DEVELOPING TOOLS AND EVIDENCE TO DELIVER PROSPERITY

BUILDING A GREEN LEARNING ORGANISATION: HOW EMPLOYEE-DRIVE INNOVATION CAN ENABLE ORGANISATIONAL SUSTAINABILITY TRANSITIONS

Beatrice R. Bekar

Working Paper 001-2022

October 2022

Institute for Global Prosperity

Institute for Global Prosperity

About the IGP

The IGP's mission is to transform how we make decisions, the kinds of evidence and reasoning on which our decisions are based, and the tools we have at our disposal. We approach prosperity from a global perspective and undertake long-term research to find out what works and what the challenges of attaining sustainable, equitable global prosperity might be. The tools used to make decisions come from law, economics and policy but culture must be recognised as an important influence, particularly alternative narratives from the Global South.

For further information please contact: **igp@ucl.ac.uk**

To be cited as: Bekar, B.R. (2022). *Building a Green Learning Organisation: How employee-drive innovation can enable organisational sustainability transitions*. London: Institute for Global Prosperity, UCL.

IBSN: 978-1-913041-33-5

First published in October 2022

Abstract

The COVID-19 pandemic is emerging as a window of opportunity, urging governments and organisations worldwide to accelerate the transition towards a green economy. Despite the attempts towards a green transition, transforming current practices and embedding sustainability within daily work routines still presents organisations with major challenges. These are partly due to a traditionally top-down, siloed and reactive approach to sustainability innovation, often emerging from new government regulations, market sanctions, or leadership changes. Such an approach often results in a symbolic adoption of sustainability which fails to create a sense of distributed problem-solving, wasting employees' innovative potential in delivering substantial social and environmental value. To understand how organisations can prevent such symbolic adoption of sustainability, experts have studied organisational designs that ensure bottom-up innovation processes, continuous learning and resilience. This dissertation investigates how employee-driven innovation (EDI) can be harnessed for organisational sustainability transitions (ST). Through a combination of academic literature and practice-based knowledge gathered across three semi-structured interviews, this qualitative study will explain how EDI can contribute to organisational sustainability transitions and will unpack which factors, mechanisms or processes can initiate such an innovation process.

Acknowledgements

Writing might look like a lonely process from the outside (especially having spent over a year entirely on Zoom). However, I have never been more surrounded by an extraordinary group of people who have restlessly inspired, guided and supported me like in the few months I spent working on my dissertation.

First, I would like to thank Tuukka Toivonen, who supervised the project and guided me with trust, positivity, and kindness. I also thank Matthew Davis, who has helped me shape my dissertation topic in its earliest developments and helped us students navigate an extremely complicated year.

I want to thank Olivia Chapman, who has made this possible by allowing me to follow my passions both inside and outside Nesta. None of this year's work would have been possible without her immense support and contagious laugh.

My work at Nesta has largely inspired this research, managing projects addressing jobs and skills challenges with an extraordinary team of people. I like to think my master's degree actually began when I joined Nesta in 2019, so I am immensely grateful for each experience that led to this independent project.

I want to thank Seán for being my harbour every time I sink inside my anxious brain, reminding me that life is not that scary next to him. I also thank Nicole for being the one I go to every time I have a new crazy idea about changing the world and always replying with 'yes and'.

Finally, I thank my family for giving me everything and beyond. Despite everything, there is a piece of them in everything I do, and I would not know where I would be without them.

Publication

Designed by Amanda Kartikasari.

CONTENTS

LIST OF ILLUSTRATION

LIST OF ABBREVIATIONS

EDI	EMPLOYEE-DRIVEN INNOVATION
EDSI	EMPLOYEE-DRIVEN SUSTAINABILITY INNOVATION
GHRM	GREEN HUMAN RESOURCE MANAGEMENT
SDGS	SUSTAINABLE DEVELOPMENT GOALS
ST(S)	SUSTAINABILITY TRANSITION(S)

1. INTRODUCTION

As a result of complex environmental and social challenges, sustainability is increasingly becoming a margin for identifying 'organizations' [sic] success and survival' (Duradoni and Di Fabio, 2019, p. 1). In the past decade, sustainability has gained momentum thanks to the introduction of stricter regulations and standards, a growing shift in public opinion and consumer behaviour, and increased financial investments towards socially and environmentally responsible ventures (Kerrigan and Kulasooriya, 2020). The incentives for businesses to move towards sustainable practices are also increasingly becoming evident, with plenty of studies demonstrating the link between sustainability and increased efficiency (see Flammer, 2013; Muja et al., 2014; Cohen et al., 2002; Whelan and Fink, 2016 amongst others), as well as greater employee motivation (see Buhl et al., 2016; Yuriev et al. 2021; Ramus, 2021; Whelan and Fink, 2016 amongst others) and stronger customer value (Krunal et al., 2018). The urgency for a sustainability transition has been highlighted by the COVID-19 pandemic, being 'inextricably intertwined with global environmental issues [...] both in terms of its origin and the implications for environmental outcomes and the future well-being of societies around the world' (OECD, 2020). Since the pandemic, the UK's government has attempted to accelerate the transition to a net-zero economy and boost the creation of two million green jobs through a string of policies and schemes (Gov.uk, 2020; Gov.uk, 2021). While creating new jobs and incentives is essential to boost a transition to net-zero, we argue that greater structural and cultural changes are needed to transform how existing organisations are currently operating. To generate substantial change, organisations ought to 'proactively engage with sustainability transitions in their direct context and link these to internal business transitions' (Loobarch and Wijsman, 2013, p.20).

Experts across fields have formulated a strong business case for sustainability (Whelan sand Fink, 2016), with organisations increasingly 'searching for ways to deal with such unpredictable changes' (Loobarch and Wijsman, 2013, p. 20). However, most of the attempts towards sustainable transitions so far have happened in reaction to disruptive events rather than being designed against a shared vision of sustainability (Delmas et al., 2013 in Meijia and Balanzo, 2018). As argued by Loobarch and Rotmans (2006), 'many transitions and system innovations that happened in the past were not set in motion based on a preconceived goal and did not lead to a more sustainable society' (in Olshoorn and Wieczorek, 2006, p. 188). For example, the collapse of the Rana Plaza manufacturing building back in 2016 awoke the Western world to the poor labour conditions of the fashion manufacturing sector in Bangladesh. The tragic event prompted a series of national and international responses to increase the industry's quality of work (ILO, 2018). Fast forward to 2020, the effects of the COVID-19 pandemic worldwide have presented another 'window of opportunity' (Bodenheimer and Leidenberger, 2020) for accelerating the transition towards a fairer and more sustainable society. Such tipping points have been and are becoming instrumental in prompting system-wide changes. Nevertheless, here we argue that a sustainability transition can no longer be handled in sprints, every time a crisis unfolds. Instead, such prolonged crises – whether they are industry-specific like the Rana Plaza explosion or global and cross-system like the COVID-19 pandemic – should urge governments, institutions, and businesses 'to initiate transitions and system innovations from the preconceived goal of sustainable development' (Loobarch and Rotmans in Olshoorn and Wieczorek, 2006, p. 188), enabling change intentionally rather than reactively.

If, on the one hand, organisations are constantly

adapting to new market trends and experience 'ongoing processes of change', on the other hand, this does not always mean that organisations are substantially changing the way they operate (Tsoukas and Chia, 2002; Yuriev et al., 2021; Bianchi et al., 2021, p. 580). Likewise, several studies confirm how many 'organizations may symbolically adopt environmental practices simply to satisfy institutional demands and receive external legitimacy while continuing to operate as usual' (Boiral et al., 2017; Boxenbaum & Jonsson, 2008; Bromley & Powell, 2012; Greenwood et al., 2011; Kassinis & Panayiotou, 2018; Scherer & Palazzo, 2011; Testa et al., 2018a in Bianchi et al., 2021, p.3). Indeed, scholars agree that a gap exists between top-down environmental policies and day-to-day practices within firms (see Ramus, 2001, Polman & Bhattacharya, 2016 and Bianchi et al., 2021). As stated by Bianchi et al., 'adoption is not synonymous with implementation, and top management cannot expect to adopt an environmental strategy without making changes to current organizational routines and practices' (2021, p. 2). Despite the efforts made to regularise sustainability, its superficial adoption contributes unfortunately to creating a clash between an organisations' external representation and its internal efforts towards sustainability – a phenomenon known as 'greenwashing' (Bansal & Clelland, 2004; Du, 2015; Lyon & Montgomery, 2015; Seele & Gatti, 2017 in Bianchi et al., 2021, p. 3).

As argued by Hoffman, Professor of Sustainable Enterprise at the University of Michigan, 'sustainable business is reaching the limits of what it can accomplish in its present form' (2018). Therefore, this dissertation aims to understand how organisations can initiate internal sustainability transitions through two key lenses:

1. Employee-driven innovation (EDI):

   As demonstrated by Bob Willard in The New Sustainability Advantage, bringing corporate goals down to the individual level can ensure the concrete achievement of a sustainability transition (2002). However, there is a lack of understanding on how organisations can foster employees' innovative behaviour by using their stocks of knowledge, skills, intrinsic motivation and personal commitment to sustainability (Buhl et al., 2016, p. 5). To prompt substantial organisational sustainability transition and achieve greater organisational resilience – or 'the ability to cope with unforeseen dangers, to learn from them and to rebound after managing them' (Network for Business Sustainability, 2021) – companies must 'reassess their innovation and sustainability processes' by recognising employees as key sources of sustainability innovation (Buhl et al., 2016, p.4).

2. Organisational learning:

   As stated by Howard, 'change is about learning' (1990, p. 255). In the vast literature on organisational learning, the latter has been studied as 'a means to achieve strategic change' (Benn et al., 2013; Crossan et al., 1999; Laszlo & Laszlo, 2002 in Bianchi et al., 2021 p. 2), in which organizational actors are seen as catalysts of change. However, while scholars have widely explored the importance of organisational learning in sustainability transitions (van Mierlo and Beers, 2020), not enough is known on how harnessing sustainability competencies and intrinsic motivation (Cassiolato et al., 2003) can 'grow people into leadership roles for sustainable business' (Grayson et al., 2013, p. 7). Traditional approaches to organisational change that rely on third-party experts do not always fit the demands of an ever more complex and rapidly changing landscape (Reddy et al., 2021). Instead, organisations might benefit from creating a culture of continuous learning to ensure employees adopt sustainability practices and empower them to shape how sustainability can exist within their day-to-day activities (Bianchi et al., 2021).

Research to date still lacks a framework for grasping how EDI and organisational learning can contribute to sustainability transitions and how they can be devised to support organisations in adopting more sustainable practices (Paillé and Valéau, 2021). This dissertation will thus explore how EDI can be harnessed for organisational sustainability transitions. To do this, it will first explore how EDI can contribute to sustainability transitions within organisations. Secondly, it will unpack which factors, mechanisms or processes can initiate EDI for organisational sustainability transitions.

In the following section, the study will analyse the existing literature on EDI, sustainability transition theory (see van Mierlo and Beers, 2020; Meijia and Balanzo, 2018; Plummer and Van Poek, 2021; Loobarch and Wijsman, 2013 and Loobarch and Rotmans, 2006), organisational learning and change (see Howard, 1990; Tsoukas and Chia, 2002; van Poeck et al., 2018; van Mierlo et al., 2020, Lundkvis and Gustavsson, 2018; Evans and Kivell, 2015 and Bianchi et al., 2021), environmental management (see Bent et al., 2015; Boiral, 2002; Boiral, 2009 and Paillé and Valéau, 2021) and human resources (see Ciocirlan, 2018 and Harrach et al., 2020).

The literature review will address the role of EDI and organisational learning within organisational sustainability transitions, proposing an initial understanding of how harnessing employees' competencies and intrinsic motivations can contribute to the greening of organisations. Later in the paper, we will present the findings from three semi-structured interviews from organisations in the field of innovation, which are leading the way towards more inclusive and innovative working practices within their sectors. Finally, the study will propose a framework with key ingredients to implement EDI for organisational sustainability transitions, connecting the reviewed literature with the empirical knowledge derived from the selected interviews.

2. LITERATURE REVIEW

Scholars define sustainability transitions (STs) as 'processes through which societies can transform in response to persistent sustainability challenges' (Plummer and Van Poeck, 2021 p. 418). Whilst the literature on sustainability transitions vastly focuses on long-term transformations, a smaller strand of the research has also provided a 'firm-level focus, examining how the development and implementation of novel business models can create and capture value from sustainable innovations' (Boons and Lüdeke-Freund, 2013 in Bolton and Hannon, 2014 p. 1731). Nevertheless, due to the lack of a shared understanding of what 'sustainable practices' represent within organisational contexts, defining how STs can take place and how they can be empirically assessed is a particularly challenging task (Delmas et al., 2013 in Meijia and Balanzo, 2018; Delmas et al., 2019). Moreover, unpacking how they can happen, either at the firm or sector level, without government involvement (for example, through voluntary or bottom-up drivers) still requires further analysis (Delmas et al., 2019). Here, we argue that grasping how sustainability transitions can occur within organisations thus requires balancing different understandings and meanings of change, leadership, and learning (Meijia and Balanzo, 2018).

