Emerging trends in sustainability research: a look back as we begin to look forward

Arash Kordestani

Business Administration and Industrial Engineering,
Luleå University of Technology,
971 87 Luleå, Sweden
Email: arash.kordestani@ltu.se

Kaveh Peighambari*

School of Business and Economics,
Linnaeus University,
351 95 Växjö, Sweden
Email: kaveh.peighambari@lnu.se
*Corresponding author

Tim Foster

Business Administration and Industrial Engineering,
Luleå University of Technology,
971 87 Luleå, Sweden
Email: tim.foster@ltu.se

Abstract: This research is a content analysis of 1,502 peer-reviewed articles on sustainability. The aim is to investigate emerging themes and trends in this area of research and move towards recommendations for researchers to consider when developing their work in sustainability research. By exploring and tracking sustainability literature in the business and management disciplines over a 20-year period, patterns emerge that could provide a better understanding of the trends within authorship, research topic, and the themes and concepts being studied. One interesting contribution of this study is introducing the concept of the '4Ps of sustainability research', which emerges by reviewing this area over time. The results suggest that the evolution of sustainability research can be summarised in organisations and firms moving from principles and policy towards practice and performance during over 20 years of sustainability efforts. This paper also discusses the creation of sustainability value and evolution of businesses to sustainability knowledge centres. It adds to the related literature, by proposing a new way of categorising sustainability research over time, and introducing a framework for theory building in this area of research.

Keywords: sustainability; content analysis; literature review; Leximancer; historical research; trends.

Reference to this paper should be made as follows: Kordestani, A., Peighambari, K. and Foster, T. (2015) 'Emerging trends in sustainability research: a look back as we begin to look forward', *Int. J. Environment and Sustainable Development*, Vol. 14, No. 2, pp.154–169.

Biographical notes: Arash Kordestani is a lecturer and researcher at Industrial Environmental Management Group at Lulea University of Technology in Sweden. His research interests involve trans-disciplinary research and his primary research focus is on sustainable supply management, and understanding buying behaviour. His current area of research includes consumer behaviour and purchase intention for organic and locally produced food as well as supplier diversity.

Kaveh Peighambari is an entrepreneur and an adjunct faculty at Linnaeus University in Sweden. Backed by over ten years of management experience including corporate-level marketing and product development, his research interests include areas such as sustainability, supply chain management, and industrial marketing. His work has appeared in publications such as *Advances in Management*, *American Marketing Association* (*AMA*) and Academy of Marketing Science conference proceedings.

Tim Foster is an Assistant Professor in Industrial Marketing at Lulea University of Technology in Sweden. He did his undergraduate work at Michigan State University (advertising degree). His graduate and doctoral work was done in Sweden. His teaching focus today includes courses in international business, international marketing, and personal branding. His research covers a wide range of areas, with a primary focus on branding and marketing communication issues.

1 Introduction

Sustainability increasingly lies at the intersection of economic, environmental, and social issues (Elkington, 1998). Accordingly, sustainability management has been defined as, "the formulation, implementation, and evaluation of both environmental and socioeconomic sustainability-related decisions and actions" [Starik and Kanashiro, (2013), p.12]. More specifically, Golicic and Smith (2013) explain that sustainability has become an important consideration for businesses and their supply chains, as stakeholders are becoming more concerned about society, the natural environment and the overall state of the economy.

Wiersum (1995) explains that while sustainability as a practice can go back up to 200 years, it is only recently that it has received general recognition as a research topic. Moreover, due to the increasing demand for sustainable development across institutions, governments, the business world, civil society, and individuals (Pogutz, 2008), a growing number of studies using different frameworks and theories have been conducted in both academia and industry.

According to Montiel (2008), corporate sustainability did not reach any level of status as a research topic until the 1990s, with the size and scope of academic research on sustainability in various business disciplines skyrocketing and expanding during the early 2000. This expansion reflects a new era of high interest in environmental and ethical issues linked to the development taking place in business organisations in response to regulations, stakeholder pressure, and consumer awareness now in the early 21st century. Nevertheless, research on sustainability in business has focused primarily on the sustainability triumvirate of economic prosperity, environmental integrity, and social

equity from firms' and consumers' perspectives, and little theoretical attention has been given to reviewing sustainability research and its content over time in this field.

Van der Merwe et al. (2007, p.196) argue that an important question worthy of future research in any discipline is, "What do declines in the use of some theories and a rise in the use of others mean for a discipline's evolution?". This is of even greater importance since there exists high value in looking back and taking lessons from history (Wiersum, 1995), specifically in conducting historical research as Thomas (1999) refers to: "Understanding the historical, political, social, and material context in which earlier documents were created also helps us be more aware of the web of influences and constraints that affect business communication today and thus helps us to be better able to assess, and if need be, work to change them" [Locker et al., (1996), p.123]. Jones and Monieson (1990) infer that, as the quantity and quality of historical research emerges, a review of the research done 'to date' is useful. One such article that provided an historical overview of sustainability research is Bettencourt and Kaur (2011), who provide a systematic review of trends in sustainability research. Part of their findings showed that sustainability is a widespread science in both developing and developed countries.

