



# Open Research Online

---

The Open University's repository of research publications and other research outputs

## Small and medium sized enterprises and sustainability: managers' values and engagement with environmental and climate change issues

### Journal Item

#### How to cite:

Williams, Sarah and Schaefer, Anja (2013). Small and medium sized enterprises and sustainability: managers' values and engagement with environmental and climate change issues. *Business Strategy and the Environment*, 22(3) pp. 173–186.

For guidance on citations see [FAQs](#).

© 2012 John Wiley Sons, Ltd; 2012 ERP Environment

Version: Accepted Manuscript

Link(s) to article on publisher's website:

<http://dx.doi.org/doi:10.1002/bse.1740>

---

Copyright and Moral Rights for the articles on this site are retained by the individual authors and/or other copyright owners. For more information on Open Research Online's data [policy](#) on reuse of materials please consult the policies page.

---

[oro.open.ac.uk](http://oro.open.ac.uk)

**SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

**SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

***By Sarah Williams and Anja Schaefer<sup>1</sup>***

***Open University***

---

<sup>1</sup> Correspondence to: Dr Anja Schaefer, Open University Business School, The Open University, Michael Young Building, Walton Hall, Milton Keynes, MK7 6AA, Tel: +44 1908 654705, email: [a.schaefer@open.ac.uk](mailto:a.schaefer@open.ac.uk)

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

### ***Abstract***

This article reports on an in-depth, qualitative study into the pro-environmental engagement of small businesses in the East of England, with particular respect to climate change. Managers of environmentally pro-active small businesses were asked about the pro-environmental measures they had implemented in their firms, their motivations for doing so, and their understanding of climate change. The managers in this study had relatively good understanding of environmental issues in general and climate change in particular and had implemented a range of pro-environmental measures in their firms. Their understanding of climate change was a holistic one, which sat within their overall understanding of environmental and social issues. While economic arguments and external pressure played a role in their pro-environmental engagement, perhaps the most notable motivation for managers in this study to engage with environmental and climate change issues were personal values and beliefs. Environmentally engagement managers exhibited an internal locus of control. Some of these findings contrast with the views of key informants in local government and business advice organisations, who tend to emphasise the business case and cost arguments when trying to encourage small businesses towards greater environmental engagement. These findings suggest that public policy and business advice in this area should perhaps focus more strongly on personal values and a sense of being able to contribute to environmental protection in their engagement with small businesses.

# **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

## ***Introduction***

This paper explores the motivations of managers of environmental proactive small and medium sized enterprises (SMEs) to engage with environmental issues, focusing particularly on the climate change agenda. The research addresses a gap identified in the literature, namely that SME engagement with environmental issues in general and climate change in particular is under-researched. Specifically there is very little work on the environmental engagement of environmentally pro-active small firms.

Climate change is chosen as the focal environmental issue here as it is frequently argued to be the greatest environmental challenge facing the world today (e.g. Henson, 2006; DEFRA, 2009) and is a key focus of international, European and UK policy. With climate change prominent in public environmental debate and government policy (cf. UK Climate Change Act 2008) it was deemed a suitable issue around which to focus the empirical investigation on which this article is based. The existing literature on the business response to climate change (e.g. Kolk and Pinkse 2005; Enqvist et al. 2008; Linneluecke and Griffiths 2010) seems to be largely normative rather than empirical in nature and tends to focus on larger firms. Similarly government policies on climate change often focus predominantly on larger firms (Bradford and Fraser, 2008; Revell and Blackburn, 2007), with less emphasis on the roles that SMEs can play (CCC, 2008). Yet, as SMEs constitute 99% of UK businesses, provide 43% of private employment (BERR, 2007) and may account for 20% of total UK carbon emissions (AXA, 2008) understanding their environmental impact and engagement, both generally and with respect to climate change, seems highly important (Gadenne et al., 2009; Revell and Blackburn, 2007; Purvis et al., 2000).

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

There has long been a scarcity of research into how SMEs engage with environmental and social issues in general (Carr, 2003; Spence and Rutherford, 2003). Of the still somewhat limited amount of literature addressing SME engagement with environmental sustainability issues even less has looked at environmentally pro-active firms (Revell and Blackburn, 2007). Yet, the views of managers of such firms may be important because, unlike many of their peers, they seem to have already overcome some of the traditional business barriers to greater environmental engagement and might be expected to embrace the challenges and opportunities of climate change ahead of other small (and large) businesses. Looking at the ways in which the managers of such companies understand and engage with climate change and other environmental issues may provide useful insights into how other SMEs might be encouraged to do likewise.

The purpose of this paper is thus to study what motivates managers of environmentally pro-active SMEs to engage with environmental issues in general and climate change in particular.

We look at the following research questions:

- How do managers of environmentally pro-active SMEs understand climate change?
- What are their motivations for engaging with environmental issues, particularly climate change?
- Specifically, what role do values and personal commitment play in managers' engagement with environmental issues and particularly climate change?
- How does managers' own understanding of their pro-environmental engagement compare to that of other interested stakeholders, such as local authorities and business support organisations?

### ***Literature Review***

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

SMEs differ from larger firms in terms of their engagement with social and environmental issues. They rarely have codified social or environmental policies (Spence, 2007; Hamann et al., 2009) and seem to engage in fewer explicit environmental and social behaviours than larger firms (Lawrence et al. 2006). Owner-managers often have greater freedom of decision making than managers in a large firm (Hamann et al., 2009) and their personal responsibility and motivations are important in the strategic direction of the business, which can lead to greater engagement with social and environmental issues (Hamann et al., 2009; Vives, 2006; Jenkins, 2004). On the other hand, SMEs are often highly dependent on a small number of customers and are thought to suffer from greater constraints in financial and managerial resources. Small businesses have therefore been often found to have limited ability and willingness to engage with pro-environmental issues (Hamann et al., 2009; Spence, 2007; Biondi et al., 2000; Gerrans and Hutchinson, 2000; Hillary, 2000). Yet, it is dangerous to assume homogeneity of small firms across regions, sectors, cultures and ownership structures (Jenkins, 2004). Small business engagement with environmental and social issues varies significantly between firms and may be sensitive to firm size (Brammer et al. 2011), to sector context (Spence, 1999) and to the competitive value that can be expected from pro-environmental change (Cambra-Fierro et al., 2008). There is also some evidence that SME engagement with pro-environmental issues may be changing. Recent studies have found that a greater number of small businesses now engage at least in some environmental activities (Brammer et al. 2011; Cassells and Lewis 2011; Revell et al. 2010; Lawrence et al 2006). The literature has identified several broad types of motivators for pro-environmental engagement in business in general. These include compliance with legislation (Paulraj 2009; Kehbila et al. 2009; Lawrence and Morell, 1995; Post, 1994), stakeholder pressure from customers, local communities, environmental interest groups and others (Kehbila et al. 2009; Berry and Rondinelli, 1998; Lawrence and Morell, 1995), economic opportunities arising