2.1 ORGANISATIONS AS ENGINES OF CHANGE

Defining how change unfolds within organisations is the first step to understand how sustainability transitions can be prompted. It is often said that organisations are resistant to change, mostly due to the latter being seen as an unexpected and disruptive event. Such a definition of organisational change ultimately might be deriving from a long scholarly tradition that studied organisations through questions of stability and predictability (Orlikowski, 1996 in Tsoukas and Chia, 2002). Despite this, scholars are now increasingly embracing the idea that 'organizations [sic] are sites of continuously evolving human action' (Tsoukas and Chia, 2002, p. 567). They are outcomes of different routines or combinations of tasks that continuously create different, evolving patterns. As Tsoukas and Chia (2002, p. 578) put it, 'there is a world out there that causes the organization [sic] to respond, but the pattern of response depends on an organization's [sic] self-understanding – the historically created assumptions and interpretations of itself and its environment'. Therefore, here we argue that unpacking such an internal pattern is key to creating intentional change in response to sustainability challenges. It is within such intentional direction of change that true organisational transformation – that is, the effort 'to reinvent the organisation and discover a new or revised business model based on a vision for the future' (Ashekans, 2015) – can take place.

As Colley et al. (2007) put it, change was much slower throughout the twentieth century than today because technological innovation had a less disruptive impact on the way we live and work. Instead, due to ever so complex and changing labour market challenges, such as sustainability, 'product and process lives are now much shorter' (Colley et al., 2007, p. 390). Given today's turbulent market, the debate should not surround whether organisations should or should not change. Instead, standing from the idea that organisations are engines of constant change, we should focus on devising approaches that allow them to be resilient, adapt and transform substantially. This paper aims to do this by zooming closer to organisational actors and understanding how they can act as change agents (Bianchi et al., 2021). As stated by Harrach et al. (2020), '[...] promoting sustainability is a complex task that requires the involvement of all actors in

the organisation' (p. 94). Drawing from human resources management, organisational learning, and sustainability transition theory, the sections below will explore how placing employees at the centre of organisational change and innovation is fundamental to keep up with complex, fast-paced challenges such as sustainability.

2.2 TAPPING INTO EMPLOYEES' INNOVATIVE POTENTIAL

According to scholars, organisational change can be understood as being 'grounded in the ongoing practices of organizational actors' (Orlikwoski, 1996, p. 65 in Tsoukas and Chia, 2002, p. 569) or as being 'locked up inside "ordinary employees"' (Pickard, 1996 in Beard and Hartmann, 1997, p. 238). Thanks to their proximity to organisational practices and their thorough understanding of daily working activities and processes, employees have the creative potential to 'develop innovation in a problem-solving fashion' (Miao and Ji, 2020, p. 3). Their know-how gives them the potential 'to anticipate change, adapt to new circumstances and invent new business practices' (Howard, 1990, p. 19). For these reasons, harnessing organisations in-house innovative potential can prepare them to adapt to complex sustainability challenges more efficiently.

The idea of promoting employees' active participation in the creation of new sustainable practices and routines is part of a wider field of management and innovation, known as 'employee-driven innovation' (EDI). This bottom-up approach consists of the creation of 'new ideas, products and processes [...] originating from the interaction of employees' (Høyrup, 2012, in Høyrup, eds., p. 8). In the context of organisational STs, if provided with the tools and resources to do so, employees could 'actively steer the company toward its mission with passion and innovation, promoting its longevity and success' (Craig, 2018). In practice, employees could do so, for example, by acting as internal stakeholders (such as by leveraging their company to reduce their environmental impact) or by actively creating new sustainable practices or routines using their existing knowledge, skills, and motivation (Buhl et al. 2016). In this study, we will refer to such a sustainability-focused approach to EDI as 'employee-driven sustainability innovation' (EDSI).

Despite the various studies supporting the importance of cultivating 'employees' green behaviour' (Norton et al., 2015), the role of EDSI – which sees employees' as drivers for new sustainable practices – is still poorly explored by practitioners inside organisations (Bianchi et al., 2021). In the next section, we will thus describe how investing in employees' intrinsic motivation for sustainability might accelerate sustainability transitions within organisations.

2.2.1 GREEN IDENTITY, CREATIVITY AND INTRAPRENEURSHIP

One of the core concepts of employee-driven innovation is that transformative change 'not only emerges from expert groups but also emanates from "non-experts" in communities of practice' (Buhl et al., 2016, p. 2). In the context of sustainability innovation, Muster and Schrader's extensive research on green human resource management (GHRM) explored how many 'environmentally relevant attitudes and behaviours are not learned exclusively at the workplace, but also in private life' (2011, p. 141). Muster and Schrader define such a phenomenon as a 'green work-life balance' (2011) – a reciprocal interaction between private and work life in which ordinary employees' skills, attitudes, and beliefs are inevitably exchanged. In this section, we argue that organisations looking to transition to more sustainable practices could use this phenomenon by creating environments in which their employees' values and intrinsic motivation towards sustainability can 'spill over' into their professional practice (Muster and Schrader, 2011).

Chen (2013, p. 275) defines the total of an

organisations' stocks of knowledge, capabilities, and innovative potential towards sustainability as 'green human capital'. At the employee level, organisations' green human capital materialises across two primary aspects: green identity (Chen and Chang, 2021) and green creativity (Chen et al., 2015). The first is shown by an intrinsic motivation towards the promotion of sustainability-oriented behaviours or innovations. Employees characterised by a green identity are thus more likely to 'act out their environmental convictions' (Buhl et al., 2016, p. 2) within their workplace. Therefore, as explored by Boiral's review of employees' voluntary behaviours towards corporate greening (2009), highly motivated individuals with a strong green identity are likely to show higher levels of effort and openness to change. Finally, individuals with a green identity are also more likely to seek a work environment that gives space to their 'green creativity' that is, the ability to develop 'new ideas about green products, green services, green processes, or green practices that are judged to be original, novel, and useful' (Chen and Chang, 2013, p.109). As largely studied by Amabile et al. (1996), creativity is, in fact, the 'starting point for innovation' since it is essential to develop new ideas and to drive competitive advantage within organisations (in Chen and Chang, 2015, p. 109).

Evidently, 'individual creativity and organizational innovation are inextricably linked' (Amabile and Pratt, 2016, p. 160). In such a way, we argue that an organisation's capacity to be innovative and prompt a sustainability transition largely depends on its employees' creative ideas. As a matter of fact, studies across fields agree that the promotion of entrepreneurial behaviour – that is, the inclination to identify opportunities and introduce innovative ideas (Shane and Venkataraman, 2000) – within organisations is essential to foster innovation (see NBS, 2010; Weisnburger et al., 2018; Markopoulos, 2019; Miao and Ji, 2020; Hoyrup et al., eds.). On the contrary, if entrepreneurial behaviour is not appropriately harnessed, 'innovation remains little more than an aspirational destination than a sustainable, tangible one' (Coakes et al., 2011, p. 31). Therefore, an organisation's capacity of decreasing its environmental impact might not just depend on its top-down or corporate social responsibility efforts. Instead, the successful implementation of an organisation's sustainability strategy might largely be influenced by its ability to harness their employees' green identity and creativity (Chen et al., 2015; Buhl et al., 2016), using top-down innovation approaches as a tool for providing validity and support to the implementation of employees' ideas (Aitken, 2020).

2.3 BEYOND SYMBOLIC ORGANISATIONAL CHANGE

Scholars strongly agree that actively engaging employees in the creation of sustainability practices is particularly important to avoid the adoption of symbolical policies or targets with little or no impact on the everyday running of an organisation (Yuriev et al., 2021). As a matter of fact, 'even when organizations [sic] decide to consider environmental issues in their daily operations, green practices are not necessarily substantially integrated into the workplace' (Castka and Prajogo 2013; Heras-Saizarbitoria and Boiral 2013 in Yuriev et al., 2021, p. 5). For instance, many studies refer to the use of the environmental management system ISO14001 as 'frequently dictated by the need to access new markets or client demands rather than an intention to improve environmental performance' (Zutshi and Sohal 2004; Bansal and Hunter 2003; Psomas, Fotopoulos, and Kafetzopoulos 2011 in Yuriev et al., 2021, p. 5). As a result, the ISO standard often fails to create truly transformative change by remaining a mere top-level exercise.

A superficial top-down commitment to sustainability is likely to reflect throughout all levels of an organisation, wasting the innovative green potential hold by employees. For instance, as Ramus (2001) extensive research on individuals' role in corporate greening demonstrate, 'just as employees know if their line managers really care about environmental management, so too do line managers know if the company is really serious about sustainable

development' (Ramus, 2001, p. 102). According to such a negative 'domino effect', a key obstacle for organisations that wish to adopt sustainable practices and 'benefit from employees' environmental problem solving and idea generation' (Ramus, 2001, p. 102) lies with line management. This is because, while individuals (at any organisation level) might be motivated by their company's overarching sustainability strategy, they might be less likely to propose or implement an employee-driven initiative around the matter if they feel like their line managers are not supportive (Ramus, 2001). Therefore, to ensure every organisational actor embodies their organisation's sustainability policies, scholars agree that meaningfully involving employees (particularly those with line management responsibilities) in the 'decision-making regarding the implementation of environmental management programmes' is critical to avoid organisational greenwashing (Ciocirlan, 2018 in Wells et al., 2018 p. 47).

2.3.1 THE BUSINESS CASE FOR EMPLOYEE-DRIVEN SUSTAINABILITY INNOVATION

The benefits of engaging employees in driving organisations' sustainability transition are not limited to preventing corporate greenwashing. Ensuring higher employee involvement in key decision-making processes surrounding sustainability strategies 'has benefits not only for organisational environmental performance but also for typical areas of concerns for HR, such as engagement and turnover' (Ciocirlan, 2018 in Wells et al., 2018 p. 47). For example, as reported by Whelan et al. (2016), who surveyed over four-hundred companies with highly rated corporate social responsibility strategies, engaging employees and acting on their initiatives can result in lower turnover and annual quit rates, 'saving replacement costs up to 90%-200% of an employee's annual salary for each retained position' (Whelan at al. 2016). On the contrary, failing to engage or reward employees for acting upon sustainability initiatives can cause plenty of innovative potentials to be wasted. For example, studies report that almost 70% of entrepreneurs conceive their ideas while working as employees and leave to launch their enterprise when they experience constraints within their workplace (Weisenburger et al., 2018). Studies further demonstrate how a general sense of 'perceived alignment of corporate with individual employee values around environmental sustainability has been suggested as a key source of business advantage, a source of job satisfaction and a means of attracting and retaining talented staff' (Dunphy et al., 2007 in Ben et al., 2015).

Despite the lack of robust empirical evidence around the subject, Reddy et al. also suggest that implementing EDSI can provide organisations with 'a cost-effective way to promote organizational learning for sustainability' (2021, p.43). Considering the numerous rapid societal changes presently affecting the labour market, scholars propose that it might be advantageous to implement systems that facilitate the constant creative use of available resources, such as existing organisational behaviours, skills, and capabilities (Reddy et al., 2021 and Teece et al., 1997). In such a way, scholars understand EDI to be closely linked with the dynamic capabilities theory (see Chen and Chang, 2015), that is, a firm's capacity to reconfigure available resources and 'renew competencies so as to achieve congruence with the changing business environment' (Teece et al., 1997, p. 515). In the context of sustainability, designing an organisation that allows for the constant renewal of organisational resources through learning and experimentation can positively influence green creativity, thus augmenting opportunities for innovation and resilience (Chen and Chang 2015).

2.4 INITIATING EMPLOYEE-DRIVEN SUSTAINABILITY INNOVATION

Whilst the importance of EDSI for sustainability transitions is largely demonstrated across studies, the current literature has not agreed on how it practically develops yet (Paillé and Valéau, 2021; Bianchi et al., 2021). Such a gap might have to do with the fact that employee-driven initiatives can

happen through various configurations and scales of leadership involvement. These include informal or pre-planned activities that might be led through a mix of top-down and bottom-up activities, depending on whether they are supported or initiated by management teams at any stage of the innovation process (Lundkvist Gustavsson, 2018). Similarly, in their analysis of employees' roles for sustainability transformation, Sübauer et al. (2019) 'differentiate between employees' roles as implementers, ambassadors, or recipients of corporate sustainable practices' (p. 212). Another typology of EDI is proposed by Markey et al. (2016). The authors distinguish between direct (which consists of employees' direct involvement in creating a new task or process through team meetings or staff surveys) and indirect employee-driven innovations (where employees participate in decision-making through representation via employee committees, councils, or unions).

Based on the literature reviewed in this dissertation, the next sections will attempt to draw two key principles that might enable employee-driven sustainability innovation (EDSI) within organisations.