Accordingly, in order to take a more comprehensive look at previous sustainability research, this study aims to provide a sense of how the area has evolved over time, focusing on business and management studies. The focus of this study is on investigating sustainability trends across subjects and authorship, explaining that sustainability has become a science which includes a young and fast-growing unified scientific practice.

However, as Kaufmann and Cleveland (1995) explain, sustainability is an interdisciplinary concept and requires an interdisciplinary approach. And it is with this research challenge in mind that the current study will begin to take a closer look at the evolution of sustainability research within the business and management disciplines. Moreover, few studies have been conducted from different perspectives within sustainability research, including providing taxonomies (Croom et al., 2000) or developing a conceptual framework (Carter and Rogers, 2008; Seuring and Müller, 2008). Former studies have also been hindered by subjectivity of interpretations (Plummer, 2006; Wilmshurst and Frost, 2000; Yongvanich and Guthrie, 2005), as well as focused on a single perspective (O'Dwyer et al., 2011).

These issues are important because they offer more accurate insights into the study of sustainability. In fact, according to Quental et al. (2009), a shift has emerged since early 2000 from an emphasis on pollution prevention and preserving natural resources to a more balanced position of sustainability which puts human and social sustainability at the centre. This is supported by Carter and Rogers (2008) who discuss how more research is becoming focused on the integration of the economic, environmental and social criteria of sustainability. However, trends within sustainability are often complex, contradictory, and most of the time poorly understood (Kates and Parris, 2003; Quental et al., 2009). Of course, more research on these trends is needed. As Gold et al. (2010) state, there is a need for further research on the interrelations between these dimensions of sustainability. The current study aims to cover this aspect of sustainability literature.

More specifically, the purpose of this study is to provide a better understanding of the research trends within sustainability and move towards recommendations for researchers to consider when developing their work in sustainability research today.

2 Methodology

This study is a systematic review of published, peer-reviewed articles on sustainability which appeared in business and management disciplines over the first two decades of modern, sustainability research, using a fairly new content analysis tool for research. Content analysis has been used for many years as a descriptive tool to identify various aspects of a specific journal, a trend in a body of literature, or a particular discipline. It is a research technique for exploration and interpretation of the text (Krippendorff, 2004). There are few content analysis studies on sustainability (Carter and Rogers, 2008; Seuring and Müller, 2008).

A systematic review of articles was followed in order to prepare data for content analysis. The terms sustainability and sustainable were searched in the Emerald, Informaworld, Sage, and Scopus databases. The boundary from 1991 to 2010 resulted in 3,209 articles. The accuracy of the dataset was improved by only considering the articles published in journals that were included in the latest Association of Business Schools (ABS) ranking, called the fourth version of the academic journal quality guide edited by Harvey et al. (2010).

The ABS list only contains business and management journals (Harvey et al., 2010). Truncating the journals within the ABS list resulted in 1,502 articles, and their subject category according to the journal in which they were published. Each article's citation information, including the abstract was exported from its database to an Endnote library file. This library was then exported to Microsoft Excel for content analysis. Content analysis for this study was done in two phases: first, a data analysis in a spreadsheet was conducted in order to achieve a better insight of the articles' citation information. A content analysis was then implemented, using a fairly new analysis tool for researchers, Leximancer, in order to explore the possible trends within sustainability research within the business/marketing discipline. The focus being on what is considered the first two decades of modern, sustainability research (i.e., 1991–2010).

For each article, the author(s) name, publication year, article title, journal name, subject, and abstract were imported to a spreadsheet. The following information was then obtained from each dataset for the two decades:

a authorship pattern

b subject variation.

Results are depicted with bar charts in the results section of this study.

Leximancer as an analytical tool was used for interpreting texts. This computer analysis offers a systematic, quantitatively derived framework in which qualitative interpretation analysis is more effectively facilitated (Smith and Humphreys, 2006). It can find and count the main concepts within a text. Themes are clusters of related concepts grouped together in a circle (Leximancer Manual, 2014). Leximancer generates a concept map to illustrate the information in terms of concepts and themes. In each map, concepts are presented as dots whose size shows their frequency; the brightness and connectivity of themes show their importance. In this study, themes are ranked and numbered based on their importance. In addition, the colours of dots, and circles of themes, show their relevance. Warm colours represent greater relevance while cold colours indicate less. Leximancer has been used in research on advertising (Bal et al., 2010; Campbell et al., 2011), international business (Liesch et al., 2011), organisational

learning (Benn et al., 2013) and tourism (Kattiyapornpong and Nel, 2009). This software has not been used to transform rich texts to measureable data, but to instead give an overall picture of the themes.

Abstracts of articles in each decade were saved in comma-separated format (CSV) to be analysed with Leximancer. During the analysis of decades, the first and second decades were loaded and tagged to visualise the trends in a better way (Cretchley et al., 2010). Leximancer interprets the text and it only considers the words which are semantically related (Campbell et al., 2011). However, in this study, words that were irrelevant to the subject of sustainability are removed from the concept list; similar words and singular/plural forms were then merged.