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

from pro-environmental behaviour (Cordano, 1993; González-Benito and González-Benito, 2005; Melnyk et al., 2003) and ethical or ecological motivations (Kehbila et al. 2009; González-Benito and González-Benito, 2005; Melnyk et al., 2003). In an extensive qualitative study into firm motivations and their pro-environmental behaviours Bansal and Roth (2000) identified three broad types of motivations. (1) Competitiveness was discussed in terms of building ecologically related resources and capabilities and was linked to pro-environmental behaviours such as green marketing, source reduction, process intensification and new capital investment. (2) Legitimation covered regulation and external stakeholder pressure. This was talked about in terms of long-term survival of the firm and the license to operate, and was linked to behaviours aimed at avoiding the negative consequences of non-compliance. (3) Ecological responsibility was linked to a more general concern for the public good. Managers emphasised ethical aspects of pro-environmental behaviour, the importance of environmental champions and the values of individuals and the organisation, as well as top management taking responsibility.

Compliance, competitiveness and values driven ecological and social concern have also been identified as motivations for pro-social and pro-environmental behaviour in SMEs.

The competitiveness argument underpins much of the UK Government's approach to encouraging voluntary pro-environmental engagement small businesses, particularly with respect to climate change and the reduction of greenhouse gas emissions (Revell and Blackburn, 2007). However, many SME managers have been found to believe that they have no significant impacts on the environment and that improving environmental practice will cost, rather than save, them money (Revell and Blackburn, 2007; Ackroyd, 2002; Purvis et al., 2000; Hillary, 2000). Possible financial benefits from resource efficiency savings may be quite small for SMEs (Fineman, 2000) and may be more easily realised through other than

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

environmental means (Purvis et al., 2000). While financial benefits may sometimes be possible, SMEs may not always realise this or find it easy to convert environmental performance into competitive advantage (Gadenne et al., 2009; Simpson et al., 2004; Lefebvre et al., 2003).

Therefore some authors call for a more robust regulatory approach (Simpson et al., 2004; Bradford and Fraser, 2008). Compliance with regulation is seen as a means for encouraging initial pro-environmental engagement (Gadenne et al., 2009; Environment Agency 2007; Fineman, 2000). However, the case for greater regulation is not clear-cut, particularly for very small businesses (UK Environment Agency 2007; Brammer et al. 2011), not least because small businesses can feel that legislation is not really enforced and thus has little effect (Wilson et al. 2011).

This brings us to the third broad group of motivations: values and personal commitment. Values are enduring, normative beliefs about proper standards of conduct and preferred or desired results (Nystrom, 1990; Rokeach, 1979). Fritzsche and Oz (2007) found that altruistic or self-transcending values were positively related to managers' ethical decision making, whereas self-enhancing values were negatively related to ethical decision making. Unlike managers and leaders of large firms, founders of small business organisations often build firms that are in line with their personal aspirations and philosophies. They often have greater strategic and operational discretion over their business, and it is usually within their power to disseminate their own vision to permeate organisational values and culture (Hamann et al., 2009; Heugens et al., 2008; Schein, 2004; Dawson et al., 2002). Thus, personal ethics and business ethics may be more closely aligned in SMEs than in larger firms (Jenkins, 2004; Spence, 1999; Werner, 2008). For these reasons Vives (2006) argues that ethics and religious



## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

values are the most consistent reasons behind socially responsible practice among SMEs, and Sarbutts (2003) suggests that SMEs may sometimes be better placed to adopt socially responsible practices than larger corporations. These considerations have been born out to some extent in empirical studies linking values and environmental engagement (Battisti and Perry 2011; Collins et al. 2010; Cordano et al., 2009; Environment Agency, 2007). In particular, in environmentally pro-active small firms, such as those that belong to a green business network, the personal values of owner-managers seem to play a much stronger part in motivating pro-environmental behaviours than in other SMEs (Lawrence et al 2006).

On other hand, Spence and Rutherford (2003) found that while personal ethics were important it was difficult to categorise SME managers easily into value categories and their response to social issues depended also on other personal or outside factors. It is also not clear to what extent one can assume a simple feed-through from values to behaviour. This perhaps suggests that values may be best considered in the specific social, cultural and historical context in which a small business operates.

From the above we conclude that there seem to be some distinguishing features of SMEs that make their pro-environmental engagement potentially different from that of large firms but that SMEs should not be considered one homogenous group. One useful distinction between different types of SMEs may be in terms of their main motivation for being in business. One such distinction is between high growth / high profit oriented entrepreneurs – sometimes termed 'gazelles' (Birch, 1981; Birch and Medoff, 1994) - and 'normal' SME owners, who may be more interested in achieving a work-life balance while obtaining 'sufficient' profits to earn a living (Kuratko 2008). The former are often thought to be largely uninterested in ethical considerations (Hannafey, 2003; Longenecker et. al., 1988) whereas the latter may be

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

more strongly motivated by non-commercial and, at least in some cases, ethical personal interests and values (Hisrich, 1998). Where owner-managers have strong ethical and environmental convictions, small businesses – rather than being reticent and reactive in their environmental engagement – may be sustainability pioneers. We can thus distinguish a third group of small businesses: social and ecological entrepreneurs (sometimes called *ecopreneurs*). Ecopreneurs adopt environmentally responsible business practices (Schaper, 2002), create green businesses in order to radically transform the sector in which they operate (Isaak, 2002) and/or want to make a living while at the same time solving environmental problems (Bennet, 1991).

For the purposes of this paper, we therefore propose to distinguish between different types of SMEs on the basis of (a) their profit orientation: profit maximising vs. profit satisficing and (b) their environmental orientation: high vs. low. We thus distinguish 'normal' SMEs from both high profit orientated entrepreneurs, on the one hand, and ecological entrepreneurs, whose business is founded on the principal aim of providing an environmental good, on the other hand. We further distinguish between 'normal' SMEs that are reluctant to engage with environmental issues and 'environmentally pro-active, normal' SMEs, whose main business purpose is not an environmental one but who are nonetheless actively interested in reducing the environmental impact of their businesses. The potential usefulness of distinguishing environmentally pro-active, normal SMEs from other types of SMEs is to some extent born out by the research of Lawrence et al (2006) who found that New Zealandian SMEs that belonged to a sustainable business network differed in several key aspects from other SMEs, particularly in terms of the role values played in their environmental engagement.