2.4.1 PRINCIPLE 1: CREATING AN INTRAPRENEURIAL FABRIC

Employee-driven innovation challenges the notion of leadership by proposing 'managers with a paradox: directing a "nondirective" change process' (Howard, 1990, p. 255). In their extensive study with senior change leaders across sectors, Howard (1990) proves that leading transformative change is less about directing it than setting the right conditions for innovation to take place, without 'insisting on specific solutions' (p. 255). Harnessing the innovative potential of each individual organisational actor thus calls for a high degree of decentralisation to ensure decisions are taken more quickly and to allow greater experimentation (see Howard, 1990 and Yuriev et al., 2021; NBS, 2010). It also requires breaking through a tendency of approaching innovation in siloes and in a top-down manner. As stated by Kuenkel (2017) in their evidence-based analysis of leading systemic change for sustainable development goals (SDGs) implementation, 'the future of leadership is collective' as it requires all organisational actors' capacities in a jointly and flexible way towards a common goal (p. 28).

To achieve such a decentralised decision-making process, organisations must provide employees with the opportunity, time and resources to influence and drive sustainability-related initiatives amongst their day-to-day activities. For instance, Lundkvist and Gustavsson (2018) argue that 'workers' resources, such as their ideas, creativity, competence and problem-solving abilities, can drive innovations only when innovative activities are embedded in employees' everyday work practices' (p. 48). To support such innovative activities, Weisenburger et al. (2018) suggest that 'people need to be connected by an "entrepreneurial fabric" that allows for a more distributed process in exploring, approving, and financing new ideas' (p. 21). The Network for Business Sustainability also supports such a concept, calling for managers to 'establish an entrepreneurial culture as a way to encourage innovation in normal times and crises', where decisions can be made quickly, and ideas can be rapidly tested and implemented (2010). For example, such an entrepreneurial fabric might consist of 'participation structures such as town hall meetings and employee suggestion programmes' that allow employee engagement within their working routines (Ciocirlan, 2018). Ultimately, establishing a strong innovation network within organisations can ensure 'ideas don't get bottlenecked on their way to upper management but can be overseen and evaluated by people closer to the project and team' (Weisnburger et al. 2018, p. 61).

In the literature, employees who are strongly committed to social and environmental issues are also regarded as 'sustainable intrapreneurs' (Schrader and Harrach 2013 in Harrach et al., 2020). Intrapreneurship is an employee's ability to identify or create opportunities within their organisation, creatively solve problems and resource constraints, and implement their ideas (Hastuti et al., 2016). Therefore, encouraging intrapreneurial behaviours by providing tools, resources, and the right

organisational systems 'can enhance people's capability to cope with work-related changes and transition by means of innovative solutions' (Duradoni and Di Fabio, 2019, p. 2). In summary, whilst employees might already enter the workplace with a strong green identity, 'it is important [...] to create systems and processes that make it easier for employees to integrate sustainability into their business decisions' (Polman and Bhattacharya, 2016). Moreover, it is also essential 'to act on employee initiatives' (Polman and Bhattacharya, 2016) to prevent the corporate culture from 'limit[ing] their charismatic nature and their critical thinking' (Markopoulos et al., 2019, p. 4). Such an approach requires a new understanding of leadership, recognising that 'seeking out the involvement of employees from all company departments can substantially contribute to corporate greening' (Sübauer et al., 2019, p. 210).

2.4.2 PRINCIPLE 2: BUILDING' LEARNING ORGANISATIONS

A decentralised approach to organisational leadership that supports experimentation across all levels demands a culture of learning and inquiry which 'supports and encourages the collective discovery, sharing and application of knowledge' (Gill, 2010, p. 49 in Evans and Kivell, 2015, p. 763). As written by Beers et al. (2016), 'the more complex the innovation challenges, the more important the associated learning' (in Van Poeck et al., 2018, p. 299). With STs representing one of the most complex challenges or our times (Van Poerck et al., 2018), we argue that organisations wishing to implement substantial organisational STs need to create a learning environment that provides employees with the tools to lead change and shape their work activities towards more sustainable practices (Lundkvist, and Gustavsson, 2018).

Within the field of ST theory, learning is understood 'as a vital means to creatively transforming unsustainable regimes' (Van Poeck et al., 2018, p. 298). Learning processes can facilitate innovative behaviour by linking experimentation with progress (van Mierlo et al., 2020) and 'inviting new, creative approaches and solutions' (Plummer and Van Poek, 2021, p. 418). Brown et al. argue that such process goes beyond the creation of new knowledge, as it involves 'questioning the taken for granted' (2003, p. 311) (or unlearning) and re-thinking those aspects that reinforce path-dependency and prevent the creation of new practices (in Van Poeck et al., 2018, p. 301). In the context of EDSI, recent studies on organisational learning have provided key learning approaches to successfully lead organisational sustainability transitions from the bottom-up (see Lonzano, 2014, Evans and Kivell, 2015, Tilbury, 2017 in Didham et al., 2017). For instance, van Mierlo et al. (2020) group these into two categories: discursive interaction and reflective action. The first consists of exchanging knowledge and information through different means. The second is an 'iterative process of action and reflection [...] which may give rise to the emergence of changing practices' (van Mierlo and Beers, 2020, p. 266). Similarly, Lozano (2003, p. 209) states that 'organisational learning for sustainable development is a complex and iterative process where organizations acquire knowledge through an experiential process about action-outcome relationships [...]'. These approaches belong to the social and situated traditions of learning, where new skills and knowledge are learned through interacting with others or by doing (Didham et al., 2017; Høyrup, 2010; Jones and Hendry, 1994). According to such traditions, the workplace itself can thus be seen as a learning environment (van Mierlo et al., 2020; Scholz and Methner 2019; Jones and Hendry, 1994) that constantly gives rise to tacit knowledge – that is, the 'knowledge that people acquire and develop in the course of actually doing a job' (Jones and Hendry, 1994, p. 155). Management studies researchers have defined such workplaces as 'learning organisations' – or companies that are 'skilled at creating, acquiring, and transferring knowledge, and at modifying their behaviour to reflect new knowledge and insights' (Garvin n.d., in Colley et al., 2007, p. 392). A learning organisation is able 'to adapt to changes in its environment and to learn from the lessons of its members and organizational experience' (DiBella & Nevis, 1998 in Evans and Kivell, 2015, p. 762). Most importantly, they are organisations where learning is seen as a continuous process and an integral part of personal

development (Barham et al. 1988 in Jones and Hendry, 1994).

A poor learning culture can compromise the embedment of new sustainability practices within organisations (Polman and Bhattachyra, 2016). Hence, solving sustainability challenges requires organisations to incorporate day-to-day learning activities across all levels and departments. In this regard, scholars argue that employers could benefit not only from acting on employee-driven sustainability initiatives but also from investing in learning programmes that further strengthen their employees' sustainability commitment and knowledge and enhance their innovative potential (Chou, 2014, in Paillé and Valéau 2021; Boiral, 2002). For instance, Boiral (2002) calls for custom training programmes to help employees make 'the connection between the tacit knowledge that is part and parcel of the workers' day-to-day experience and the explicit comprehension of the environmental consequences of behaviours at work' (p. 312). According to the author, this is essential to formalise employees' personal and practical knowledge into new behaviours and transmit the organisational vision. Other scholars also support such approach referring to it as 'green training' – 'a system of learning practices related to environmental issues in order to improve employees' awareness and skills for environmental management in their job' (Tang et al., 2018, p. 34 in Paillé and Valéau, 2021, p. 127).

3. METHODOLOGY

As the previous section presented, we have begun the study by building a theoretical understanding of employee-driven sustainability innovation) and how this approach is connected to organisational learning (Howard, 1990; Tsoukas and Chia, 2002; van Poeck et al., 2018; van Mierlo et al., 2020, Lundkvis and Gustavsson, 2018, Evans and Kivell, 2015), and sustainability transition theory (van Mierlo and Beers, 2020; Meijia and Balanzo, 2018; Plummer and Van Poek, 2021). Such a theoretical foundation has answered the first part of the study's research question regarding how EDSI can contribute to organisational sustainability transitions. Having demonstrated EDSI's benefits for organisational sustainability transitions, the literature review has been concluded by providing a preliminary answer to the second part of our research question concerning the processes or factors that enable it. We thus have illustrated two key principles that might initiate EDSI within organisations based on the analysed literature. Firstly, we have discussed the need for an intrapreneurial fabric that provides a decentralisation of decision-making and innovation; secondly, we have examined the role of learning in facilitating a culture of inquiry and experimentation that allows formalising and building upon employees' tacit knowledge intrinsic motivation towards sustainability.

The lack of empirical evidence on how EDSI develops within organisations presented the need for a case study research approach, 'examining successful and unsuccessful employee-driven pro-environmental innovations and exploring the key factors that allowed these ideas to thrive or that impeded them' (Yuriev et al., 2021, p. 21). Therefore, we have conducted five semi-structured interviews via Zoom with representatives from organisations in the innovation field to understand how EDSI develops within their organisations and how the latter are making efforts to transition to implement sustainable practices. The interviews (see Fig. 1 and 2) have been designed to build separate case studies to test existing theory and generate new understandings of how EDI might unfold in the context of organisational sustainability transitions (Eisenhardt, 1998). Two interview guides have been devised as 'guided conversations' (Yi, 2003) through a selection of four core open-ended questions (see Fig. 1). The first has been designed to conduct interviews with 'ordinary employees' to understand their attitudes and experiences surrounding employee-driven innovation. The second one has been used to interview senior managers and directors to understand what processes are in place to facilitate employee-driven innovation and what efforts are being carried to promote sustainability within their organisations.

3.1 DATA COLLECTION AND SELECTION

The interview participants have been selected using a theoretical and purposive sampling approach, relying on personal judgement and immediate connections in the industry (Dudovskiy, n.d.). The case study selection has been devised with the aim of 'build[ing] a model applicable across organization types' (Eisenhardt, 1998), with the theoretical sampling approach offering the opportunity to implement 'an incremental approach to case selection and data gathering' (Eisenhardt, 1998). Thus, the data has been collected in a rather explorative and inductive way, letting each case study interview 'decide what data to collect next and where to find them, in order to develop theory as it emerge[d]' (Dudovskiy, n.d.). Each participant has

been provided with an information sheet explaining the aims and objectives of the research project; why they were asked to participate in the study; and details on what to expect during the interview (excluding the interview guides). Participants have also been asked to sign a consent form to agree for the Zoom call to be recorded for the purpose of the study, for their personal information to be kept fully confidential, and for their contributions to only be connected to their job titles. In the following sections, all demographic data, including the name of the participant's workplaces, will thus be completely anonymised. As shown in Figure 1, we will provide codes to refer to each research participant and company. The only information presented will thus be the participating company's sector and the interviewees' job titles as they are pertinent to the observations that will be carried later in the paper.

Figure 1. Levels of analysis and case studies selection criteria based on interview findings.

Data collected	Company #	Sector	Selection criteria
Micro level of analysis: the individual			
Interview 1: Participant A	Company A	Technology	• Strong entrepreneurial culture that encourages and rewards employees to find innovation opportunities; • Commitment towards inclusivity and social innovation; • Alignment with Principle 1 (see section 2.4).
Meso level of analysis: the organisation			
Interview 2: Participant B	Company B	Management Consulting	• Strong continuous learning culture; • Use of 360-degree value approach towards sustainability to foster more sustainable behaviours across the organisation; • Alignment with Principle 2 (see section 2.4).
Macro level of analysis: the sector			
Interview 3: Participant C	Company C	Construction	• Fostering a sector-wide sustainability transition through innovative learning approaches; • Investment in young sustainable entrepreneurs and innovation champions; • Alignment with Principle 1 and 2 (see section 2.4).

Out of the five interviews conducted, three interviews have been selected to be presented in this study. The selection judgement was based on the participants' insights alignment with the principles developed in the literature review (see section 2.4) on how EDSI might develop within organisations. The participating companies' sectors, mission, and organisational culture described by the research participants have also been instrumental in their selection (see Fig. 1). The three semi-structured interviews have thus been conducted respectively with key organisations across three different sectors: Company A is a technology company developing online dating services; Company B provides professional services in business, operations, and technology strategy; while Company C is a non-profit organisation leading transformation through multi-stakeholder partnerships in the construction sector.