Since only peer-reviewed articles were selected (Perez and Sanchez, 2009) and journals were also checked and refined with the ABS list, it is assumed that the reliability of the analysis is increased. All steps of content analysis with Leximancer were cross-checked with two authors to reduce the possibility of any bias, and inconsistencies were resolved by the senior author (Williams and Plouffe, 2007). The results of Excel analysis and Leximancer were compared. Additionally, Smith and Humphreys (2006) checked different types of validity of findings of Leximancer, stating that it is a highly consistent software tool in the way it classifies text and identifies the relationships between concepts, i.e. the same result is produced no matter how many times a dataset is coded and recoded.

3 Results

The findings of the content analysis reveal three primary trends related to research in sustainability over the last 20 years: Trends in authorship, trends in research subject and trends in the evolution of themes and concepts within sustainability in the business and management disciplines. Furthermore, these trends were found to reveal patterns within two distinct decades: Trends in the 1990s (1991–2000), when modern sustainability research was born, compared to trends in the early 2000s (i.e., 2001–2010), the decade that sustainability research began to mature. These trends will be presented and discussed in the next section.

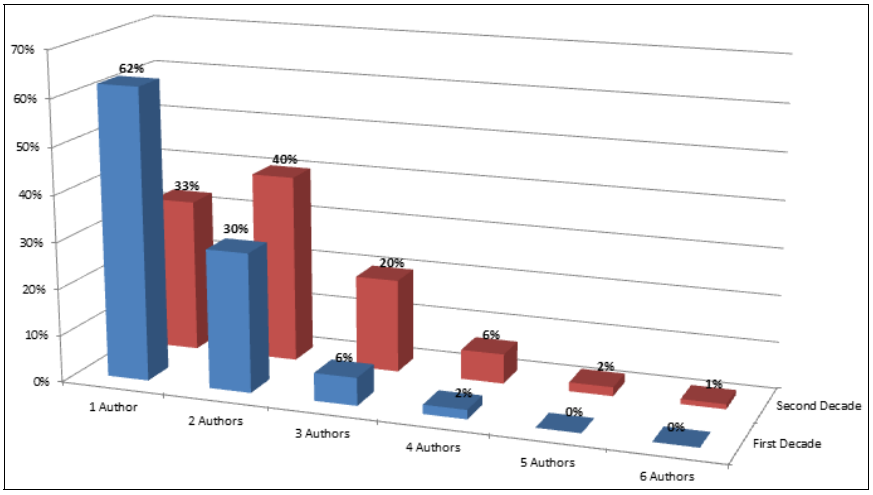
3.1 Trends in authorship

McDowell and Melvin (1983) suggest that the increasing specialisations of professions, along with changes in institutional incentives for publication, are likely to be major factors explaining the trend toward co-authorship. Since the number of publications in the second decade (1,401 out of the total 1,502 articles reviewed) is much higher than the first decade (101 out of 1,502), the percentages within each decade are taken into account. A three-dimensional bar chart is used to present combinations of the dimensions clearly for evaluation (see Figure 1).

While 62% of papers between 1991 and 2000 are single-authored, the cumulative percentage of co-authored papers is 38%. This has been changed radically during the second decade, when 33% of papers are single-authored, and 69% of papers are co-authored. Figure 1 depicts the trend toward co-authorship within the two decades.

Could this trend from single to multiple authors signal a trend towards sustainability research reaching across a multidisciplinary divide?

Figure 1 Authorship trends (1991–2000 vs. 2001–2010) (see online version for colours)



3.2 Trends in research subject

The Association of Business Schools' Academic Journal Quality Guide offers information on the range, subject matter and quality of journals in which business and management academics might publish their research (Harvey et al., 2010). It categorises all journals in business and management in terms of 22 subjects. Figures 2 and 3 give a more detailed, comprehensive comparison of all subjects covered over these two decades.

Figure 2 Trends in research subjects (1991–2000) (see online version for colours)

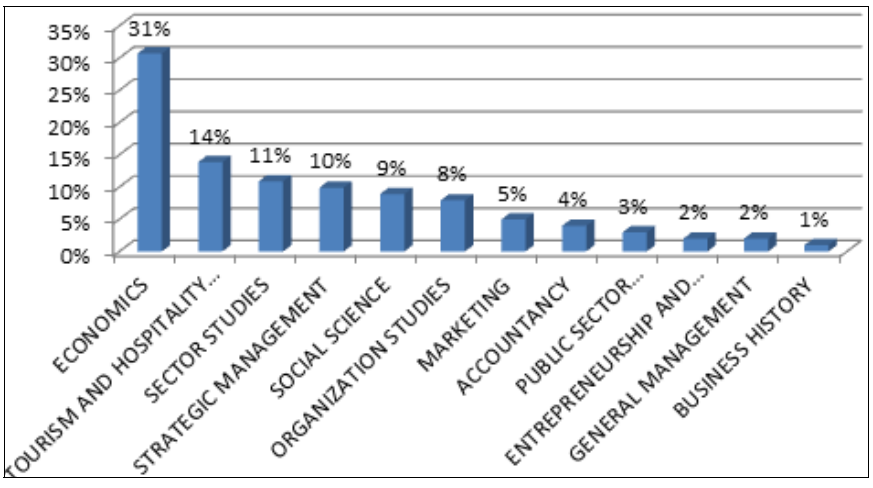
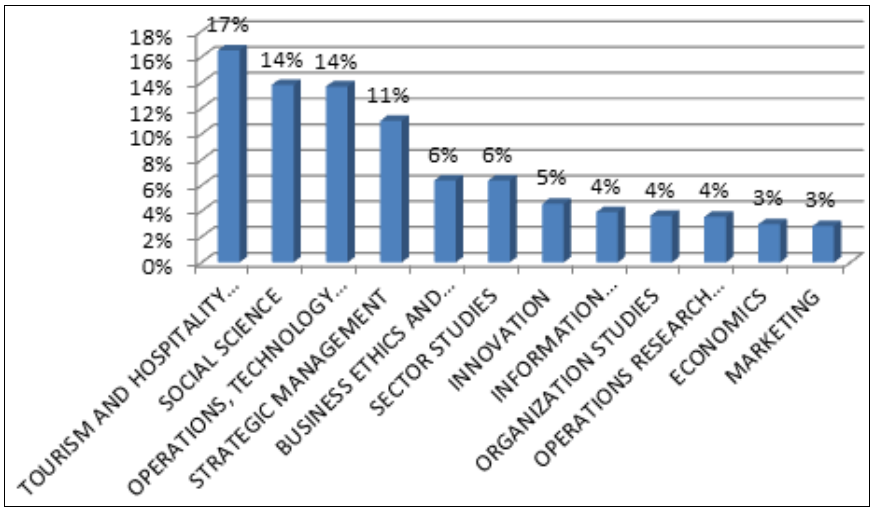