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

Based on this literature review, there appear to be several gaps in our understanding of SME managers' engagement with environmental issues in general and climate change in particular. Firstly, there seems to be almost no research looking at managers' construction of climate change as an environmental and business issue. This applies to both larger and small firms. Secondly, there is still relatively little research on SME managers' engagement with environmental issues in general. Thirdly, very little research seems to have been conducted taking into account differences between various types of SMEs and particularly focusing on environmentally pro-active 'normal' SMEs, i.e. those with an expressed interest in reducing their firm's environmental impact but whose original business purpose is not necessarily an ecological one. The motivations and behaviours of such firms may well give valuable insights into how managers of other 'normal' SMEs might be motivated to engage more with environmental issues. Finally, the UK government favours a voluntary approach to environmental engagement in SMEs, based on a business-case argument for cost saving through environmental efficiency. However, the limited literature suggests that many SMEs may not be convinced by the business case and that personal values and commitment may indeed play a significant role. This research therefore looks specifically at motivations of SME managers to engage with climate change, focusing on all three types of motivations with special attention to values and personal commitment. It also compares managers' accounts of their motivations with the perceptions of government and business advice organisations.

### ***Methodology***

In this paper we take a social-constructionist approach to help us uncover what motivates the owner/managers of a number of environmentally pro-active 'normal' SMEs to engage with environmental issues in general and climate change in particular, and how their personal

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

values frame this engagement. This calls for the use of qualitative, interpretive methods that can capture people's own understanding of their engagement and motives.

Nine in-depth interviews were carried out with SME managers in the East of England between March and May 2009. This was a purposive sample of respondents that fulfilled the criteria of being owner-managers or directors of environmentally pro-active, 'normal' SMEs as defined above. Time and funding limitations dictated a small sample in a confined geographical area. This limits the empirical generalisability of the findings, i.e. our confidence that the views expressed are representative of environmentally pro-active, normal SMEs in general. A larger sample might also have led to increased certainty that the variety of possible values, views and responses to environmental and climate issues had been captured fully. Nonetheless, the study has led to interesting and useful findings about the possible motivations of SME managers to become environmentally pro-active, and particularly the role of values. Our findings can therefore contribute to knowledge in an area of pro-environmental business engagement that has hitherto not received as much research attention as it would seem to merit. The results from this study should be followed up by larger scale research to delve more deeply into the role of values in shaping pro-environmental motivations of SME managers.

Respondents were recruited in a number of ways, using the principal researcher's contacts through her previous work as a consultant for environmental business support organisations. All interviewees were either owner-managers or directors of their firms. The firms were in a wide range of different sectors, including various services, transport-distribution and manufacturing.

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

The interviews with business managers were supplemented with interviews with twelve key informants, recruited using the principal researcher's contacts among business support organisations and local authorities. The use of key informant interviews at an early stage gave the researcher the opportunity to refine research questions and uncover key environmental and climate change issues that might be explored further in the later stages of the research (cf. Revell and Blackburn, 2007, for a similar approach). The interviews were also used to explore the views of these local government and business support officers regarding the best approach to encourage SMEs to engage with climate change.

All nine manager respondents were recruited from firms that had shown some signs of being environmentally pro-active but who were not ecological entrepreneurs, i.e. whose avowed main business purpose was a commercial, not an environmental one. It is difficult to operationalise environmental pro-activity in a rigorous, objective fashion that fits all businesses and their contexts, and we are not aware of any reliable measure of this proposed in the literature. In classifying socially or environmentally pro-active SMEs it seems important to bear in mind that many of the institutionalised control mechanisms found in larger firms are uncommon in small firms and so are not likely to provide a useful indicator of environmental pro-activity (Spence, 1999). Thus, a flexible and intuitive approach to identifying environmentally pro-active firms was adopted. Possible respondents were identified through the main researcher's attendance at two local authority organised business events or via referral from key informants or other manager respondents. In order to cross-reference environmental pro-activity, managers were asked during the interviews to describe the pro-environmental practices their business currently engaged in. These are summarised in Table 1 and seem to confirm that these businesses can indeed be categorised as environmentally pro-active.

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

[Insert Table 1 approximately here].

The semi-structured interviews explored managers' understanding of climate change and their motivations to engage with environmental and climate change issues, with particular emphasis on the role of personal values. In addition the interviews probed into the perceived drivers and barriers to pro-environmental action. Each interview lasted approximately 60-90 minutes and was digitally recorded and fully transcribed.

Analysis followed an iterative, close reading approach, where the data was first coded using categories derived from the literature. Summaries of individual interviews were sent to the respondents in order to allow them to comment. After feedback from respondents and a comparison of the initial results with the literature, a second round of analysis followed, using new codes arising out of the data. Data was then grouped into four themes: behaviours; motivations and barriers; values and beliefs; understandings of climate change. This stage also drew on data reduction methods suggested by Miles and Huberman (1994), in particular the use of lists and cognitive mapping to identify themes and patterns. Re-coding back to original sources was followed by a replacement of formal language derived from the literature with language used by the managers themselves in the categorisation, allowing us to be truer to the flavour of the interviews. Data was then linked back to the literature and re-evaluated on the basis of external comment from both key informants and two academic colleagues.

### ***Findings***

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

We start this section with an introductory discussion of the ways in which managers in our study understood climate change. We then discuss the motivations that managers presented for their engagement with pro-environmental issues in general, and climate change in particular before looking in more depth at managers' values as a key motivation. Throughout the section, we juxtapose the views of managers of environmental pro-active small businesses with the views of key informants in local government and business support organisations.

Climate change had some 'issue salience' (cf. Bansal and Roth 2000) for our manager respondents. All nine managers said they were familiar with and interested in the climate change debate and expressed views on how climate change affected their personal lives and their businesses. They seemed to exhibit more knowledge and less confusion about the phenomenon than shown in earlier studies (Purvis et al. 2000; Crichton 2006). Respondents built their understanding on a diverse range of mostly popular sources, such as media and film, rather than information targeted at them as businesses. This greater awareness of climate change could be due to an educating effect of the greater media exposure of the subject over recent years or it could be due to the composition of our sample, i.e. managers who had shown signs of environmental pro-activity.

Our respondents all constructed climate change within a wider understanding of the environmental and social dimensions of sustainability, albeit not necessarily in a particularly technical, environmental sense. They tended to see climate change as an 'extension' of other environmental *and* social concerns, in the context of an inter-related world.