3.2 DATA ANALYSIS

The primary data analysis offerred the opportunity to showcase a multi-level analysis of the EDSI process by presenting its implications for sustainability transitions from the points of view of individual employees and organisations and drawing further sector-wide observations and conclusions. This opportunity mostly originated from having applied a theoretical sampling method to the data collection. The data collection process, in fact, primarily started to understand EDSI from an individual point of view (see Participant A in Fig. 1). Deeper into the collection process, we instead identified participants (see Participant B and C in Fig. 1) whose knowledge provided a wider understanding of the phenomenon from an organisational level (which provided insights into what processes should be in place for EDSI to take place) and from a sector level (which provided insights into how sectors could prepare the workforce to enable a sector-level sustainability transition). Therefore, in the following section, we will present the findings by developing three case descriptions according to three levels of analysis: the micro, meso and macro levels. The micro level will provide insights from an employee's intrinsic motivation towards sustainability and their perspectives on their company's openness towards EDSI. Here, we will seek to present a case study to describe what factors can harness and hinder employees' intrinsic motivation, knowledge and innovative potential. In the meso level of analysis, by presenting a learning organisation's example, we will showcase a director's direct experience on what organisational conditions, environments and mechanisms are needed to initiate EDSI. Finally, at the macro level, we will zoom out once more to present how the broader adoption of EDSI might also contribute to an industry-wide sustainability transition. This section will show another director's insights into the UK's construction industry, which is due to undergo a massive sustainability transition pushed by governmental policies and shifts in public opinion and consumer behaviour (McWhirter, 2021).

Further in the paper, the interview findings will be analysed by triangulating multiple sources and identifying patterns between the interview and the selected literature (Yi, 2003). Through the triangulation of data, drawing from the work of Høyrup et al. (eds.), Bianchi et al. (2021) and Norton et al. (2015), the study will finally propose a framework to initiate EDSI within organisations. The framework will comprise of three different components: roles (examining the key players to enable EDSI processes), tools (describing key processes or strategies to prompt EDSI processes), and cultures (analysing how these ingredients might create an environment that promotes EDSI).

4. FINDINGS

The primary research was shaped around a multi-level research approach to understand how employee-driven sustainability innovation can unfold within organisational contexts (Norton et al., 2015). As a result, the primary research presented in this section has been categorised into individual, organisational and sector levels of analysis (Fig. 2). Drawing from three semi-structured interviews (Fig. 1) carried with employees from three separate companies, this section aims to analyse what factors or processes initiate EDSI processes within organisations and its implication for individuals, organisations, and sectors. Starting from a case study of a technology employee, whose innovative potential found itself hindered by their company's lack of clear guidance for EDSI, this section will also present two further case studies providing key insights into the development of EDSI in two separate companies – a management consulting company and a non-profit organisation in the construction sector.

4.1 THE MICRO LEVEL: HOW LACK OF CLEAR GUIDANCE AND COMMUNITY MIGHT HINDER INDIVIDUALS' INTRINSIC MOTIVATION TOWARDS SUSTAINABILITY

Participant A works as a software engineer for Company A, a technology organisation that develops online dating services (Fig. 3). When discussing their company's culture, Company A reported that their organisational culture is characterised by innovation, learning and inclusivity by ensuring each employee can bring their skills and perspectives into the workplace. In particular, they mentioned that 'the company's whole ethos is for everyone to work autonomously as much as possible' (Participant A, Company A). The participant discussed how every employee is encouraged to develop new projects that align with the company's aims and objectives.

> 'It is very much up to an individual [...]. It is up to you to take things as far as you want to go, you can suggest anything, big or small. It just has to go through the right path and get enough approval, and then you will get the resources as long as it is seen to be beneficial for the company.' (Participant A, Company A)

Showing innovative behaviours that benefit the company and demonstrating to be able 'to influence people' (Participant A, Company A) seem to be regarded as strong suits within Company A. Despite the emphasis on individuals' innovativeness, the interviewee added that they do not perceive Company A to be extremely competitive.

> 'It is competitive, but it is not that sort of nasty way competitive. Everyone wants to do their best and be seen as someone very knowledgeable. And there is a really good ethos of sharing knowledge. People who are seen to be very knowledgeable [...] are high on the hierarchy. So, I think that is kind of like a natural way of incentivising people [to be innovative].' (Participant A, Company A)

Following on this perceived ethos of knowledge sharing across the company, Participant A stated that there is an 'unwritten rule about constant learning and constant innovation [...]'. At the same time, though, when asked whether the company provides employees with a clear pathway to initiate independent projects, the participant mentioned

that, despite the encouragement and rewarding for entrepreneurial behaviour, there is no clear approach to do so:

> 'There is no clear approach. There is no "this is the way you should do it". I guess an element of it is playing "the politics game". It is a bit of hard work, but the doors are there for you to open if you can manage to do it.. (Participant A, Company A)

The competitive and innovation-oriented culture of Company A is typical of a tech company, stated Participant A. As mentioned above, a huge incentive for being innovative within the workplace is to gain reputation and trust across the organisation.

> '[...] they leave it up to the employees to move things forward, which I think in tech, in general, tends to happen naturally, because people want to do cool things and look like they are doing cool things.' (Participant A, Company A)

Whilst this approach fosters a motivating environment that seems to stimulate employee's creativity, according to Participant A, leaving everything onto the individuals' capacity to innovate can become overwhelming to sustain alongside the day-to-day responsibilities.

> 'The classic thing of giving someone a big budget which they couldn't possibly spend, and then you end up getting all the resources and you're like: "I have no time. When am I going to fit this stuff in?" So, [the opportunity] is definitely there but it is left up to the employee to set up.' (Participant A, Company A)

During the interview, the participant was asked if they had initiated a project themselves, particularly in response to social or environmental problems. The interviewee stated that they are very passionate about environmental innovation and, after joining Company A, they researched the organisation's position on the matter to understand what he could have contributed.

> 'I have actually asked questions before myself in terms of the products and how we are serving different people with different diets or different lifestyles, and they have done research into these things. However, they are not a priority, at least for [Company A]. In terms of social issues, there is a huge emphasis on making [...] a good and inclusive workplace for people that want to stay there for as long as possible. But in terms of the environmental aspect, [...] it is not something immediately obvious from what I've seen.' (Participant A, Company A)

Participant A stated how they tried themselves to propose a project in the past, but the lack of a community supporting such issue and the realisation that environmental sustainability did not seem a company-wide priority discouraged them.

> 'I was interested in [...] promoting less meat and dairy products within the company, but there doesn't seem to be a very big community there currently. But things will change, I'm sure of it.' (Participant A, Company A)

The participant also showed that they are constantly learning about environmental issues related to his practice, making him eager to propose a new project addressing the sustainability of constant data transferring.

> '[...] something that I only recently learned was about the environmental impact of constantly transferring data. So, any company [that operates] online has an environmental impact. And it is something that not a lot of people think about because it is invisible and doesn't seem to be doing anything. So [...] it would be interesting to raise that question and see what the responses are [...]' (Participant A, Company A)

As the participant stated, the company has a stronger focus on addressing social issues inside (such as diversity and inclusion and women empowerment) and outside of the company (such as creating more inclusive products and services). Such a commitment is shown by how the company

is supporting and scaling an employee-driven initiative on accessibility:

> 'A current one that I'm involved in, although I did not start this, is to do with accessibility. [...] There have been products before that have tried to cater to them but have not been super successful. An initiative was started in the last two or three months, which is basically about improving [accessibility] across all our products. [...] That was led by just one person. It had been in the air for a while, [...] but one person took it upon themselves to start the project and got the sign off from the right people, got enough people involved that were interested and started it.' (Participant A, Company A)

In summary, learning about Company A's work culture provided insights on how a company that regularly deals with innovation might respond to sustainability or similar challenges in the labour market and how their approach to innovation can favour the adoption of EDSI. Although Participant A did not initiate an independent project at the time of the interview, interesting observations can be drawn from their contribution to the study. Most importantly, we have observed how Company A's attitude towards innovation and learning, as well as the incentives (i.e., increased recognition, reputation and trust) given to entrepreneurial behaviours do not always empower employees to engage with

Figure 2. Company A's overview.

Case study #1	Company A
Sector	Technology
Year founded	2014
Number of employees	700
Organisational culture	Company A's culture is rooted in values of innovation, learning and inclusivity by ensuring each employee can bring their skills and perspectives into the workplace.
Key findings on the development of EDSI	• Being seen as knowledgeable by colleagues might be an incentive for carrying innovative behaviours within the workplace; • The lack of a clear pathway (or the sole reliance on individuals' entrepreneurialism) on how to initiate independent projects within the company might hinder EDSI; • The lack of an assigned time and place to dedicate to the generation and implementation of innovative ideas might become overwhelming against employees' contractual responsibilities; • The absence of a community and a clear organisational commitment to sustainability might hinder EDSI.

EDSI. As shared by Participant A, three key aspects might have hindered their engagement with EDSI: 1) the lack of a clear pathway (or the sole reliance on individuals' entrepreneurialism) on how to initiate independent projects; 2) the lack of an assigned time and place for generating and implementing innovative ideas which could become overwhelming against employees' contractual commitments; and 3) the lack of a community supporting such issue as well as the absence of a clear organisational commitment to sustainability.

4.2 THE MESO LEVEL: HOW IMPLEMENTING CO-CREATION AND GREEN TRAINING CONTRIBUTE TO BUILDING A 'GREEN' LEARNING ORGANISATION

Company B is a management consulting firm that operates across business, operations, and technology strategy (Fig. 4). As for the previous interview, Participant B, who works as a Principal Director at Company B, was asked to elaborate on their organisational culture to understand its key values towards innovation, sustainability and change. The interviewee mentioned that every employee shares a strong growth mindset and values continuous learning because of the company's nature.

> 'We encourage a lot of learning [...], the professional services [industry] is a real 'growth mindset, continually learn and evolve' type of industry.' (Participant B, Company B)

Particularly since the digitalisation of the industry, Participant B mentioned how they have personally led various change programmes that looked at scaling innovative behaviours within the organisation by 'making it something that everybody does all the time rather than only in a particular context' (Participant B, Company B). Such an approach to innovation is also linked with the company's so-called '360-degree value' brand strategy, which stands for helping clients transform and reskill their employees towards more sustainable practices and processes.

> '"Sustainability is the new digital" [...]. [...] the same way every business was going to be a digital business, every business is now going to have to be a sustainable business.' (Participant B, Company B)

Ultimately, Company B's 360-degree value strategy stands for the organisations' commitment to consider sustainability an integral component of all their work endeavours. As stated by Participant B, the 360-degree value strategy is used to design projects that deliver various scales of value, including financial, environmental, and social value:

> 'Like with our innovation method, [we think:] how can we make sustainability part of all the different types of work that we do, not just some? How can we think about the 360-degree value in all the work that we do [...]? [...] How does that create meaningful experiences for customers, employees or other citizens (from a public sectors perspective)? [...] What is the sustainable value that's being driven from each piece of work? I think the concept of 360-degree value is a nice way to think about sustainability. Because it is not something else on the side, it is one element in the round, which feels quite representative to me.' (Participant B, Company B)

When asked what approaches Company B considers successful for embedding sustainable practices across all levels of the organisation, the interviewee stated that co-creating activities and using design thinking are the key ingredients to deliver change. These tools allow gathering input from employees or clients throughout all stages of a change process that involves adopting new skills, behaviours or routines.

> '"Sustainability is the new digital" [...]. [...] the same way every business was going to be

> a digital business, every business is now going to have to be a sustainable business.' (Participant B, Company B)

Moreover, from Participant B's experience of leading teams inside their organisation, engaging individuals in creating new ways of working is essential to ensure sustainability is no longer seen as an abstract concept but rather something that people can connect with on a practical level.

> '[...] [sustainability] is a topic that lots of people feel really passionate about, but they are not always quite sure how to connect that to what they are actually doing on a day-to-day basis [...]. So, I think there is something around co-creation and engagement to help people make those connections. [...] This is important to understand how we can harness that passion from an individual perspective. [...] But also [it is important to understand how we can harness] the kind of organisational, systemic changes that are needed and how you can help bring those two together so that people can see them more collectively rather than separately.' (Participant B, Company B)

According to Participant B, it is essential to create the right environment for individual employees to make the connection between their personal commitment towards social or environmental issues and their work lives. In this regard, the participant listed a set of strategies that, from their experience, can effectively achieve the necessary conditions for change both on an individual and a wider organisational level. First, according to Participant B, it is about creating 'psychological safety in teams' (Participant B, Company B).

> '[...] that's a really important factor in encouraging people to try something new, which might be an innovation method, [...], sustainability, anything! And I have a couple of different thoughts on this. One, I think, is about giving people the capability. And then the second is [giving them] the opportunity or the feeling that it is okay to give it a go.' (Participant B, Company B)

Similarly, Participant B led an internal campaign to promote a change-oriented environment called 'small is beautiful', which aimed to communicate how trying something new does not mean radically transforming the old. Hence, Company B encourages employees to take the lead on small changes within their day-to-day tasks, with the belief that small incremental changes overall contribute to the achievement of the organisation's overall targets around sustainable innovation.

Another principle that can create the right conditions for sustainability transformation is about delivering in-house training for all staff members to make sure everyone can become an advocate and practitioner of the organisation's ethos on innovation and sustainability. For instance, Company B runs competitions and challenges that allow employees to practice their knowledge, skills and intrinsic motivation. These are entirely voluntary, leaving the individuals free to decide whether they want to learn new methods or ways of working.