Figure 3 Trends in research subjects (2001–2010) (see online version for colours)



Using the same categorisation, the results revealed that from 1991 to 2000, 101 papers on sustainability were published in business and management journals, of which 31% were on economics, 14% on tourism and hospitality management, 11% on sector studies, and 10% on strategic management. This significantly changed during the second decade, when papers on economics comprised only 3% of the 1,401 published papers. From 2000 to 2010, other subjects like operations, as well as technology, management, and social science seem to grow in importance. Tourism and hospitality management remains a dominant subject throughout both decades.

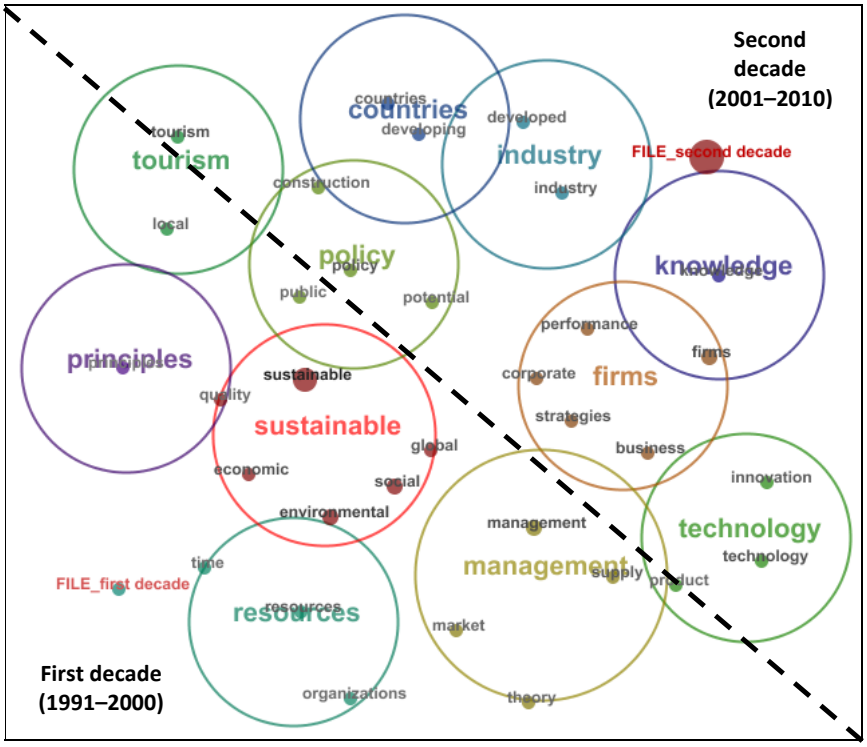
3.3 Trends in themes and concepts

To illustrate the trends in themes and concepts, Leximancer was utilised (as explained in methodology). The result is a concept map that provides an overview of the first decade, compared to the second, separated by the dashed line (see Figure 4).

As depicted in Figure 4, the prominent themes over the entire 20 years are sustainable, firms, management, policy, and technology. Sustainable as a theme has been an important cluster in both decades since it is located near the centre of the concept map. This theme contains the concepts of environmental, social, and economic, all of which are basic elements of sustainability (Elkington, 1998).

The second prominent theme is firms. It is closer to the second decade tag, and it asserts that in the second decade more articles were published on issues related to firms. In this theme, concepts of performance and strategies have bigger dots and are consequently of greater importance. This shows that researchers focused more on performance and on strategic issues of sustainability within corporate operations.