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

M2: To me everything's the same. You know, ok bits are different to other bits, but it's a global view of the environment that I've got I think...

M5: ...it is all part and parcel of the same thing because everything that we do adds to the warming up... I don't know how you can take it out, it's all inter-linked.

Several respondents made links with 'rampant consumerism', which they held responsible for driving climate change through greed, energy consumption and wastefulness. Yet the impacts would be felt greatest by those least able to respond, i.e. the poorest people, particularly in the developing world though also in the UK, and by vulnerable systems and species of the natural world.

M8: "I mean, the Western world washes its dirty linen in China and Asia, and we're all blissfully unaware. ... Somebody, somewhere is being exploited, and it's not a person, it's the earth, you know, it's both actually."

This did not mean that climate change and its impact on their business was always unequivocal in managers' minds. Respondents said they considered the environment a stakeholder in their business decision making and some suggested that the environment was at the 'forefront' of their minds. Yet, some respondents also expressed confusion over contradictory opinions on the science and anticipated impacts of climate change, particularly where sceptical arguments came from industry sources they trusted, and scepticism about the motives of popular promoters of the climate change message.



## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

M8: I still feel, I'm a floating boater on that one I think. I want to believe it, but actually I don't want to believe it, I hope it's not true. But you know, you look at the *Inconvenient Truth* [climate change documentary produced by former US vice-president Al Gore] and you think my god, you know, this is real, this is happening. Then I went to this [...] presentation, and what they didn't show you on *Inconvenient Truth*, [...] was that 20 miles to the west, there's the largest arctic shelf forming, on record... Al Gore was on a presidential ticket, [...], are these necessarily the right figure heads for telling us..?

Several of our respondents contrasted their holistic general understanding of climate change with what they described as a limited knowledge in a technical sense, related to the detail regarding what needed to be done at a practical personal and business level. Several of our respondents felt that lacking technical knowledge was important because contradictions in detail undermined their ability to make decisions.

M3: ... and actually there are some things that appear to be better for the environment but it might take more energy to produce. For example, one of the things is cotton, cotton seems to be very natural, but actually from what I understand, the chemicals that go into the water that goes into producing cotton mean that environmentally it's not actually a very good thing.

So while the SME managers in our study exhibited greater awareness and understanding of climate change issues than found in earlier studies they still expressed some difficulty in translating their awareness into practical action for themselves and their businesses. Mostly the reasons for this seemed to be that they found it difficult to weigh up the environmental

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

advantages and disadvantages of particular actions and thus to decide what was the best course of action. The following quotes illustrate this:

M3: ... I suppose part of it is that there are a lot of counter-arguments out there, and there is the issue about how much of, you know how much methane is produced by cows. And what is, in terms of climate change, what is the kind of best diet to look at. And there's the whole issue about bio fuels as well.

M1: ... sometimes the things that you do, and you think, this is a darn good idea to improve the environment, have terrible adverse consequences elsewhere. ... I mean you see these people throwing up wind turbines on their houses and that, you know, it's because they don't understand that you need a certain wind speed and you need a certain size of wind turbine to generate anything decent, and so eco for eco's sake, no thank you.

The holistic understanding of climate change displayed by managers contrasts with the views expressed by key informants in local government and business support organisations. Key informants were of the opinion that SME managers in general saw climate change as largely separate from other environmental concerns; that they had too many demands on their time to engage with this complex, long term topic; that climate change was not seen as a business issue by SME managers; and that the only way to engage them with this issue was to focus on cost savings. Therefore they promoted the energy efficiency and environmental management agenda in terms of quick financial wins for the companies. Key informants were also largely sceptical of the ability of SME managers to see how their own actions 'impacted on the bigger picture' and believed that SME managers were often sceptical of the science behind climate change. Our findings suggest that at least environmentally pro-active SME managers were both able and willing to engage with the climate change debate and saw this very much within a wider environmental and social agenda. However, managers' views that

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

they often lacked the technical knowledge to make judgements on conflicting climate change claims were to some extent echoed by key informants, several of whom thought that SME managers needed a better understanding of climate change and that a certain amount of belief was needed in order to motivate action.

### **Motivations for engaging with environmental issues**

Respondents' professed motivations to engage with environmental and climate change issues in general fell into the three categories of motivations identified in the literature: the business case / win-win (competitive motivations); external business environment, including regulation (legitimation motivations); and personal engagement / values (ecological responsibility motivations). Motivations relating to these three categories could be identified both in what encouraged managers to engage in pro-environmental practices and what discouraged them from doing so. A summary of managers' motivations is provided in Tables 2 (motivations for pro-environmental behaviour) and 3 (motivations against pro-environmental behaviour).

[Insert Table 2 approximately here.]

[Insert Table 3 approximately here.]

The above tables show that all three categories of motivations played a role in managers' perceptions of what encouraged or discouraged them from adopting pro-environmental practices. It is interesting to note that business strategy and cost factors were mentioned as often, if not more so, as a discouragement than as an encouragement. Managers talked about what they saw as contradictions in government policy and vested economic and political

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

interests, which could discourage them from taking pro-environmental action. Thus even these environmentally proactive managers felt that the business case for pro-environmental engagement was not strong. In contrast, personal values and engagement of owners, managers, staff and/or other contacts were mentioned most commonly as motivations.

Despite perceived contradictions in government policy, the need to comply with external expectations from local and national government and from customers was also perceived to be important. Industry sector seemed to play a role in the main motivations cited, particularly in terms of whether the industry was subject to specific environmental regulation. Thus, the manager of a small chemicals company cited compliance with legal and regulatory requirements as a key motivator for pro-environmental actions – although personal values were still a key motivation for him wanting to go beyond legal compliance in his business. By contrast, the manager of a small, community-based arts business stated that both a community spirit and the need for cost reductions encouraged them to engage in pro-environmental activities such as using recycled materials.

All respondents constructed their engagement with environmental and climate change issues at least partially in terms of personal values and concerns. They were able to link their views on environmental issues and climate change to personal beliefs and values, and in some cases this seemed to be their main motivation. The literature review had suggested that, for reasons to do with the characteristics of SMEs and their owner-managers, personal values could be particularly important in understanding their environmental motivations and practices. Once values emerged as a potential motivator from the interviews, the interviewer therefore probed more deeply into respondents' construction of their own values and how these interacted with their business practices. In particular, she probed into the nature and roots of respondents'

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

values and how these helped them frame their own and their businesses' responses to climate change.