> '[...] giving people the environment to learn, that is slightly removed from their day to day that, feels a bit safer to try something new [...]. It is not to do with your daily client engagement, so it feels like less risky, even though [these experiences] are still about addressing real problems and you use those [learning experiences] as ways to practice new innovation methods.' (Participant B, Company B)

The most recent in-house training programme launched by Company B consisted of a set of short, interactive online modules on sustainability, which were distributed to all employees via their digital communication system. At the time of writing, the online course was still being tested across the organisation to understand which approaches are most effective to reach an organisation-wide fluency on sustainability.

> '[...] not everybody needs to be the world's greatest expert in hydrogen or carbon capture storage, but everybody needs to gain the general awareness or fluency level, and

that is what this sustainability quotient training programme is all about. The first couple of modules have just been launched, and the rest will continue to get built out over the course of the next year.' (Participant B, Company B)

Finally, Participant B mentioned that the change successfully permeates when it 'radiates from the middle' of the company. In the interviewee's experience, change needs to be accelerated by middle managers by initiating or acting upon practical initiatives within the company. Although to get middle managers involved, the top leadership also needs to be providing clear examples of what sparking change within an organisation means on a day-to-day basis.

'As an example, when J. became the new CEO of [Company B], one of the things she did was she launched her own learning board, and she said, "I am going to learn a new topic every quarter". It is really powerful to say, "I am the CEO, and I need to educate myself". There is a bit of vulnerability in that she is not the expert of all these things [...]. In a company like [B], you constantly need to be learning new things to keep your skillset relevant. [Change] radiates from the middle and in our company, that's made of practice leads, and department leads [...] or, depending on the scale of the

Figure 3. Company B's overview.

Case study #2	Company B
Sector	Management consulting
Year founded	1989
Number of employees	10,000
Organisational culture	Company B's culture is characterised by a continuous learning approach and growth mindset which values innovation and sustainability in all aspects of its work.
Key findings on the development of EDSI	• Co-creating sustainability practices, strategies or policies with employees might help them connect their personal values with their day-to-day work life, thus favouring EDSI • Creating a safe environment that allows employees to implement small changes might encourage EDSI; • Providing in-house training and challenges might encourage innovative behaviour in employees by ensuring they each embody corporate goals and methods while being able to pursue their personal values and interests; • Ensuring middle management facilitates and acts on employee-driven initiatives might enable EDSI.

company, [...] those who are making decisions around performance and promotions for their cohort of people. That is a powerful driver of change because employees listen to those people [...], and so if you can invest the time in engaging that kind of group of leaders, then actually, the rest starts to snowball. And you have created that spark that starts to take care of itself.' (Participant B, Company B)

As a director of a company founded upon continuous learning and growth mindset and which values innovation and sustainability in all aspects of its work, Participant B provided key organisational design and strategy insights applied by their organisation to spark change from the bottom-up. Such findings resonate with the previously mentioned idea that EDI often needs different levels of leadership involvement to be nurtured, receive the necessary buy-in and scale within an organisation. Overall, amongst Participant B's key contributions, we have observed: 1) the importance of co-creating sustainability practices, strategies or policies with employees to help them connect their personal values with their day-to-day work life; 2) the need to create a safe environment that promotes employees' suggestion and implementation of changes (how small or big they might be); 3) how providing in-house training and challenges might build confidence in employees by ensuring they each embody corporate goals and methods while being able to pursue their personal values and interests; 5) the importance of middle management engagement to facilitate and foster employee-driven initiatives.

4.3 THE MACRO LEVEL: HOW INVESTING IN PEOPLE CAN CONTRIBUTE TO A SECTOR-WIDE SUSTAINABILITY TRANSITION

After having learned about individual and organisational experiences of harnessing change for sustainability, this section will showcase how EDSI might take place at the sector level, particularly within the construction industry (Fig. 5). Accounting for almost half of the UK's total carbon emissions (Environment Agency, 2021), the construction sector will have to undergo a major transformation to reach net-zero by 2050. To understand how the sector can harness bottom-up, employee-driven innovation, Company C was selected for the study as it leads transformational change across the construction industry by linking businesses, academics, the public sector and other key actors. When asked about the overall culture of the construction sector, Participant C, who is the Director of Operations and Future Skill at Company C, mentioned that there is a general lack of awareness of the potential of digital and environmental innovation.

'The construction sector has been an industry which has been resistant to change for some time. [...] And that's particularly interesting because it is an industry that underpins much of what we do, whether the homes that we live in or the infrastructure that we travel through, our hospitals and schools and all of those assets that shape our lives.' (Participant C, Company C)

Despite this, Participant C stated that the last couple of years had accelerated the pace of change within the industry, particularly through a stronger level of coordination between key players in the field.

'We had this perfect storm of the UK's exit from the EU, which exacerbated the supply chain's access to material and skilled labour; we had the pandemic which impacted the industry ability to deliver; then we had climate change which is driving change at a pace that I have never seen before in my life especially in those legislative and investment changes that we know the industry responds so well to. For the first time in a long time, I see the industry's leadership, investment and policymaking levels being are coordinated.' (Participant C,

Company C)

In terms of sustainable transformation, Participant C stated that the construction industry is focusing on innovating three main areas: process (making the process of building infrastructure more circular); product (using locally sourced and low-carbon materials); performance (making sure the assets are energy-efficient); and policy (putting in place the right regulations and incentives). Nevertheless, participant C believes that the strongest transformation, driven by a greater awareness of social and environmental issues, is coming from young entrepreneurs:

> '[They] are certainly more aware of what tools can be used to improve productivity and improve quality [of work] and reduce carbon footprint. [...] There are absolutely examples of where young entrepreneurs are coming through the academic system and are creating new sustainable products and materials [...]' (Participant C, Company C)

To support young voices across the industry, Company C has started a forum of twelve, under fifty innovation champions who 'see the opportunity to transform our built environment' (Participant C, Company C).

The innovation champions are assigned a budget that they have full control over. The cohort also has possessions in Company C's main board as well as in their national construction leadership forum. In such a way, the innovation champions 'are genuinely impacting change right across the industry' (Participant C, Company C). According to Company C, the investment in people is the main driver of transformation. Participant C stated that such an approach should permeate across all levels

Figure 4. Company C's overview.

Case study #3	Company C
Sector	Construction
Year founded	2014
Number of employees	50
Organisational culture	Company C values collaboration and decentralised decision making to promote transformative change across the industry.
Key findings on the development of EDSI	• EDSI might require the involvement of multiple actors and leaders across the system to create a substantial ST; • Training might be essential to provide workers with the knowledge and skills to formalise and scale environmental behaviour and help them adapt to changes in the industry; • Investing in early-career leaders and/or innovation champions might be key to scale sustainability innovation within the industry from the bottom-up.

of the sector, from providing a platform to early-career leaders, as with the innovation champions programme, to ensuring construction workers are given the tools and skills to adapt and contribute to such a rapidly changing sector.

> 'We are not going to make this transition unless there is a significant investment in operatives, in technicians, in professions right through the industry. That does not mean putting lots of people on qualifications and colleges and universities, but it means that everyone operating in the built environment has the opportunity to access, experience and be exposed to what good practice looks like [...].' (Participant C, Company C)

In this regard, another Company C's key endeavour for supporting innovation across the sector is about delivering 'training and adult learning to push for more sustainable practices' (Participant C, Company C) across the industry. For instance, their custom-made modules on retrofitting practices are designed for workers who are at risk of redundancy or solely want to upskill in low carbon construction. They are delivered both online and on-site to answer workers' needs.

> 'I think we need to demonstrate that we are an industry that is committed to supporting a balance between work life and home life. [...] And an investment in people, in that culture of inclusivity, in ensuring the work practices are designed in such a way they actively remove barriers that people in general face.' (Participant C, Company C)

In summary, Company C demonstrated strong values for collaboration and decentralised decision-making to promote transformative change across the industry. Its efforts to ignite a sustainability transition within the construction sector resonate with EDSI because they are designed to propel from the bottom and focus on empowering people. As shown, such bottom-up efforts are targeted to 1) early-career leaders (or innovation champions) by providing them with a platform and the resources needed to carry sustainable initiatives; and 2) ordinary workers by providing them with the knowledge and skills to formalise and scale green behaviour in the industry. Once again, we have been presented with a reality of EDI that, despite not reflecting the traditional processes described in the literature, is characterised by different scales of leadership involvement, demonstrating that sustainability transitions might have to be initiated from multiple levels across the system and involve those actors closest to the grounds to be implemented substantially.

5. DISCUSSIONS

In answering the research question, this dissertation has aimed to develop two key contributions. Firstly, it has aimed to build a theoretical understanding of how employee-driven innovation might contribute to organisational sustainability transitions. By analysing existing literature, the study has thus provided a multidisciplinary understanding of employee-driven innovation for organisational sustainability transition, which we referred to as 'employee-driven sustainability innovation' (EDSI) throughout the paper. The study concluded that EDSI could provide organisations with greater resilience against rapid and complex market changes by tapping into their employees' innovative potential and creating organisational cultures that promote continuous learning as well as innovative and intrapreneurial behaviours (for instance, see Høyrup, 2012; Miao and Ji, 2020; Buhl et al. 2016 and Hartmann, 1997). Secondly, it set out to understand what factors or processes can initiate EDI processes for organisational sustainability transitions. Based on the literature, the study has firstly proposed two key principles – building an intrapreneurial fabric and delivering learning programmes – that have been recognised by scholars as enablers of EDI processes (see, for instance, Weisnburger et al. 2018; Ciocirlan, 2018; Evans and Kivell, 2015; Van Poeck et al., 2018 and van Mierlo et al., 2020). Finally, to corroborate such principles, the study has provided further qualitative empirical insights drawing from the direct experience of three individuals working in three separate organisations operating in the field of innovation – technology, management consulting and construction. Having run three separate semi-structured interviews with these organisations' representatives, we have identified a set of further multi-level insights, which showed different understandings of EDSI from an individual, organisational, and sector-wide perspective.

In this section, we will further analyse the findings firstly by setting out the limitations of the study, then by showing how the primary research findings support the two enabling principles identified in the literature review and, finally, by proposing a framework for the application of EDSI (Fig. 6) through a triangulation of the primary and secondary findings.

5.1 RESEARCH LIMITATIONS

Whilst the qualitative research findings presented in the previous section enriched the study's comprehensive exploration of how EDI might be harnessed for organisational sustainability transitions, the findings and their collection process were also characterised by a few limitations. Firstly, the observations gathered on all the three organisations that participated in this study were provided by only one employee each. The small sample prevented the study from 'zoom[ing] into the organisational structures and cultures of the participating companies and compare the prerequisites for employee participation and involvement in detail' (Sübauer et al., 2019, p. 215). Due to the current remote working policies because of the covid-19 pandemic, the study also did not benefit from direct observations in the participating organisations' offices which could have provided more depth to the analysis. Secondly, the method used for the sample collection also presented its limits. As mentioned, the study only benefited from a small pool of potential participants by applying a purposive sampling (Dudovskiy, n.d.) approach and relying on immediate connections in the industry. Therefore, having built the primary research and gathered the data through a rather explorative and incremental way (Eisenhardt, 1998) certainly impacted the size of the sample. This limitation mostly arose from relying on the completion of each interview

and the collection of new findings to determine the further direction of the primary research. A larger sample size and a more complex and strategic data collection approach (e.g., including employee surveys, focus groups or on-site observations) might have therefore generated further and more reliable findings, allowing for broader generalisations at the individual, organisational level and sector levels. Thirdly, the case studies presented in the paper do not represent robust examples of successful EDSI processes from start to finish. Instead, they rather showcase a collection of individuals' lived experiences regarding what can enable employee-driven innovation processes for sustainability transitions. Such an absence of examples could be linked on the one end on the scarce empirical evidence on how employee-driven innovation develops (Ben et al. 2015; Yuriev et al. 2019; Paillé and Valèau, 2021), and on the other hand, to the complexity of defining and assessing sustainability transitions (Delmas et al., 2013 in Meijia and Balanzo, 2018; Plummer and Van Poeck, 202). Despite this, it is important to note that the intent of the research is not that of proving whether EDSI can lead to a successful sustainability transition. Instead, we chose to focus the research on understanding what might inhibit EDSI in the context of organisational sustainability transitions.

Despite the small sample size, the data collection methods utilised and the lack of stronger EDSI case studies, we believe the findings have still been able to show an interesting alignment with the theoretical foundation formulated in the literature review. They have also added a more nuanced understanding of EDSI as an innovation process requiring both top-down and bottom-up efforts. Finally, our findings have shown a variety of tools and mechanisms needed to initiate EDI practices within organisational contexts, drawing from individuals' direct experience and ranging from a multi-level understanding of the phenomenon. Based on these considerations, in the next section, the study's findings will be further conceptualised by positioning them against the existing research and proposing a framework to initiate EDSI (Fig. 6).