Figure 4 Themes and concepts (1991–2010) (see online version for colours)



The third prominent theme is management, of which theory is a main concept. In addition, 'theory' has been used in different management sciences. A representative quotation might be useful in support of this claim:

> "We argue that adding aspects related to competence and inter-firm partnering can improve the existing theory surrounding barriers and opportunities for sustainable industrial energy management in manufacturing industries." [Möllersten and Sandberg, (2004), p.78]

The other themes are policy and principles. Policy is closer to the second decade. It is associated more with this decade, and principle is closer to published studies in the first decade. The concept of construction emerged within the policy theme which explains the increased interest of the construction industry in policy making. A representative citation is as follows:

> "This study serves as a guide for the state for policy planning and can serve as a guide to the construction industry because the government is interested in putting limitations on investments in the area to preserve the land, which would also provide guidelines for investors to follow before presenting an investment plan to the state." [Altinay and Hussain, (2005), p.272]

The technology theme and its main concept, innovation, became more important in the second decade. Tourism has been an important theme in both decades, and studies which came from this discipline paid significant attention to sustainability. This finding is consistent with results of the citation analysis. Themes of industry, countries, knowledge, are closer to the research conducted in the second decade.

Moreover, research focused more on improving knowledge of sustainability, by drawing a knowledge pathway between sustainability and knowledge, which starts from sustainable and passes through concepts of environmental, social, global, corporate, performance and firms to knowledge. In summary, of these concepts and themes that emerged in the Leximancer concept map, the following table offers an overview of the themes and concepts in a tabulated format (see Table 1).

Table 1 Emerging themes and concepts (1991–2010)

Decade/themes and concepts	*Emerging themes*	*Rank*	*Emerging concepts within themes*
Both decades (1991–2010)	Sustainable	1	Environmental, social, and economic
	Firms	2	Performance and strategies
	Management	3	Theory
	Policy	4	Construction
	Technology	5	Innovation
First decade (1991–2000)	Sustainable	1	Sustainable, policy, strategies
	Environmental	2	Principles, people
	Economic	3	Economic, world
	Resources	4	Natural resources
	Management	5	Construction
	Waste	6	Operations
	Ecological	7	Ecological
Second decade (2001–2010)	Sustainable	1	Environmental, economic, and social
	Management	2	Firms, supply, strategies, global, and resources
	Business	3	Performance
	knowledge	4	Knowledge
	Technology	5	Innovation
	Policy	6	Policy, developing
	Industry	7	Construction industry
	Knowledge	8	Theory

But what does Table 1 mean from the Leximancer analysis of 20 years of sustainability research within the business and marketing discipline? This will be discussed in more detail in the section that follows.

4 Conclusions

From the results above, this historical analysis from the first two decades of modern sustainability research reveal that there are specific trends within authorship (see 3.1), research topics (see 3.2), as well as emerging themes and concepts (see 3.3). Each of these trends that emerged from the Leximancer analysis results will be discussed more specifically, with authorship and research subjects being discussed together, followed by emerging themes and concepts.

4.1 Trend 1: Multiple authors across multiple research subjects

Across the two decades, authorship has evolved from a more single-author approach to the use of multiple authors, implying the idea that sustainability research is becoming more and more of an interdisciplinary field. This is supported by the clear emergence of the shifting focus on the economics aspects in sustainability research in the first decade, towards a heavier emphasis on tourism and hospitality, as well as operations and technology in the second decade. The social science subject also grew stronger from the first decade (9% of total subjects) to the second decade (14% of total subjects). However, tourism and hospitality management remained a strong subject for sustainability research across both decades.

The many research disciplines that sustainability research seems to include require an ongoing effort among researchers to find ways to work together across subjects, rather than staying within their respective areas or 'niches' of research. From this, a broader and deeper understanding of sustainability research can emerge as we continue to find ways to work and cooperate across disciplines, using multiple authors. Those areas of sustainability research that seemed to have a smaller focus become a means for reaching out to such areas and find ways to cooperate in future research. The findings show that areas in this study include but are not limited to marketing, innovation, operations, and information technology.

4.2 Trend 2: Evolution of themes and concepts in sustainability research

Analysis of the Leximancer results with regard to this provided three sub-trends within themes and concepts in sustainability research: First, the development of value-based sustainability centres; next the growth of sustainability in developing markets; and finally the discovery of the 4Ps of sustainability research.

4.2.1 The development of value-based sustainability knowledge centres

When looking at the right side of Figure 4, technology is becoming the tool that firms use to gain knowledge in order to improve performance. As a way to improve overall performance, some companies outperform and became knowledge centres of sustainability. Firms want to gain knowledge in sustainability by using technology only if they can find value in sustainability. For firms, sustainability was not just a technological issue, as it was in the first decade. As firms moved into the second decade, it became more of an issue on how to develop and use their growing knowledge to improve overall performance. This increased knowledge was needed in order to allow firms to develop their sustainability strategies and boost performance. This may mean that if a firm wants to be truly sustainable, they need to develop and use knowledge to develop strategies in order to achieve the benefits from becoming more focused on sustainability efforts. Furthermore, innovative technologies have become the driver that is pushing firms towards this.

In the first decade, governments became focused on sustainability; in the second decade, firms became attentive to it. So sustainability has moved from being a public-sector, government mandate to a private-sector focus with firms using it to

develop and use sustainability knowledge in order to create value. Firms are using this knowledge to now invest in sustainability in order to gain knowledge due to finding that doing so provides value and therefore affects performance. Performance is improved by firms finding value economically, value environmentally, and value socially. Put simply, Sustainability Value (SV) = E + E + S.