All respondents demonstrated environmental concern and stressed the importance of environmental pro-activity although they did not describe themselves as 'environmentalists' and expressed some scepticism about 'new age environmentalism' and 'tree hugger types'. They were clearly saw themselves as businesspeople, not social or environmental entrepreneurs, i.e. their motivation was primarily a business one. Several of our respondents seemed to carry an image of environmental activists as somehow different from ordinary people, as illustrated by the following quote:

M8: "...I haven't got braids in my hair and smoke spliffs and go dancing over an open fire at the weekend and all that, but I'm really interested in our future, in how we're going to get there, how it can be delivered, what I can do at micro level..."

The values expressed were generally non-religious (with one exception), and several respondents explicitly stated that they had no religious affiliation or beliefs. By contrast, some managers talked about their values as being 'humanistic', apparently in the sense of extending a care for fellow humans to a care for the environment (c.f. British Humanist Society, 2010), or 'derived from science', particularly an understanding of the place of humanity in the course of evolution and the inter-relatedness of nature. In this sense they seemed to be expressing a kind of non-religious stewardship environmental ethic informed by human reason and science (c.f. EPA 2010; Callicott, 1994).

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

M1: "...so, I'm not particularly religious, but I think that perhaps it's a more humanistic sort of approach really, just to feel that we've got this beautiful planet and we should look after it and the creatures on it as well, obviously. You know, have respect".

M4: "... I value the environment I think because I know the science behind why we're here and how we're here, and without every little bit of it we're in trouble... I don't like faith but a philosophy of life, that encompasses compassion and care, just care for what's around you, you know, instead of just shitting on your planet, is extremely important to me.."

In other instances, managers linked their environmental concerns to more generally other-directed values and a sense of prudence:

M3: "... you didn't waste things, you took responsibility for your actions and how they affected those people around you and the community as well, and that has been something that has always been very important to me..."

Several of our respondents stated that an interest in and a concern for the environment was something they had experienced from an early age and that the values underpinning their environmental concern had been part of their upbringing.

M2: "I can't explain it but it's a values driven upbringing that I think would lead me naturally to want to do something that's right rather than what's obviously wrong".

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

Others spoke of life events – a kind of personal epiphany – that made them question their previously less pro-environmental orientation. The two kinds of experiences mentioned were travelling (particularly in developing countries) and divorce. This showed how potentially unrelated issues could lead to a fundamental questioning of personal values. In the latter case, there was a realisation of the futility of unnecessary consumption which resulted in a questioning of consumerism and wastefulness; in the former, there was an understanding and an abhorrence of the scale of what the respondent saw as developing country poverty driven by affluent consumption.

A sense of personal responsibility, derived from personal values, framed respondents' reaction to climate change information. They felt that the difference between themselves, who did act on the information being given, and others who also had the same information but chose not to act on it, was whether they believed they could make a difference and it was their personal responsibility to do so. In this sense, knowledge, values and an internal locus of control can be seen to interact in producing pro-environmental practices.

Again, these findings contrast with the views expressed by key informants from local government and business support organisations, who were of the opinion that SME managers found it difficult to relate climate change to their business and were not really interested in it. After stressing the need to comply with environmental legislation all key informants said they attempted to engage businesses almost solely on the basis of e cost-efficiency, win-win arguments, highlighting potential cost savings, principally from low and no cost actions, along with perceived longer term benefits of investment that would result in improved sustainability and better public relations. Only one of our key informant argued that business managers might need to believe in the existence and seriousness of climate change in order to

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

act, although even this respondents did not feel it was the responsibility of business support organisations to convince SMEs of the social and environmental aspects of climate change:

We need to simplify the message, make it scientifically based but more emotional. People either believe this or they don't. We need much greater commitment; people still believe science can engineer us out of this without any need to change behaviour. There's a difference between being aware of something and really understanding what it means to you and your kids.

This sentiment would seem to sit well with our findings that environmentally pro-active SME managers did construct climate change in environmental and social terms and were driven to a significant extent by their values and a sense of personal responsibility and internal locus of control, rather than merely economic arguments.

### ***Conclusions***

Managers of environmental pro-active SMEs in our study engaged in a number of pro-environmental activities. They were aware of and engaged with the personal and business challenge of climate change as a key environmental issue. Their views of climate change were based on a variety of information sources, many of them of a popular, rather than a scientific or business nature. At the same time, some managers expressed uncertainty about the science behind climate change and some scepticism towards non-business sources of information.

All three categories of motivations identified by Bansal and Roth (2000) and other literature were present in our study. While economic arguments and external pressures were important,



## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

the role of personal values, and the need for a fit between personal and professional values, was essential in underpinning respondents' engagement with climate change and encouraging a sense of personal responsibility. This fits suggestions in the literature but seems to run counter to much of UK government policy and the small business advice given by local government and business support organisations, which are strongly based on a win-win, business case type of argument.

Respondents generally distanced themselves from what they perceived to be the woolly side of 'environmentalism'; yet some expressed an environmental ethics in line with the idea of environmental stewardship. Respondents' personal values seemed to go hand in hand with a sense of personal responsibility and an internal locus of control (cf. Huebner and Lipsy 1981; Miller et al. 1982 for link between internal locus of control and environmentalism and management behaviour). Views of managers contrasted with the views expressed by key informants from government and business support organisations, i.e. that it is difficult to engage SMEs with environmental debates in general and climate change in particular and that SMEs would see climate change as quite separate from environmental and social concerns in general. Our findings in this sense also contrast with some of the findings of previous research (e.g. Hitchens et al., 2005; Tilley, 2000 and 1999).

Future research in this area should explore and contrast the construction of climate change by a wider range of SME managers, not just those in environmentally pro-active businesses. It would be particularly interesting to see whether at least some managers of other, 'normal' SMEs also hold some empathic, other-oriented values which, however, have not translated into an engagement with environmental issues and climate change, and to study why this might be the case. Further, a more formal study into the way in which certain values relate to

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

explicit environmental ethics in practice would be valuable. In particular, it would be interesting to link emerging ethical reasoning to knowledge and understanding of climate change issues and to specific behaviours to mitigate climate change and other environmental harm. Future research should also explore how an internal locus of control and emotions are linked to pro-environmental values and how they might frame behaviours with respect to the environment.

The findings suggest some important implications for public policy and practice. We found that managers constructed climate change in a more holistic manner and were able to make more sense of it than key informants from local government and business advice organisations suggested. A wide range of motivations and particularly personal values seemed to play an important role in their pro-environmental engagement. This suggests that those advising SMEs on environmental issues and climate change should perhaps concentrate less on the business case and cost savings but pay more attention to other motivations that lead small business managers to engage with environmental issues, particularly values driven arguments. This is an area where peer support among small businesses could be useful as managers stated they trusted arguments put forward by other businesses more than those advanced by advocacy groups or advisory organisations. Messages that align with trustworthy sources (from an SME perspective) would also be more likely to be heard. In addition, business advice should perhaps focus more on fostering an an internal locus of control to make managers feel that their actions matter with respect to the environment and to climate change.