5.2 A FRAMEWORK FOR EMPLOYEE-DRIVEN SUSTAINABILITY INNOVATION

The presented findings have shown an interesting tension between the scholarly definition of EDI (see, for example, Howard, 1990) and its practical application for organisational sustainability transitions. If, on the one hand, EDI is 'claimed to cover purely bottom-up processes' (Brandi and Hasse, 2012 in Høyrup et al., eds., p. 127), on the other hand, our findings mostly show that such approach requires a broader set of specific organisational or industry-wide players, structures and environments to be initiated. Based on the primary research findings and drawing primarily from the work of Høyrup et al. (eds.), Bianchi et al. (2021) and Norton et al. (2015), this framework (Fig. 6) thus comprises of three levels: roles, tools and cultures. As roles, we identify the players needed to initiate EDSI, namely employees, managers and leaders. For instance, while employees are certainly the main drivers of EDI, managers and leaders can facilitate such a process by putting the right resources and tools in place. By tools, we understand those mechanisms that encourage EDI processes. These may comprise of 'several kinds of measures for information exchange, idea registration and evaluation, and improved collaboration' (Aasen et al., 2012 in Høyrup et al., eds., p. 62). Finally, cultures signify a set of 'shared networks of meaning or basic assumptions guiding people into certain patterns of thought' within an organisation (Aasen et al., 2012 in Høyrup et al., eds., p. 62). They are influenced by the roles played by various organisational actors and their use of different innovation tools or methods. The combination of these three elements is assumed here to provide individuals with the right 'sustainability empowerment' (Harrach et al., 2020) needed to initiate an employee-driven innovation. Such a sense of empowerment comprises of an individual's green identity, their ability to utilise their green creativity within their workplace, the resources and skills to apply it, and the perceived level of influence on their company's sustainability

strategy (see Harrach et al., 2020, Bianchi et al., 2021 and Norton et al., 2015).

5.2.1 ROLES

As largely discussed in this paper, employees are central to the process of employee-driven sustainability innovation. Nevertheless, the findings gathered from all three case studies indicate how initiating and scaling EDSI also requires the involvement of other organisational actors, such as managers and leaders. For instance, Participant B described how middle managers could spark organisational change by acting on employees' initiatives and making daily decisions that impact the organisation's performance. In this regard, Aasen et al. (2012) specifically report that 'the working manager (i.e., foreman, group leader, middle manager, etc. [sic]) is the one closest to the daily operations, and therefore the one having everyday responsibility for capturing ideas and suggestions for improvement' (in Høyrup et al., eds., p. 63). Participant B also stated the importance of leading by example – mentioning their CEO's establishment of a learning board and commitment to developing a new skill every quarter. Such a finding is echoed by Cheng and Groysberg (2021), who state that leading by example and taking time to develop new skills is key to foster a 'learning-centric culture'. Similarly, according to Arenas et al. (2011), 'one of the earliest and most important challenges for implementing new strategies is to educate the company's executives to understand, adopt and apply the sustainability concept' (in Muja et al., 2014. p. 309). Hence, whilst securing a commitment from the top is key, ensuring a substantial behaviour change in the leadership also requires them to learn continuously. Overall, as Ciocirlan argues (2018), for employees to 'own' sustainability innovation, managers and leaders must create an environment that invites 'all organisational levels [to] be involved in designing, implementing and supporting sustainability efforts' (p. 46). Equally, Amabile and Pratt (2016) state that 'creativity is affected by the highest levels of leadership, through the strategies they set, the structures and policies they establish, and the values they communicate' (p. 160). An interesting debate is also brought forward by Axtel (2000), who separates between the suggestion and implementation of ideas (in Brandi and Hasse, 2012 in Høyrup et al., eds., p. 130). Whilst the suggestion of ideas might be related to an employee's green identity (such as in the case of Participant A), the implementation of a sustainable initiative, as discussed by Participant B, is ultimately facilitated by the management and the organisational tools and processes they put in place.

In reference to our macro level of analysis, Participant C also contributed to show the importance of leaders in enabling EDSI. For instance, Company C's work with innovation champions represents an attempt to actively shape the sector through a bottom-up approach. As discussed in the findings section (see chapter 4), their innovation champions project provides emerging leaders and entrepreneurs with further resources to promote sustainable products, practices and processes. Such an approach is instrumental in initiating EDI at the organisation level. Ultimately, 'employees look to organisational leaders to figure out what is important and hold executives accountable for their actions' (DuBois et al. 2013 in Ciocirlan, 2018, p. 46). Participant A also hinted that a company's lack of a strong sustainability agenda might negatively influence their employees' ability to get involved in or contribute to their workplace 'greening' innovatively. Further evidence demonstrates that 'when employees are aware of a published corporate environmental policy [...], they are more likely to design and implement eco-initiatives in their area of activity' (Ramus and Steger, 2000 in Ciocirlan, 2018, p. 46). Therefore, as both the literature and our findings show, to create a sustainability transition – both at the company and sector level – investing in leaders who show support for sustainability innovation might result in a workforce more willing to engage with and drive forward sustainability innovation from the bottom-up. Altogether, such evidence indicates how the roles of managers and leaders actively contribute to creating a sense of sustainability empowerment in employees by distributing decision making processes and providing a culture of creativity and learning (see sections 2.4.1 and 2.4.2 of the literature review).

5.2.2 TOOLS

The research findings have also provided insights into the organisational tools or strategies needed to create the necessary conditions to initiate EDSI. Overall, our findings suggest that, by empowering each organisational actor to ideate and adopt sustainability practices within their workplaces, a transformative approach to employee participation is needed to achieve a substantial sustainability transition at the company level. As discussed by Participant B, co-creating sustainability policies or strategies with employees can provide several advantages. Firstly, engaging employees in the early stages of the design of new policies or practices might ensure their efficient implementation by reflecting employees' capacities, needs and challenges (NBS, 2010). For instance, Markey et al.'s study on employee participation in climate mitigation activities in Australian workplaces signals that 'the sectors where the greatest degree of activities to reduce carbon emissions occurred all practiced [sic] more substantial degrees of employee participation' (2016, p. 187). The need for direct participation and engagement is also vastly argued by Ciocirlan (2018). In their articles, the scholar describes how practical tools such as 'suggestion programmes, team meetings, employee surveys, quality circles, conferences, company intranet, or self-autonomous teams' (Ciocirlan, 2018, p. 47) can positively impact the employee-driven processes. Yuriev et al. (2021) also provide a 'non-exhaustive list of practices' which have proven to be effective to co-create sustainability agendas. These include, for example, 'recognition of new green initiatives (Ramus 2002; Pinzone et al. 2016), providing feedback on employee's pro-environmental ideas (Chou 2014), and detailed explanations of specific desired behaviours (Lo, Peters, and Kok 2012)' (Yuriev et al., 2021).

Interestingly, Paillé and Valéau's survey of 384 employees (2021) show that when a company's sustainability policy is implemented from the top, merely in response to compulsory regulations (such as governmental policies or market sanctions), employees are less willing to contribute to it as they might not 'believe that their employer develops supportive environmental actions reflecting genuine environmental concerns' (p. 128). Secondly, as reported by Participant B, co-creation activities might allow employees to close the gap between employees' green identities and how these might positively influence or translate into their work routines. As largely discussed, achieving such a 'green work-life balance' (Muster and Schrader, 2011) calls for active participation and employee engagement across all levels of the organisation. Finally, engaging with the design of new ways of working provides employees with experiential learning opportunities, which, as demonstrated in the literature review, is essential within organisational sustainability transitions as it allows individuals to see the 'connections between different aspects of their work and lives' (Jones and Hendry, 1994, p. 159). Hence, by encouraging employees to carry their sustainability values, attitudes and behaviours into their workplace, organisations can ensure a stronger, more substantial adoption of sustainability innovations and policies (see Muster and Schrader, 2011; Chen and Chang, 2013; Buhl et al., 2016; Craig, 2018; Wells et al., 2018; NBS, 2010). In such a way, as indicated by the literature and primary findings, we can suppose that providing employees with the resources and opportunities to shape their organisation's response to sustainability challenges actively and independently might enhance their sustainability empowerment.

Another tool or strategy provided by our findings is about providing employees with opportunities to build new capacities and put them into practice within organisational contexts. As a learning organisation, Company B dedicates resources to raise their staff's level of awareness around key labour market challenges and encourages employees to actively shape their workplace by proposing new initiatives, projects or ways of working through regular organisational competitions or challenges. As shown in this paper, creating opportunities for continuous learning to boost innovation has vastly been studied in the literature (see Evans and Kivell, 2015; Van Poerck et al., 2018; Lundkvist, and Gustavsson, 2018 and van Mierlo et al., 2020 amongst others). For instance, the Network for Business Sustainability's (2010) systematic review of sustainability

organisational cultures reported how organisations 'can spur innovation by allowing employees the autonomy to solve environmental problems in their own way (Angel del Brio et al., 2008) and by leaving flexibility for implementation of sustainability objectives (Siebenhüner & Arnold, 2007)' (p. 43). This approach has been shown in both Company B and C's efforts to deliver bespoke, green training to their employees to empower them with the skills needed to navigate the current labour market's sustainability challenges. At last, transforming the workplace into a learning environment has shown to promote employees' innovative behaviours by encouraging the development of new knowledge and skills and embedding more explorative processes of reflection and employee interaction (van Mierlo et al., 2020; Scholz and Methner 2019).

5.2.3 CULTURES

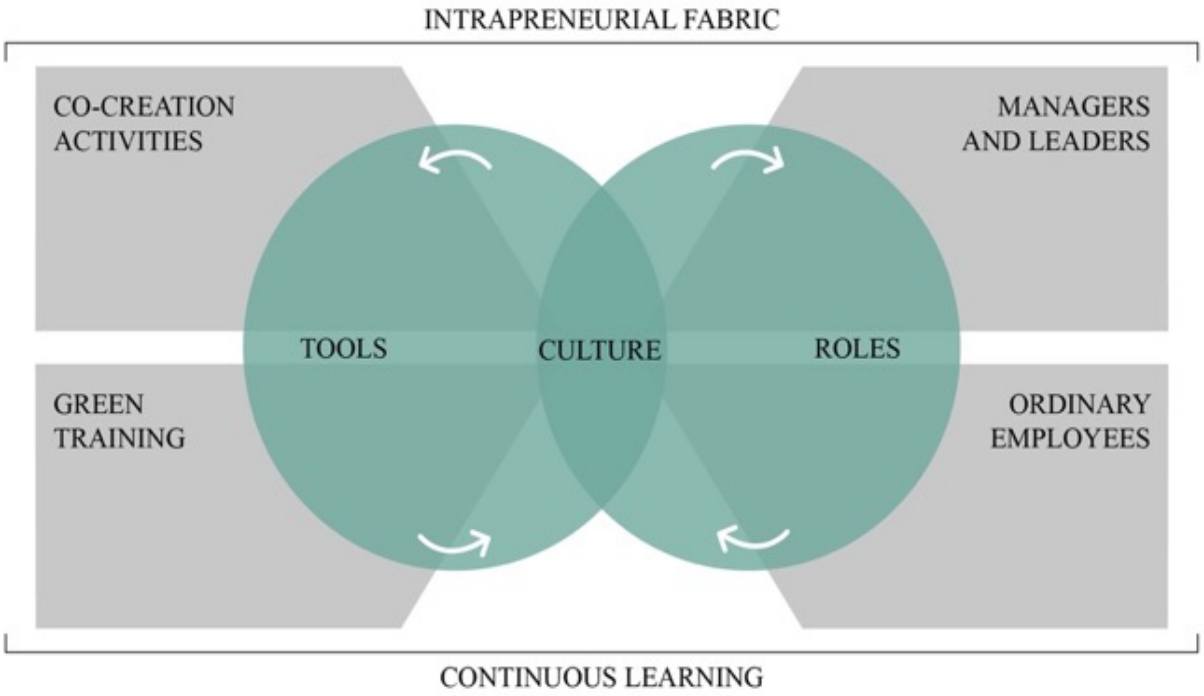
As discussed in this paper, an organisation's response to external labour market challenges depends on its 'self-understanding' (Tsoukas and Chia, 2002, p. 578). In other words, it depends on the sum of values, attitudes, beliefs and identities that people carry into their workplace and that altogether make up an organisation's culture. An organisation's culture is thus what guides an organisation's decisions and activities and what shapes potential sustainability behaviours (Norton et al., 2015). Whilst each organisation's culture is different, Cheng and Groysberg (2021) define them 'along two dimensions: how individuals respond to change [...]; and how individuals interact'. Hence, the performance of different organisational roles and their adoption of different tools will tend to shape the cultural characteristics of an organisation (Aesen et al., 2012 in Høyrup et al., eds, p. 67).