4.2.2 The growth of sustainability in developing markets

In the first decade, sustainability was primarily a Western industrialised practice. However, Figure 4 shows that in the second decade, developing countries have also become interested in sustainability issues. In industrialised countries, the focus is on industry, while in developing countries, the focus is still on policy and practice. Firms in developing countries are still focused on policy, trying to catch up with what firms in the developed countries were dealing with in the first decade, but these regions are moving from policy to practice at a faster pace. So while developed countries have led the charge in moving sustainability from government policy to corporate practice, the developing countries are following the same pattern but moving at a faster pace due to the path that the developed countries have carved out for them to follow.

As firms in developed countries found value in sustainability, they started to push that value creation down the value chain, where many times the manufacturing arm of that developed countries firm's value chain is in fact in a developing country. Put another way, industries in developed countries are helping the same in developing countries to establish and advance sustainability initiatives due to what they learned in the first decade. Another way of looking at it is, the pain in the first decade for the firms in developed countries became the gain for firms in developing countries to learn from in the second decade. Having carved this 'path', developing countries are now moving away from policy at a faster rate. This is primarily due to pressure that originates in their global value chain, rather than the pressure coming from government policy in their home country. This is good for firms; it is good for government; it is good for society.

4.2.3 The 4Ps of sustainability research

The concept of corporate sustainability has become more important in the second decade of sustainability research. The number of times that the word "corporate sustainability" appeared in the articles increased significantly from the first to second decade. This means that firms showed more motivation and inclination towards sustainability as an important business issue in the second decade, while in the first decade the issue rested more with government agencies focused on waste management, preserving natural and ecological resources and protecting the environment. In other words, business found value in addressing sustainability concerns vs. government preaching about policy and holding firms more accountable, as outlined in Figure 5.

Figure 5 The evolution of sustainability research (1990–2010)

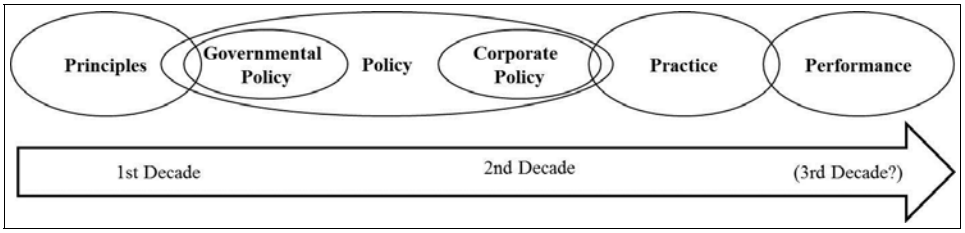


Figure 5 shows that environmental sustainability was the driving force in the first decade, a time when the principles of people and environmental groups, interested in preserving natural resources and saving the environment, pressured industry through governmental policy. New government regulations led to corporate policy being updated and used to address sustainability issues. As firms developed corporate policy, they began to evolve into knowledge centres by practicing sustainability and ultimately improving performance. This evolution of research we now refer to as the '4Ps of sustainability research'.

An example of this move from principle and policy to practice and performance is in the number of studies being conducted that focus specifically on firms and industries developing and implementing sustainability as a way of doing business. The interconnection of the countries and policy themes, as shown earlier in Figure 4, demonstrates that the pressure and motivation to apply and implement sustainability policies at the corporate level is becoming more and more important across several countries. Hence, sustainability has evolved from a mere concept to more of a way of doing business, providing a useful guide for both policy makers within firms and industry practitioners, in order to further improve sustainability efforts across the globe.

This evolution of the '4Ps of sustainability research' is focused on the idea that over a 20-year period of sustainability efforts, organisations have found a way to find value versus only following rules. This move from principles and policy towards practice and performance provides a springboard for future research looking at such value creation across multiple industries in multiple markets. Looking more specifically at how sustainability practice and performance creates value will perhaps be the next step in taking a more in-depth look at what organisations and industries are doing as we continue further into what is now the 3rd decade of sustainability research.

What 20 years of sustainability efforts (and our research on it) has shown is that there is value for organisations in developing sound sustainability strategies for their organisations and society as a whole. Organisations and government no longer need to deal with defining principles and establishing policy. From this third decade onward, companies will use and further develop their sustainability practices in order to use sustainability performance as a value-creation tool to lead us forward. This of course will require ongoing research as we as scholars follow right along with them.

5 Practical and theoretical implications

The central contribution of this paper is the 4Ps of sustainability research and the creation of sustainability value. Even though this paper provided a 4Ps framework to explain how research in business and management disciplines has evolved around sustainability, this framework can be used for theory building too. While there is no consensus among researchers about theories to explain sustainability issues, they use multiple theories to explain different aspects of sustainability (Mitchell et al., 1997; Starik and Kanashiro, 2013). Accordingly, the 4Ps of sustainability that this research proposes have the potential to be implemented as a framework for theory building in the field of sustainability from the business and management perspectives.