## ***References***

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

Ackroyd J. 2002. Business excellence through resource efficiency: raising awareness and achieving waste reduction in SMEs through a local support programme. Paper presented at *Business Strategy & the Environment Conference*, Manchester, September 2002.

AXA 2008. SMEs responsible for 110 million tonnes of carbon emissions each year. Press release (01.05.2008) downloaded from:

<http://www.axa.co.uk/axa4business/files/document/Carbon%20Calculator%20Press%20Release%20SME%2001%2005%2008.pdf>, accessed on 31.3.09

Bansal P, Roth K. 2000. Why companies go green: a model of ecological responsiveness. *Academy of Management Journal* **43**: 717–36.

Battisti, M., Perry, M. 2011. Walking the talk? Environmental responsibility from the perspective of small-business owners. *Corporate Social Responsibility and Environmental Management*. **18** (3): 172-185

Bennet SJ. 1991. *Ecopreneuring*. Wiley: New York

BERR (Department for Business, Enterprise and Regulatory Reform) 2007. *Enterprise and Small Business statistics*. BERR Website:

<http://www.berr.gov.uk/whatwedo/enterprise/enterprisesmes/index.html>.

Berry MA, Rondinelli DA. 1998. Proactive corporate environmental management: a new industrial revolution. *Academy of Management Executive* **12**(2): 1-13

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

Biondi V, Frey M, Iraldo F. 2000, Environmental management systems and SMEs. *Greener Management International*. **Spring**: 55–79.

Birch DL. 1981. Who creates jobs? *The Public Interest* **65**: 3-14.

Birch DL, Medoff J. 1994. Gazelles. in *Labor Markets, Employment Policy and Job Creation*. Solmon LC, Levenson AR (eds). Westview Press: Boulder CL: 159-168.

Bradford J, Fraser DG. 2008. Local authorities, climate change and small and medium enterprises: identifying effective policy instruments to reduce energy use and carbon emissions. *Corporate Social Responsibility and Environmental Management*. **15**: 156-172

Brammer, S., Hoejmose, S. and Marchant, K. (2011), 'Environmental Management in SMEs in the UK: Practices, Pressures and Perceived Benefits', *Business Strategy and the Environment*, published online in Wiley Online Library (wileyonlinelibrary.com) DOI: 10.1002/bse.717

British Humanist Society 2010. Humanists working for a better world.

<http://www.humanism.org.uk/>, accessed 9 July 2010

Buchholz RA. 1991. Corporate responsibility and the good society: from economics to ecology: factors which influence corporate policy decisions. *Business Horizons*. **34**(4): 1-19

Callicott JB. 1994. *Earth's Insights: A Multicultural Survey of Ecological Ethics from the Mediterranean Basin to the Australian Outback*. University of California Press: Berkeley CA

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

Cambra-Fierro J, Hart S, Polo-Redondo Y. 2008. Environmental respect: ethics or simply business? A study in the Small and Medium Enterprise (SME) context. *Journal of Business Ethics*. **82**: 645-656.

Carr P. 2003. Revisiting the protestant ethic and the spirit of capitalism: understanding the relationship between ethics and enterprise. *Journal of Business Ethics*. **47**: 7–16.

Cassells, S, Lewis, K. 2011. SMEs and environmental responsibility: do actions reflect attitudes?. *Corporate Social Responsibility and Environmental Management*. **18** (3): 186-199

Collins E, Dickie C, Weber P. 2010. A New Zealand and Australian overview of ethics and sustainability in SMEs. *African Journal of Business Ethics*. **4**(2): 48–55.

Committee on Climate Change (CCC) 2008. Building a low-carbon economy - the UK's contribution to tackling climate change: the first report of the committee on climate change. The Stationary Office: London. <http://hmccc.s3.amazonaws.com/pdf/TSO-ClimateChange.pdf>, accessed 31 March 2009

Cordano M. 1993. Making the natural connection: justifying investment in environmental innovation. *Proceedings of the International Association for Business and Society*: 530—537

Cordano M, Marshall RS, Silverman M. 2009. How do small and medium enterprises go 'green'? A study of environmental management programs in the US wine industry. *Journal of Business Ethics*. published online 1 August 2009

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

Crichton D. 2006. Climate change and its effects on SMEs in the UK.

[http://www.axa.co.uk/aboutus/corporate\\_publications/climatechange\\_docs/AXA%20Climate%20Change.pdf](http://www.axa.co.uk/aboutus/corporate_publications/climatechange_docs/AXA%20Climate%20Change.pdf). accessed on 31.3.09

Dawson S, Breen J, Satyen L. 2002. The ethical outlook of micro-business operators. *Journal of Small Business Management*. **40** (4): 302-313

Department for Environment Farming and Rural Affairs (DEFRA) 2009. Climate change act 2008 – key provisions/milestones.

<http://www.defra.gov.uk/Environment/climatechange/uk/legislation/provisions.htm>., accessed 31 March 2009

Environment Agency 2007. SME-environment survey: UK summary.

<http://www.environment-agency.gov.uk/netregs/links/98674.aspx>, accessed 21 April 2009

Environmental Protection Agency 2010. Environmental stewardship.

<http://www.epa.gov/stewardship/>, accessed 9 July 2010

Fineman S. 2000. Introduction. In *The Business of Greening*. Fineman S (ed.). Routledge: London

Fritzsche DJ, Oz E. 2007. Personal values' influence on the ethical dimension of decision making. *Journal of Business Ethics*. **75**: 335-343

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

Gadenne DL, Kennedy J, McKeiver D. 2008. An empirical study of environmental awareness and practice in SMEs. *Journal of Business Ethics*. **84**: 45-63

Gerrans PA, Hutchinson WE. 2000. Sustainable development and small and medium-sized enterprises: a long way to go. In *Small and Medium-Sized Enterprises and the Environment: Business Imperatives*. Hillary R (ed.). Greenleaf Publishing: Sheffield. 75–81

González-Benito J, González-Benito O. 2005. An analysis of the relationship between environmental motivations and ISO14001 certification. *British Journal of Management*, **16**: 133–48.