As shown in the first part of our framework (5.2.1), the support of leadership and management positions is essential to enable and scale EDSI processes within organisations. Such a necessary involvement is bound to influence the adoption of organisational tools and processes, as described in the paragraph above (5.2.2). Therefore, according to the literature and our primary findings, we could presume that the more an organisation is characterised by decentralised leadership and distributed decision-making (as theorised in the literature review), the more innovative tools might be devised to encourage co-creation, continuous learning and innovative behaviours. In each of the presented case studies (see chapter 4), such a dynamic has been shown to contribute to a culture that values collaboration, decentralised innovation and continuous learning. In other words, the participating organisations have each presented a 'learning-oriented culture' which 'emphasise[s] flexibility, open-mindedness, and exploration' (Cheng and Groysberg, 2021). According to the presented literature, this cultural orientation has been proven to provide the participating organisations with greater resilience and the ability to innovate within uncertain business settings (Cheng and Groysberg, 2021). For instance, Company B has shown a commitment to allocate tools, resources and processes to place employees' sustainability capacities, attitudes and behaviours at the centre of innovation and change processes, hence investing in their employees' ability to respond to change collaboratively. This commitment was also found in Company C, particularly with Participant C stating that organisations who effectively want to transition to a sustainable labour market must invest in their people. Whilst there seem to be external pressures to drive sustainability innovation through prioritising company standards or market incentives, our findings have instead highlighted how building a strong people-oriented culture, which values collaboration and learning, might be 'yet another tool to improve and enhance innovation' (Brandl and Hasse, 2012 in Høyrup et al., eds, p. 133) for sustainability transitions.

The core driver of organisational sustainability transition ultimately lies in creating culture changes – 'a change in the basic values of the organization [sic] and in the hearts and minds of the individual employees' (Muja et al., 2014, p. 254). As our case studies demonstrated, investing in people's development and creativity and 'improving an organisation's self-renewal process so that managers can quickly initiate changes to the corporate culture to meet emerging new problems' is fundamental to prompt transitions in a bottom-up fashion (Muja et al., 2014, p. 254). In summary, our

findings displayed how specific organisational tools – such as co-creating activities and green training – can influence how employees perform in their roles by supporting their involvement in innovation processes. If provided with the right tools, we have shown how employees might ultimately be able to improve their organisation's innovation capacity and encourage cultural orientations that favour innovation, learning and sustainability (Aesen, 2012 in Høyrup et al., eds).

Figure 2. A framework for employee-driven sustainability innovation. By building on Aasen et al.'s framework (2012 in Høyrup et al., eds) we provide a framework that showcases how the presence of an intrapreneurial, and continuous learning culture can inhibit EDSI by allocating resources for innovation, fostering a sense of distributed decision-making and formalise employees' intrinsic motivation towards sustainability. In specific we present the key enabling tools found through this research (co-creation activities and green training) and the key players (leaders, managers and ordinary employees).



6. CONCLUSION

This dissertation has explored how employee-driven innovation can be harnessed for organisational sustainability transitions. We have first begun answering this study's research question by tapping into a diverse pool of literature in an explorative way, building upon organisational change and learning, transition management and sustainability transition theory, environmental management and human resources to understand how employee-driven innovation contributes to sustainability transitions. Having developed a foundation on EDSI's role within organisational sustainability transitions, we have zoomed into what factors, mechanisms, or processes contribute to its development within organisational contexts which might be prompted to change due to either external (such as governmental regulations and market incentives) or internal pressures (such as changes in leadership, employees' intrinsic motivation and values). While the study comprised of a very small sample that limited the generalisability of the results and did not look at completed employee-driven sustainability transitions at the company level, the triangulation of our secondary and primary findings provided valuable insights into the key ingredients needed to enable EDSI processes. Having started from two key theoretical conditions – namely, building an intrapreneurial fabric and delivering learning programmes (see section 2.4) – we thus have collected a set of practical and experienced-based strategies from the lived experience of our research participants. We have presented the case studies through a multilevel approach, showcasing the implications of developing EDSI from an individual, organisational, and sector-wide perspective. These approaches (as described in chapter 4 and 5) have provided further insights into the literature analysed at the beginning of the paper. Furthermore, with our research participants suggesting the need for co-creation sessions and direct employee participation, continuous learning and green training and the importance of leadership involvement and support, these strategies have strongly resonated with the conditions proposed at the end of our literature review. In the previous chapter, we have thus been able to group the secondary and primary findings in a proposed framework for the development of EDSI. Such framework – comprising of roles, tools and cultures needed to enable EDSI – proposes a nuanced understanding of the employee-driven innovation method by posing attention to the different power relations (i.e., the players needed for EDSI to unfold and how they interact) and the mechanisms and conditions (i.e., how much players can devise tools and promote cultures in support to EDSI) needed to inhibit it.

Through the proposed framework, we thus hope to have made three key contributions to the existing literature. Far from assuming that bottom-up innovation should be left to individuals to figure out for themselves, in this paper, we have suggested that actualising employees' ability to lead change from within their organisations requires coordinated efforts from an organisational design and culture point of view (see section 5.2.1). In the process of building a 'green learning organisations' (that is, one with a strong culture of continuous learning and sustainability), our findings have clearly illustrated the importance of leaders and managers in providing employees with the tools to manifest their intrinsic motivation and values into their work routines. We started the study with the presumption that we can no longer afford to ignite transformative change every time a new crisis unfolds. Hence, by placing emphasis on distributed decision-making, experimentation and learning, throughout the paper we inexplicitly advocated for a type of leadership that responds to sustainability challenges proactively and in the interest of growing their employees into sustainability innovators rather than in reaction to external pressures.

Nevertheless, organisational cultures are not made solely by leaders. Instead, this study showed that cultures are fostered by each organisational actor, their interaction with each other and the set of beliefs, assumptions and behaviours they carry into the workplace. While highlighting the essential role of leadership, this research has ultimately contributed to emphasising the importance of investing in people's capabilities and values to cope with rapid and complex changes. Throughout the paper, we addressed how the implementation of EDSI ultimately requires a series of 'collective sense-making processes to transform the organizational culture' (Arevalo et al., 2011 in Muja et al., 2014, p. 312) through direct participation and opportunities for professional and personal growth. As we repeatedly addressed in the dissertation, 'integrating sustainability concerns into an organization's internal culture requires 'change agents' (both managers and employees), who are expected to take an active role in expanding the organization's cultural repertoire' (Yuriev et al., 2021, p. 20). Therefore, by analysing what initiates EDSI within organisational contexts, we have advocated how seeing employees as key drivers of sustainability innovation means understanding them as 'critical stakeholders' who can substantially lead the company mission and purpose. Finally, a less clear contribution that we attempted to make through this study concerns with organisational resilience and adaptability (see Folke et al., 2010). Despite the limitations encountered in this study (see section 5.1 in chapter 5), through the provided literature and gathered findings, we were still able to demonstrate how EDSI can provide organisations with opportunities of constant renewal by adopting continuous learning and tapping into their employees' capabilities, intrinsic motivation and innovative potential, thus enhancing their ability to reconfigure available resources in response to ever-transforming sustainability challenges.

These reflections bring us to explore the opportunities for further research. To fortify and better understand the implications of the presented study, future studies could address the here proposed strategies and framework by zooming closer into organisational structures and dynamics, conducting direct observations into employees' interactions, teams and organisational cultures. Furthermore, a stronger typology of EDSI might be needed to differentiate between voluntary, guided and compulsory employee-driven initiatives, unpack the motivational inhibitors and constraints at the individual level and further conceptualise the organisational strategies and processes needed to develop such an innovation method. As sustainability is gaining momentum across sectors, further research might also be useful to better understand the relationship between EDSI and STs, perhaps by investigating how the former can be implemented as an assessment tool for the latter. To do so, future projects could benefit from implementing a case study approach for further examining and comparing successful and 'less successful' employee-driven sustainability innovations (NBS, 2010; Yuriev et al., 2021).

In conclusion, by exploring the employee-driven innovation method within the realm of sustainability transitions, we ultimately hope to have provided the foundations for a deeper investigation into more inclusive, adaptive and resilient organisations and how these might be better suited to respond to social and environmental challenges. On the one hand, in fact, we have presented EDSI as an opportunity to peel away restrictive organisational structures and give space to more adaptive and agile ways of working that focus on people, their personal and professional talents and growth. On the other hand, we have showcased its ability to propel innovative initiatives and responses from across all levels of an organisation, breaking through confining organisational structures and letting undiscovered skills and talent emerge. Therefore, as shown in the here proposed framework, we believe that organisations can harness employee-driven innovation to prompt sustainability transitions through a harmonious combination of different players and tools, promoting decentralised decision-making and continuous learning and thus contributing to employees having a stronger green work-life balance. As a result of such interaction of strategies and roles, we hope to have shown how employee-driven sustainability innovation can thus prompt a culture that can provide employees with

the seeds to grow meaningful change from the inside out, slowly contributing to building a green learning organisation.

BIBLIOGRAPHY

McWhirter, S. (2021). Activating the UK's green industrial revolution. Innovate UK. [online] Available at: <https://innovateuk.blog.gov.uk/2021/01/19/activating-the-uks-green-industrial-revolution/> [Accessed 20th August 2021]

Amabile, T. M. and Kramer, S. (2012). How leaders kill meaning at work. McKinsey Quarterly. [online] Available at: <https://www.mckinsey.com/featured-insights/leadership/how-leaders-kill-meaning-at-work#> [Accessed on 15th June 2021]

Amabile, T. M. and Pratt, M. G. (2016). The dynamic componential model of creativity and innovation in organizations: Making progress, making meaning. Research in Organizational Behavior 36, pp. 157-183. doi: 10.1016/j.riob.2016.10.001

Ashkenas, R. (2015). We still don't know the difference between change and transformation. Harvard Business Review. [online] Available at: <https://hbr.org/2015/01/we-still-dont-know-the-difference-between-change-and-transformation#> [Accessed on 30th March 2021]

Beard, C. and Hartmann, R. (1997). Naturally enterprising – eco-design, creative thinking and the greening of business products. European Business Review. 97 (5), pp. 237-243. doi: 10.1108/09555349710179852

Benn, S., Teo, S. T. T. and Martin, A. (2015) Employee participation and engagement in working for the environment. Personnel Review 44(4). pp. 492-510. doi: 10.1108/PR-10-2013-0179

Bianchi, G., Testa, F., Boiral, O. and Iraldo, F. (2021). Organizational Learning for

Environmental Sustainability: Internalizing Lifecycle Management. Organisation & Environment. Organization & Environment, p.1–27. doi: 10.1177/1086026621998744

Bodenheimer, M. and Leidenberger, J. (2020). COVID-19 as a window of opportunity for sustainability transitions? Narratives and communication strategies beyond the pandemic. Sustainability: Science, Practice and Policy, 16, pp. 61-66. doi: 10.1080/15487733.2020.1766318

Boiral, O. (2002). Tacit Knowledge and Environmental Management. Long Range Planning 35(3), pp. 291-217. doi: 10.1016/S0024-6301(02)00047-X

Boiral, O. (2009), Greening the Corporation Through Organisational Citizenship Behaviour. Journal of Business Ethics. 87, pp. 221–236. doi: 10.1007/s10551-008-9881-2

Bolton, R. and Hannon, M. (2014). Governing sustainability transition through business model innovation: Towards a system understanding. Research Policy. 45, pp. 1731-1742. doi: 10.1016/j.respol.2016.05.003

Buhl, A., Blazejewski, S. and Dittmer, F. (2016) The More, the Merrier: Why and How Employee-Driven Eco-Innovation Enhances Environmental and Competitive Advantage. Sustainability 8(946), pp. 1-17. doi:10.3390/su8090946

Chen, Y. S., Chang, C. H. (2013). The Determinants of Green Product Development Performance: Green Dynamic Capabilities, Green Transformational Leadership, and Green Creativity. J Bus Ethics 116, 107–119. doi: 10.1007/s10551-012-1452-x

Chen, Y. S., Chang, C. Yeh, S. and Cheng, H. (2015). Green shared vision and green creativity: the mediation roles of green mindfulness and green self-efficacy. Qual Quant. 49 (3), pp. 1169-1184. doi: 10.1007/s11135-014-0041-8

Cheng, Y. J. and Groysberg, B. (2021). Research: What

Inclusive Companies Have in Common. Harvard Business Review. [online] Available at: <https://hbr.org/2021/06/research-what-inclusive-companies-have-in-common> [Accessed on 12th August 2021]

Ciocirlan, C. E. (2017). Environmental Workplace Behaviors: Definition Matters. Organisation & Environment 30 (1), pp. 51-70. doi: 10.1177/1086026615628036

Ciocirlan, C. E. (2018). Green human resources management in Wells, V. Gregory-Smith, D. and Manika, D. (2018). Research Handbook on Employee Pro-Environmental Behaviour. pp. 30-60. doi: 10.4337/9781786432834.00008

Craig, W. (2018). The Importance Of Creating Sustainable Employees In The Workplace. Forbes. [online] Available at: <https://www.forbes.com/sites/williamcraig/2018/06/19/the-importance-of-creating-sustainable-employees-in-the-workplace/?sh=ff82f07285cc> [Accessed on 15th June 2021]

Coakes, E. W., Smith, P. A. C. and Alwis, D. (2011). Sustainable Innovation and Right to Market, Information Systems Management, 28(1), pp. 30-42, doi: 10.1080/10580530.2011.536110

Cohen, J., James, S. and Blewitt, J., 2002. Learning to last: Skills, sustainability, and strategy. 1st ed. Learning and Skills Development Agency.

