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Enhancing the ethical behaviour of sustainable entrepreneurs through responsible innovation – the case of new technology-based firms in Europe

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Abstract: To solve societal challenges, such as climate change, socio-ethical issues must be integrated into innovations and managed during the sustainable entrepreneurship process. Responsible innovation aims to align and incorporate socio-ethical factors into innovations. However, there are questions over how best to apply responsible innovation within industry contexts. This research (1) develops a workshop method which helps sustainable entrepreneurs to identify and consider socio-ethical factors in a systematic way, and (2) explores its application and impact across 12 cases of sustainable entrepreneurship. The results show that while the workshop raises awareness of socio-ethical issues, barriers exist that can prevent the sustainable entrepreneurs from taking action. We highlight that within a model of ethical decision-making, these barriers inhibit the establishment of moral intent, a key step in ethical decision-making. It is concluded that while raising awareness of socio-ethical issues is a necessary condition, it is not sufficient for the implementation of responsible innovation in industry contexts.

Introduction: Sustainable entrepreneurs must identify and integrate socio-ethical issues into innovations to ensure that the solutions they develop are effective, socially desirable and ethically acceptable (Stilgoe et al., 2013). Responsible innovation seeks to align and incorporate socio-ethical factors into innovations, and in doing so, ensure an innovation process which is more inclusive and democratic (von Schomberg, 2013). As such, responsible innovation may provide a method for managing socio-ethical challenges faced by sustainable entrepreneurs and so enhance ethical behaviour.

However, there are questions over how socio-ethical factors are managed and incorporated by sustainable entrepreneurs, and how best to apply responsible innovation to industry settings. Applying responsible innovation to these contexts is potentially problematic due to difficulties in managing the goals, expectations and values of different stakeholders, the need for asymmetric information for competitive advantage, as well as strains between commercial interests and those of responsibility (Blok et al., 2015; Blok and Lemmens 2015). The successful application of responsible innovation, however, could reduce risk, has the potential for improved understanding of users and other stakeholders, and could enhance social legitimacy (Husted and De Jesus Salazer, 2006).

The management of socio-ethical issues is likely to involve ethical decision making. Previous research has explored ethical-decision making in relation to sustainable entrepreneurship. We build on these previous works (Payne and Joyner, 2006; Woiceshyn, 2011), to use a dual backing for the research of responsible innovation and ethical decision making. Ethical decision-making theories and models suggest that raising awareness is an important achievement, as this knowledge then leads to action. For instance, Jones (1991) highlights four steps to ethical decision-making taking place: (1) recognising moral issues; (2) making a moral judgement; (3) establishing moral intent and (4) engaging in moral behaviour.

Objectives and research questions: This paper seeks to enhance our understanding of how responsible innovation can be applied to industry contexts. To do this, 1) a workshop method is developed which aims to allow sustainable entrepreneurs to identify and consider socio-ethical risks and opportunities in a systematic way. We 2) explore its application and impact in the context of New Technology-Based Firms (NTBFs) focused on sustainability challenges related to agriculture, water, and energy. This allows us to explore the extent to which increased awareness of socio-ethical issues leads to more ethical and responsible actions. We focus on cases of sustainable entrepreneurship as we expected these actors to have a disposition for the identification and integration of socio-ethical factors.

Data and methods: The research questions are explored through the application of the tool through 9 workshops to 12 cases of sustainable entrepreneurship. The workshop method integrates the concepts of responsible innovation, philosophy of technology and design for usability.

The workshop involves several steps: in step one, entrepreneurs note the known socio-ethical issues related to their innovations. This provides a baseline of known issues against which final workshop results can be compared, allowing the impact of the workshop to be assessed and validated.

In step two a product-impact tool (PIT) is applied, which helps to examine the (potential) impacts of an innovation (Dorrestijn and Eggink, 2014); this facilitates the identification of new socio-ethical issues and allows known issues to be explored in greater detail. The PIT distinguished between four different modes of interaction between a technology and its users and environment. The four modes include before-the-eye, to-the-hand, behind-the-back, and above-the-head and correspond to cognitive, physical, background, and abstract dimensions.

In step three responsible innovation dimensions are introduced to provide a starting point for entrepreneurs to think about how to better manage the identified socio-ethical issues.

Follow-up interviews were performed in the months that followed the workshops. This allowed an assessment of whether increased awareness of socio-ethical issues results in higher integration of these issues into innovations, and what drives this integration or what inhibits it, within the context of ethical decision-making.

Results: The results highlight that sustainable entrepreneurs are aware of socio-ethical issues prior to participation in the workshop. These are often focused on vision and mission of the firm and the environmental and/or social value propositions incorporated into the innovation. The tool is found to be able to identify new socio-ethical issues and enhances understanding of issues previously known about. The longitudinal results indicate that the sustainable entrepreneurs face difficulties in balancing the management of socio-ethical factors with finite resources and economic aims. For instance, while sustainable entrepreneurs reported being increased levels of awareness, their priorities were highlighted as being Short-term economic concerns, such as sourcing investment or identifying customers and achieving sales are highlighted as priorities versus managing socio-ethical factors.

Within the context of ethical decision-making, the achievement of the tool to raise awareness is promising, as it theory predicts that knowledge will lead to action (enhanced integration and management of socio-ethical factors). However, based on the follow-up interviews it becomes clear that while awareness may be a necessary condition for responsible innovation in cases of sustainable entrepreneurship, it is not a sufficient, as a range of barriers inhibit action. These barriers can be seen to impact the establishment of moral intent.

Contributions: This research presents a tool which aims to aid sustainable entrepreneurs in identifying and considering socio-ethical risks and opportunities in a systematic way. The results indicate that the method is successful at identifying additional socio-ethical issues as well as providing further detail and granularity to existing or known issues. The results also indicate that while awareness of socio-ethical issues is increased, the management of these issues is subject to trade-offs and barriers. This highlights that awareness is a necessary but not sufficient condition for further integration of socio-ethical issues into sustainable entrepreneurship.

This research contributes by providing a practical instrument for use by sustainable entrepreneurs to assess the socio-ethical issues associated with their innovations, and via its application, it provides an analysis of how sustainable entrepreneurs consider socio-ethical issues in practice. The research also indicates where in the ethical decision-making process barriers are inhibiting action. Future research should further explore how best to overcome these barriers and help sustainable entrepreneurs to engage in ethical behaviours.

Keywords
Sustainable entrepreneurship; responsible innovation; new technology-based firms; ethical decision-making