Hamann EM, Habisch A, Pechlaner H. 2009. Values that create value: socially responsible business practice in SMEs: empirical evidence from German companies. *Business Ethics: A European Review*. **18**(1): 37-51

Hannafey FT. 2003. Entrepreneurship and ethics: a literature review. *Journal of Business Ethics*. **46**: 99-110

Henson R. 2006 *The Rough Guide to Climate Change*. Penguin Group: London

Heugens P, Kaptein M, van Oosterhout J. 2008. Contracts to communities: a processual model of organizational virtue. *Journal of Management Studies*. **45**(1): 100–121.

Hillary R (ed.). 2000. *Small and Medium-Sized Enterprises and the Environment: Business Imperatives*. Greenleaf: Sheffield

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

Hisrich RD. 1998. Ethics of business managers vs. entrepreneurs. Working Paper Series 98-03. Rise Business Research Institute for Small and Emerging Business: Washington, DC

Hitchens D, Thankappan S, Trainor M, Clausen J, De Marchi B. 2005. Environmental performance, competitiveness and management of small businesses in Europe. *Tijdschrift voor Economische en Sociale Geografie*. **96**(5): 541-557.

Huebner RB, Lipsi MW. 1981. The relationship of three measures of locus of control to environment activism. *Basic & Applied Social Psychology*. **2**(1): 45-58

Isaak R. 2002. The making of the ecopreneur. *Greener Management International*. **38**: 81-91

Jenkins H. 2004. A critique of conventional CSR theory: an SME perspective. *Journal of General Management*. **29**(4): 37-57

Kehbila, AG, Ertel, J, Brent, AC. 2009. Strategic corporate environmental management within the South African automotive industry: motivations, benefits, hurdles. *Corporate Social Responsibility and Environmental Management*. **16**: 310-323

Kolk A, Pinkse J. 2005. Business responses to climate change: identifying emergent strategies. *California Management Review*. **47** (3): 6-20

Kuratko DF. 2008. *Entrepreneurship: Theory, Process, Practice*, 8<sup>th</sup> edition. South-Western Cengage Learning: Mason, OH



## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

Lawrence AT, Morell D. 1995. Leading-edge environmental management: motivation, opportunity, resources, and processes. *Research in corporate social performance and policy*. in Collins D, Starik M (eds.). JAI Press: Greenwich, CT. 99-126

Lawrence SR, Collins E, Pavlovich K, Arunachalam M. 2006. Sustainability practices of SMEs: the case of NZ. *Business Strategy and the Environment*. **15**: 242-257

Lefebvre E, Lefebvre LA, Talbot S. 2003. Determinants and impacts of environmental performance in SMEs. *R&D Management*. **33**(3): 263-283

Linneluecke M, Griffiths A. 2010. Beyond adaptation: resilience for business in light of climate change and weather extremes. *Business and Society*. **49** (3): 477-511

Longenecker JG, McKinney JA, Moore CW. 1988. Egoism and independence: entrepreneurial ethics. *Organizational Dynamics*. **16**: 64-72.

Melnyk SA, Sroufe RP, Calantone R. 2003. A model of site-specific antecedents of ISO14001 certification. *Production and Operations Management*. **12**: 369-85.

Miles MB, Huberman AM. 1994. *Qualitative Data Analysis: An Expanded Sourcebook*. Sage: London

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

Miller D, Kets de Vries M, Toulouse JM. 1982. Top executive locus of control and its relationship to strategy making, structure and environment. *Academy of Management Journal*. **25**(2): 237-253

Nystrom PC. 1990. Differences in moral values between corporations. *Journal of Business Ethics*. **9**: 971–979.

Paulraj, A. 2009. Environmental motivations: a classification scheme and its impact on environmental strategies and practices. *Business Strategy and the Environment*. **18**: 453-468

Purvis M, Drake F, Hunt J, Millard D. 2000. The manager, the business and the big wide world. In *The Business of Greening*. Fineman S (ed.). Routledge: London. 13-34

Revell A, Blackburn R. 2007. The business case for sustainability? An examination of small firms in the UK's construction and restaurant sectors. *Business Strategy and the Environment*. **16**: 404-420

Revell, A., Stokes, D. and Chen, H. (2010), 'Small businesses and the environment: turning over a new leaf?', *Business Strategy and the Environment*, 19 (5): 273-288

Rokeach MM. 1979. From individual to institutional values: with special reference to the values of science. In *Understanding Human Values: Individual and Societal*. Rokeach MM (ed.). The Free Press: New York

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

Sarbutts N. 2003. Can SMEs do CSR? A practitioner's view of the ways small and medium sized enterprises are able to manage reputation through corporate social responsibility.

*Journal of Communication Management.* **7**(4): 340–347.

Schaper M. 2002. The essence of ecopreneurship. *Greener Management International.* **38**: 26–30.

Schein E. 2004. *Organizational Culture and Leadership*. Jossey-Bass: San Francisco, CA

Simpson M, Taylor N, Barker K. 2004. Environmental responsibility in SMEs: does it deliver competitive advantage? *Business Strategy and the Environment.* **13**: 156-171

Spence LJ. 1999. Does size matter? The state of the art in small business ethics. *Business Ethics: A European Review.* **8**(3): 163–174.

Spence LJ. 2007. CSR and small business in a European policy context: the five 'C's of CSR and small business research agenda 2007. *Business and Society Review.* **112**(4): 533–552

Spence LJ, Rutherford R. 2003. Small business and empirical perspectives in business ethics: editorial. *Journal of Business Ethics.* **47**: 1–5.

Tilley F. 1999. The gap between the environmental attitudes and the environmental behaviour of small firms. *Business Strategy and the Environment.* **8**: 238-248.

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

Tilley F. 2000. Small firm environmental ethics: how deep do they go? *Business Ethics: A European Review*. **9**(1): 31-41.

Vives A. 2006. Social and environmental responsibility in small and medium enterprises in Latin America. *The Journal of Corporate Citizenship*. **21**: 39–50.