Our results about sustainability value can be compared with the idea of creating shared values (Porter and Kramer, 2011). Their article discusses the connection between societal and economic progress which results in creation of shared values between companies and the society within which they exist. Our research on the other hand focuses on economic, environmental and societal performance as a source of value creation. This means that businesses no longer need pressure from stakeholders to become more sustainable. Instead, the long-term cost reduction in sustainable usage of resources and energy, as well as the supply chain activities of the businesses involved, creates value for these organisations, which makes them move towards sustainable development. As an example, Wal-Mart reduction in packaging and transportation distance by 100 million miles saved the company $200 million in costs (Porter and Kramer, 2011). Even though this research proposes that businesses in the third decade of sustainability (2011–2020) do not need pressure from stakeholders to perform sustainable activities, market conditions and economic recessions may force some companies to engage with short-term practices. However, the greater opportunities seem to rely on long-term sustainability value creation.

6 Limitations and future research

This study has methodological limitations. First, we chose Emerald, Informaworld, Sage, and Scopus as our preferred databases, and then the list of journals was refined with the ABS list. We assume future researchers may consider other academic databases, and refine their list of journals with other criteria or lists. Citation information in this article only covers the agenda on authorship and subjects. We suggest that future research efforts explore more interdisciplinary journals and databases, as well as test other data collection methods, analysis levels, and statistical techniques. The use of Leximancer as an analytical tool, while helpful, is not the only available tool for such analysis. Future studies could utilise other forms of analysis in order to uncover future trends contained within the field of sustainability research.

Finally, Leximancer analysis revealed that the concepts of principle and policy in the first decade evolved into a trend towards practice and performance research during the second decade. The next phase is to see if sustainability research in the future can confirm this empirically.

This study, with its focus on sustainability from a business perspective, has shown that environmental sustainability is losing its importance while social sustainability is gaining during these first two decades of modern, sustainability research. What will

happen then in the third decade of modern sustainability research? Will sustainability research in the business disciplines follow the triple, bottom line of sustainable development? In considering Figure 3, additional topics to consider in the third decade to conduct research on business sustainability would be on subjects such as marketing, economics, operations research and organisational studies.

Will the 'third decade' of sustainability research create the 'perfect storm' where environmental, economic, and societal sustainability will all work together to continue to create value for firms, regardless of location? In other words, can we keep up with demands in consumption, the need for jobs, the emergence of more and more developed societies, all while keeping our natural resources and our planet thriving instead of being continually threatened? It will be interesting to see where this principles-policy-practice-performance evolution in the first two decades of sustainability research will take us in what is only now the middle of the third decade of modern, sustainability research.

References

Altinay, M. and Hussain, K. (2005) 'Sustainable tourism development: a case study of North Cyprus', *International Journal of Contemporary Hospitality Management*, Vol. 17, No. 3, pp.272–280.

Bal, A.S., Campbell, C., Payne, N.J. and Pitt, L. (2010) 'Political ad portraits: a visual analysis of viewer reaction to online political spoof advertisements', *Journal of Public Affairs*, Vol. 10, No. 4, pp.313–328.

Benn, S., Edwards, M. and Angus-Leppan, T. (2013) 'Organizational learning and the sustainability community of practice: the role of boundary objects', *Organization & Environment*, Vol. 26, No. 2, pp.184–202.

Bettencourt, L.M.A. and Kaur, J. (2011) 'Evolution and structure of sustainability science', *Proceedings of the National Academy of Sciences of the United States of America*, Vol. 108, No. 49, pp.19540–19545.

Campbell, C., Pitt, L.F., Parent, M. and Berthon, P.R. (2011) 'Understanding consumer conversations around ads in a Web 2.0 world', *Journal of Advertising*, Vol. 40, No. 1, pp.87–102.

Carter, C.R. and Rogers, D.S. (2008) 'A framework of sustainable supply chain management: moving toward new theory', *International Journal of Physical Distribution & Logistics Management*, Vol. 38, No. 5, pp.360–387.

Cretchley, J., Rooney, D. and Gallois, C. (2010) 'Mapping a 40-year history with Leximancer: themes and concepts in the journal of cross-cultural psychology', *Journal of Cross-Cultural Psychology*, Vol. 41, No. 3, pp.318–328.

Croom, S., Romano, P. and Giannakis, M. (2000) 'Supply chain management: an analytical framework for critical literature review', *European Journal of Purchasing & Supply Management*, Vol. 6, No. 1, pp.67–83.

Elkington, J. (1998) *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*, New Society Publishers, London.

Gold, S., Seuring, S. and Beske, P. (2010) 'The constructs of sustainable supply chain management – a content analysis based on published case studies', *Progress in Industrial Ecology, an International Journal*, Vol. 7, No. 2, pp.114–137.

Golicic, S.L. and Smith, C.D. (2013) 'A meta-analysis of environmentally sustainable supply chain management practice and firm performance', *Journal of Supply Chain Management*, Vol. 49, No. 2, pp.78–95.

Harvey, C., Morris, H., Kelly, A. and Rowlinson, M. (2010) *The Association of Business Schools: Academic Journal Quality Guide*, March [online] http://www.associationofbusinessschools.org/sites/default/files/Combined%20Journal%20Guide.pdf (accessed 25 August 2014).

Jones, D.G.B. and Monieson, D.D. (1990) 'Historical research in marketing: retrospect and prospect', *Journal of the Academy of Marketing Science*, Vol. 18, No. 4, pp.269–278.

Kates, R.W. and Parris, T.M. (2003) 'Long-term trends and a sustainability transition', *Proceeding of the National Academy of Science of the United States of America*, Vol. 100, No. 14, pp.8062–8067.

