda could include:

- investigating whether it is feasible to formulate cost-benefit analyses (eg, worksheets) which SMEs senior managers can use to assess the tangible benefits they can expect from specific eBusiness applications against their unique combination of owner, firm and environmental characteristics;
- examining whether there are expectation gaps between vendors/consultants and SMEs in terms of their respective roles regarding education about eBusiness benefits, performing market analysis work, assessing tangible benefits, etc – and, if so, how can this expectation gap be addressed;
- investigating the impact of intervention strategies (including education, consultancy, skills/advice resources, etc) employed by higher education institutions, government, industry associations, accountants, etc aiming to convince SMEs of eBusiness benefits;
- studying the impact of social and business networks through which SMEs can gain knowledge about eBusiness applications, the benefits, applicability to their firm, etc;
- developing an understanding of the knowledge sources which SMEs trust (eg, employees, family, external parties) when considering eBusiness benefits and appropriateness for their firm; and

- evaluating the effectiveness of different educational programmes and approaches aimed at helping SMEs to determine whether particular eBusiness applications can help them achieve benefits and can match their unique characteristics.

5. Conclusion

This paper has presented a preliminary, indicative meta-analysis of SME-eBusiness research which addressed problems with previous adoption-factor type meta-analyses by analysing current (post-2000) journal articles from a range of journals in order to identify trends emerging in the areas of eBusiness applications and countries studied, research approaches used and primary research objectives focused upon. The paper highlighted a range of future research opportunities based on these major trends identified, including the need for research which considers the heterogenous nature of eBusiness applications and SMEs, the supply-side of eBusiness diffusion, the temporal effects related to SME eBusiness use with longitudinal studies, and the adoption and use of eBusiness in countries in addition to the current focus on the UK and USA. Finally, the paper outlined a proposed research agenda which will have important theoretical and practical implications, because we anticipate that the research directions suggested will enable the practitioner and research communities to take a more active role in promoting SME adoption of eBusiness, when specific eBusiness applications are matched to the unique characteristics of SMEs.

6. References

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