Werner A. 2008. The influence of Christian identity on SME owner–managers' conceptualisations of business practice. *Journal of Business Ethics*. **82**(2): 449-462

Wilson, C.D.H., Williams, I.D. and Kemp, S. (2011). An Evaluation of the Impact and Effectiveness of Environmental Legislation in Small and MediumSized Enterprises: Experiences from the UK, *Business Strategy and the Environment*, published online in Wiley Online Library (wileyonlinelibrary.com) DOI: 10.1002/bse.720

### **Table 1: Pro-environmental practices carried out by sample firms**

- |  |
|--|
| <ol style="list-style-type: none"><li><b>1. Complying with environmental legislation and regulations</b> (all)</li><br/><li><b>2. Complying with demands of supply chain</b> (M1, M2, M3, M4, M5, M6, M8)<ol style="list-style-type: none"><li>a. Environmental policy (M1, M2, M4, M7, M8)</li><li>b. Accreditation to formal Environmental standard (M1, M2)</li></ol></li><br/><li><b>3. Aspiring to do what larger companies do but in 'microcosm' way</b></li></ol> |
|--|

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

- a. Keeping environmental considerations forefront in decision making (all)
- b. Embedding sustainability into business culture (M2, M3, M4, M5, M6, M8)
- c. Include environmental best option as default to customers (M2, M3, M5, M6, M7, M8, M9)
- d. Carbon reduction (all)
- e. Carbon offsetting (M7)
- f. Action plan (M3, M4, M5)
- g. Measure and monitor against targets (M1, M2, M, M4)
- h. Developing on site wildlife gardens (M4, M6)
- i. Providing pro bono / voluntary services within local community (M4, M5, M8)
- j. Educating customers in what doing e.g. e-newsletter, website (all)
- k. Awareness of influence on (& responsibilities to) supply chain (M1, M2, M5, M6, M8)
- l. Ensuring consistency between message / mission and actions (all)
- m. Taking responsibility for products used e.g. tracing back supplier claims (M5, M6, M8, M9)
- n. Working with other local companies with similar beliefs (M5, M6, M8)
- o. Working with investors with similar beliefs (M8)
- p. Keeping the business of local customers (M4, M5, M6, M7, M9)
- q. Sourcing locally, as close to home as possible (to reduce food miles / energy / support local economy) (M5, M6)
- r. Buy and use eco friendly products (M3, M5, M6)
- s. Look for outside learning / support (all)

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

### **4. Engaging staff**

- a. Environmental sub committee including senior management (M1, M2, M3, M4, M5, M6)
- b. Training (M1, M2, M8)
- c. awareness raising (M1, M2, M3, M4, M5, M6, M8)
- d. Use of staff ideas (M2, M3, M4)

### **5. Reducing reliance on bought in energy**

- a. Switch things off (all)
- b. Improve natural light (M1, M3)
- c. Insulation (preferably using recycled materials) (M1, M2, M3, M4, M5)
- d. Switch to low energy lighting (all)
- e. Window film insulation / secondary glazing (M1, M2, M3, M5, M6)
- f. Make better (more efficient) use of equipment (all)
- g. clean roof panels to increase natural light & reduce energy use (M1)
- h. Use hand driers that automatically switch off and / or use cold air (M1)
- i. Use of energy management systems to improve energy efficiency (M5, M6)
- j. (aspire to) Wind turbine / solar panels / solar heating (M1, M2)
- k. (aspire to) Combined heat & power unit (M3)

### **6. Reviewing energy contract to increase green energy (M3)**

### **7. Reducing water use**

- a. Rain water harvesting (M5)
- b. Water taps that automatically switch off (M1, M2, M3)

## **SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

c. Use less water (all)

d. Provide filtered watered to reduce need for bottled (M5, M6)

### **8. Reducing waste**

a. Recycling, plastic cups, paper (all)

b. Re use of materials / items between organisations (M3, M5)

c. Encourage suppliers to reduce packaging (M1, M2, M3, M5, M6, M9)

d. Reduce own packaging / use of compostable materials (all)

e. Composting (on site or take materials home) (M3, M5, M6, M8)

f. Replace consumable items with refillable (eg milk UHT to flasks) (M5, M6)

### **9. Transport**

a. car share (M3, M4, M5)

b. use smallest vehicle needed (M4, M7, M9)

c. walk / cycle (M4, M4, M6, M8)

d. dual fuel vehicles (M7)

e. look at how drive (M9)

f. look at where driving / choice of vehicle (M7, M9)

**SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

**Table 2: Perceived drivers of pro-environmental practice**

Business strategy / win-win	External business environment	Personal engagement / values
<ul style="list-style-type: none"> <li>• Competitive advantage through pro-environmental practice [M1, M4, M9]</li> <li>• New business opportunity [M8, M9]</li> <li>• Cost control [M1, M2, M3, M4]</li> <li>• Business size allows strategic freedom [M5, M6, M7, M8, M9]</li> <li>• Advantage in recruiting good calibre staff [M4, M8]</li> </ul>	<ul style="list-style-type: none"> <li>• Local authority permit requirements [M1, M2]</li> <li>• External information, e.g. about technology [M1, M2, M5, M6, M7]</li> <li>• Government policy initiatives, e.g. environmental taxes [M1, M6]</li> <li>• Legislation requiring less harmful technology / processes [M1, M2]</li> <li>• Local authority funding agreements [M3, M4]</li> <li>• Requirements for tendering for contracts [M1, M2, M4]</li> <li>• External support and advice [M1, M3, M4, M5, M6]</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental commitment of boss [M1, M2, M3]</li> <li>• Own environmental commitment (M1, M2, M3, M4, M5, M7)</li> <li>• Personal commitment of team and life partners [all]</li> <li>• Working with similarly minded other businesses and suppliers [M5, M6, M7]</li> <li>• Community responsible organisational culture [M3, M4, M5, M6]</li> <li>• Long-term view on investment [M1, M5, M6, M9]</li> <li>• Encouragement and sharing ideas with people</li> </ul>



**SMEs and sustainability: managers' values and engagement with environmental and climate change issues**

		<p>outside organisation [all]</p> <ul style="list-style-type: none"> <li>• Fusion of own values with business opportunities [all]</li> </ul>
--	--	--

**Table 3: Perceived barriers to pro-environmental practice**

<b>Business strategy / win-win</b>	<b>External business environment</b>	<b>Personal engagement / values</b>
<ul style="list-style-type: none"> <li>• Long payback times [M1, M4, M6]</li> <li>• Reduced financial incentive due to falling energy prices [M1, M4]</li> <li>• Reduced production efficiency due to economic crisis [M1]</li> <li>• Relatively higher cost of newer (environmentally preferable) technology [M1, M4]</li> </ul>	<ul style="list-style-type: none"> <li>• Inconsistent government policy, e.g. with respect to incentives / charges [M1, M6]</li> <li>• Cost of trade recycling [M3]</li> <li>• Complexity and time needed to access incentive schemes (e.g. bike loan) [M4]</li> </ul>	<ul style="list-style-type: none"> <li>• Owner / manager less prepared to take risks on improvements [M1]</li> <li>• Not knowing how to access incentives [M3, M4]</li> <li>• People stick with what they know / resistance to change and new ideas [M1, M2, M7, M8]</li> <li>• Internal politics, e.g. around personal status [M4]</li> </ul>