Kattiyapornpong, U. and Nel, D. (2009) 'Regional branding: perspectives of tourists in Australia', *ANZMAC 2009*, Australia.

Kaufmann, R.K. and Cleveland, C.J. (1995) 'Measuring sustainability: needed-an interdisciplinary approach to an interdisciplinary concept', *Ecological Economics*, Vol. 15, No. 2, pp.109–112.

Krippendorff, K.H. (2004) *Content Analysis: An Introduction to Its Methodology*, Sage Publications, California.

Leximancer Manual (2014) [online] LeximancerPty Ltd [online] http://www.leximancer.com (accessed 25 August 2014).

Liesch, P.W., Håkanson, L., McGaughey, S.L., Middleton, S. and Cretchley, J. (2011) 'The evolution of the international business field: a scientometric investigation of articles published in its premier journal', *Scientometrics*, Vol. 88, No. 1, pp.17–42.

Locker, K.O., Miller, S.L., Richardson, M., Tebeaux, E. and Yates, J. (1996) 'Studying the history of business communication', *Business Communication Quarterly*, Vol. 59, No. 2, pp.109–127.

McDowell, J.M. and Melvin, M. (1983) 'The determinants of co-authorship: an analysis of economics literature', *The Review of Economics and Statistics*, Vol. 65, No.1, pp.155–160.

Mitchell, R.K., Agle, B.R. and Wood, D.J. (1997) 'Toward a theory of stakeholder identification and salience: defining the principle of who and what really counts', *Academy of Management Review*, Vol. 22, No. 4, pp.853–886.

Möllersten, K. and Sandberg, P. (2004) 'Collaborative energy partnerships in relation to development of core business focus and competence – a study of Swedish pulp and paper companies and energy service companies', *Business Strategy and the Environment*, Vol. 13, No. 2, pp.78–95.

Montiel, I. (2008) 'Corporate social responsibility and corporate sustainability: separate pats, common futures', *Organization & Environment*, Vol. 21, No. 3, pp.245–269.

O'Dwyer, B., Owen, D. and Unerman, J. (2011) 'Seeking legitimacy for new assurance forms: the case of assurance on sustainability reporting', *Accounting, Organizations and Society*, Vol. 36, No.1, pp.31–52.

Perez, F. and Sanchez, L.E. (2009) 'Assessing the evolution of sustainability reporting in the mining sector', *Environmental Management*, Vol. 43, No. 6, pp.949–961.

Plummer, R. (2006) 'The evolution of sustainable development strategies in Canada: an assessment of three federal natural resource management agencies', *Sustainable Development*, Vol. 14, No. 1, pp.16–32.

Pogutz, S. (2008) 'Sustainable development, corporate sustainability, and corporate social responsibility: the missing link', in Utting, P. and Clapp, J. (Eds.): *Corporate Accountability and Sustainable Development*, pp.34–60, Oxford University Press, Oxford.

Porter, M.E. and Kramer, M.R. (2011) 'How to reinvent capitalism: and unleash a wave of innovation and growth', *Harvard Business Review*, Vol. 89, Nos. 1–2, pp.62–77.

Quental, N., Lourenço, J.M. and daSilva, F.N. (2009) 'Sustainable development policy: goals, targets and political cycles', *Sustainable Development*, Vol. 19, No. 1, pp.15–29.

Seuring, S. and Müller, M. (2008) 'From a literature review to a conceptual framework for sustainable supply chain management', *Journal of Cleaner Production*, Vol. 16, No. 15, pp.1699–1710.

Smith, A.E. and Humphreys, M.S. (2006) 'Evaluation of unsupervised semantic mapping of natural language with Leximancer concept mapping', *Behavior Research Methods*, Vol. 38, No. 2, pp.262–279.

Starik, M. and Kanashiro, P. (2013) 'Toward a theory of sustainability management: uncovering and integrating the nearly obvious', *Organization & Environment*, Vol. 26, No. 1, pp.7–30.

Thomas, J. (1999) 'Business writing in history: what caused the dictamen's demise?', *Journal of Business Communication*, Vol. 36, No.1, pp.40–54.

Van der Merwe, R., Berthon, P., Pitt, L. and Barnes, B. (2007) 'Analysing 'theory networks': identifying the pivotal theories in marketing and their characteristics', *Journal of Marketing Management*, Vol. 23, Nos. 3–4, pp.181–206.

Wiersum, K.F. (1995) '200 years of sustainability in forestry: lessons from history', *Environmental Management*, Vol. 19, No. 3, pp.321–329.

Williams, B.C. and Plouffe, C.R. (2007) 'Assessing the evolution of sales knowledge: a 20-year content analysis', *Industrial Marketing Management*, Vol. 36, No. 4, pp.408–419.

Wilmshurst, T.D. and Frost, G.R. (2000) 'Corporate environmental reporting: a test of legitimacy theory', *Accounting, Auditing, & Accountability Journal*, Vol. 13, No. 1, pp.10–26.

Yongvanich, K. and Guthrie, J. (2005) 'Extended performance reporting: an examination of the Australian mining industry', *Accounting Forum*, Vol. 29, No. 1, pp.103–119.