Colley, J. L., Doyle, J. L., Hardie, R. D., Logan, G. W. and Stettinius, W. (2007). Learning and Innovation. In Principles of General Management. The Art and Science of Getting Results Across Organizational Boundaries. Yale University Press. 6 (6), pp. 249-256. doi: 10.1108/ICT-02-2013-0007

Delmas, A., Lyon, T. P., Maxwell, J. W. (2019). Understanding the Role of the Corporation in Sustainability Transitions. Organization & Environment, 32(2). pp. 87-97. doi: 10.1177/1086026619848255

Didham, R. J., Ofei-Manu, P. and Nagareo, M. (2017). Social learning as a key factor in sustainability transitions: The case of Okayama City. International Review of Education 63(6), pp. 829-846. doi: 10.1007/sl 1 159-017-9682-x

DuBois, C.L., M.N. Astakhova, and D.A. DuBois (2013). Motivating behavior change to support organizational environmental sustainability goals. in A.H. Huffman, and S.R. Klein (eds), Green Organizations: Driving Change with IO Psychology, New York: Routledge, pp. 186–207.

Dudovskiy, J. (n.d.). Purposive sampling. Business Research Methodology. [online] Available at: <https://research-methodology.net/sampling-in-primary-data-collection/purposive-sampling/> [Accessed on 20th June 2021]

Duradoni, M. and Di Fabio, A. (2019). Intrapreneurial Self-Capital and Sustainable Innovative Behaviour within Organisations. Sustainability, 11 (322). pp. 1-10. doi: 10.3390/su11020322

Environment Agency (2021). Environment Agency: reaching net zero by 2030. The Environment Agency's road map for cutting carbon emissions and reaching net zero by 2030. Gov.uk. [online] Available at: <https://www.gov.uk/government/publications/environment-agency-reaching-net-zero-by-2030> [Accessed on 12th August 2021]

Evans, S. D. and Kivell, N. (2015). The transformation team: An enabling structure for organisational learning in action. Journal of Community Psychology. 43(6), pp. 760–777. doi: 10.1002/jcop.21756

Folke, C., Carpenter, S. R., Walker, B., Scheffer, M., Chapin, T., Rockström, J. (2010). Resilience Thinking: Integrating Resilience, Adaptability and Transformability. Ecology and Society 15(4): 20. [online] Available at: <http://www.ecologyandsociety.org/vol15/iss4/art20/> [Accessed on 19th April 2021]

Gov.uk. (2020). UK government launches taskforce to support drive for 2 million green jobs by 2030. Gov.uk. [online] Available at: <https://www.gov.uk/government/news/uk-government-launches-taskforce-to-support-drive-for-2-million-green-jobs-by-2030> [Accessed on 20th June 2021]

Gov.uk. (2021). UK enshrines new target in law to

slash emissions by 78% by 2035. Gov.uk. [online] Available at: <https://www.gov.uk/government/news/uk-enshrines-new-target-in-law-to-slash-emissions-by-78-by-2035> [Accessed on 20th June 2021]

Grayson, D., Spitzeck, H., Alt, E. and McLaren, M. (2013). Creating Sustainable Business Through Social Intrapreneurism. Doughty Centre for Corporate Responsibility. Cranfield School of Management. [online] Available at: <https://www.academia.edu/12932280> [Accessed on 19th April 2021]

Tsoukas, H. and Chia, R. (2002) On Organizational Becoming: Rethinking Organizational Change. Organization Science, 13(5). pp. 567-582. doi: 10.1287/orsc.13.5.567.7810

Harrach, C., Geiger, S. and Schrader, U. (2020). Sustainability empowerment in the workplace: determinants and effects. Sustainability Management Forum. 28, pp. 93–107. doi: 10.1007/s00550-020-00505-1

Hastuti A. W., Noraini B., Abu Talib N. B. A., Wong. K. Y., Mardani, A. (2016). The Role of Intrapreneurship for Sustainable Innovation through Process Innovation in Small and Medium-sized Enterprises: A Conceptual Framework. International Journal of Economics and Financial Issues 6(S3). pp. 83-91.

Hoffman, A. J. (2018). The Next Phase of Business Sustainability. Stanford Social Innovation Review. [online] Available at: <https://ssir.org/articles/entry/the_next_phase_of_business_sustainability#> [Accessed on 30th March 2021]

Howard, R. (1990) The Learning Imperative. Managing People for Continuous Innovation. Harvard Business Review Press. pp. xiii-xxvi; 3-41; 217-277.

Høyrup (2010). Employee-driven innovation and workplace learning: basic concepts, approaches and themes. Transfer 16(2), pp. 143–154. doi: 10.1177/1024258910364102

Høyrup, S. (2012.), Employee-Driven Innovation: A New Phenomenon, Concept and Mode of Innovation in Høyrup S., Bonnafous-Boucher M., Hasse C., Lotz M., Møller K. (eds) Employee-Driven Innovation. Palgrave Macmillan, London. doi: 10.1057/9781137014764_1

International Labour Organisation (ILO). (2018). The Rana Plaza Accident and its aftermath

ILO.org. [online] Available at: <https://www.ilo.org/global/topics/geip/WCMS_614394/lang--en/index.htm> [Accessed on 18th April 2021]

Jones, A. M. and Hendry, C. (1994). The Learning Organisation: Adult Learning and Organisational Transformation. British Journal of Management 5(2), pp. 153-162. doi: 10.1111/j.1467-8551.1994.tb00075.x

Eisenhardt, K. M. (1989). Building Theories from Case Study Research. The Academy of Management Review 14(4), pp. 532-550. doi: 10.5465/amr.1989.4308385

Kerrigan, S. and Kulasooriya, D. (2020). The sustainability transformation: Look ahead, look inside, and look around. Deloitte Review, 27. pp. 1-20. [online] Available at: < https://www2.deloitte.com/us/en/insights/topics/strategy/sustainable-transformation-in-business.html> [Accessed on 10th April 2021]

Kuenkel, P. (2017). A patten approach to stewarding sustainability transformation. How the 17 SDGs can become a starting point for transformative change. Collective Leadership Institute, 12. pp. 27-32. [online] Available at: <http://wiki.collectiveleadership.com/images/c/c3/Collective_Leadership_Studies_Vol5_A_Pattern_Approach_to_Stewarding_Sustainability_Transformation.pdf> [Accessed on 19th May 2021]

Loobarch, D. and Wijsman, K. (2013). Business transition management: exploring a new role for business in sustainability transitions. Journal of Cleaner Production. 45, pp. 202-821. doi: 10.1016/j.jclepro.2012.11.002

Loobarch, D. and Rotmans J. (2006). Managing transitions for sustainable development. In Olshoorn, X. and Wieczorek, A. J. (2006). Understanding Industrial Transformation: Views from Different

Disciplines. pp. 187-206. doi: 10.1007/1-4020-4418-6_10

Lozano, R. (2014). Creativity and Organisational Learning as Means to Foster Sustainability. Sustainable Development 22 (3), pp. 205-216. doi: 10.1002/sd.540

Lundkvist, A. H. and Gustavsson, M. (2018). Conditions for Employee Learning and Innovation – Interweaving Competence Development Activities Provided by a Workplace Development Programme with Everyday Work Activities in SMEs. Vocations and Learning 11, pp. 45-63. doi: 10.1007/s12186-017-9179-6

Markey, R., McIvor J. and Wright, C. F. (2016). Employee participation and carbon emissions reduction in Australian workplaces. The International Journal of Human Resource Management 27(2), pp. 173-191, doi: 10.1080/09585192.2015.1045009

Markopoulos, E., Aggarwal, V., Vanharanta, H. (2019). Democratization of Intrapreneurship and Corporate Entrepreneurship within the McKinsey's Three Horizons Innovation Space in Ahram T., Karwowski W., Pickl S., Taiar R. (2019) Human Systems Engineering and Design II. Advances in Intelligent Systems and Computing, 1026, p. 1-10. doi: 10.1007/978-3-030-27928-8_150

Meijia, M. R. and Balanzo, A. (2018). What It Takes to Lead Sustainability Transitions from the Bottom-Up: Strategic Interactions of Grassroots Ecopreneurs. Sustainability. 10 (2294), pp. 2-20. doi: 10.3390/su10072294

Miao, Z. and Ji, H. (2020). Challenges to the Promotion of Employee-Driven Innovation in State-Owned Enterprises: Two Cases from the Automotive Sector in China. Sustainability, 12 (6), 2405, p. 2-16. doi:10.3390/su12062405

Muja, N., Appelbaum, S. H., Walker, T., Ramadan, S. and Sodeyi, T. (2014). Sustainability and organizational transformation: putting the cart before the horse? (Part One). Industrial and Commercial Training 46 (5), pp. 249-256. doi: 10.1108/ICT-02-2013-0007

Muja, N., Appelbaum, S. H., Walker, T., Ramadan, S. and Sodeyi, T. (2014). Sustainability and organizational transformation: putting the cart before the horse? (Part Two). Industrial and commercial training. 46 (6), pp. 307-314. doi: 10.1108/ICT-02-2013-0008

Muster, V. and Schrader, U. (2011). Green Work-Life Balance: A New Perspective for Green HRM. German Journal of Human Resource Management 25 (2), pp. 140-156. doi: 10.1177/239700221102500205

Network for Business Sustainability (NBS). (2010). Build Business Resilience to Crises. NBS.net [online] Available at: <https://www.nbs.net/articles/build-business-resilience-to-crises> [Accessed on 19th May 2021]

Network for Business Sustainability (NBS). (2010). Embedding Sustainability in Organizational Culture: A Systematic Review of the Body of Knowledge. NBS.net. [online] Available at: <https://www.nbs.net/articles/systematic-review-organizational-culture> [Accessed on 16th August 2021]

Norton, T. A., Parker, S. L., Zacher, H. and Ashkanasy, N. M. (2015). Employee Green Behaviour: A Theoretical Framework, Multilevel Review, and Future Research Agenda. Organisation & Environment, 28 (1) pp. 103-125. doi: 10.1177/1086026615575773

Office of National Statistics (ONS). (2021). Employment in the UK: June 2021 Estimates of employment, unemployment and economic inactivity for the UK. ONS. [online] Available at: <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/employmentintheuk/june2021> [Accessed 20th June 2021]

Organisation for Economic Cooperation and Development (OECD). (2020). Making the green recovery work for jobs, income and growth. OECD.org. [online] Available at: <https://www.oecd.org/coronavirus/policy-responses/making-the-green-recovery-work-for-jobs-income-and-growth-a505f3e7/> [Accessed on 20th June 2021]

Paillé, P. and Valéau, P. (2021). "I Don't Owe You, But I Am Committed": Does Felt Obligation Matter on the

Effect of Green Training on Employee Environmental Commitment. Organisation & Environment 43 (1), pp. 123-144. doi: 10.1177/1086026620921453

Plummer, P. and Van Poeck, K. (2021). Exploring the role of learning in sustainability transitions: A case study using a novel analytical approach. Environmental Education Research 27(3), pp. 418-437. doi: 10.1080/13504622.2020.1857703

Polman, P. and Bhattachrya, CB. (2016). Engaging Employees to Create a Sustainable Business. Stanford Social Innovation. [online] Available at: <https://ssir.org/articles/entry/engaging_employees_to_create_a_sustainable_business#> [Accessed on 10th April 2021]

Ramus, A. C. (2001). Organizational Support for Employees: Encouraging Creative Ideas for Environmental Sustainability. California Review Management. 43(3), pp. 85-105. doi: 10.2307/41166090

Ramus, C. A. (2002). Encouraging innovative environmental actions: what companies and managers must do. Journal of World Business 37 (2), pp. 151-164. doi: 10.1016/S1090-9516(02)00074-3

Reddy, S. M. W. , Torphy, K., Liu, Y., Chen, T., Masuda, Y, J., Fisher, J. R. B., Galey, S., Burford, K., Frank, K. A., Montambault, J. R. (2021). How Different Forms of Social Capital Created Through Project Team Assignments Influence Employee Adoption of Sustainability Practices. Organisation & Environment. 34 (1), pp. 43-73. doi: 10.1177/1086026619880343

Schneider, H. D., Livitz, I. E., Schneider, D. Sustainable Learning for Sustainability. Journal of Organisational Transformation & Social Change 10(2), pp.124-147. doi: 10.1179/1477963313Z.0000000009

Shane, S. and Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. Academy of Management Review, 25(1), pp. 217-226, doi: 10.2307/259271

Sübauer, E., Maas-Deipenbrock, R. M., Friedrich, S. Kreß-Ludwig, M., Langen, N., Muster. V. (2019). Employee roles in sustainability transformation processes. A move away from expertise and towards experience-driven sustainability management. GAIA - Ecological Perspectives for Science and Society 28(1), pp. 210-217. doi: 10.14512/gaia.28.S1.7

Teece, D. J., Pisano, G., Shuen, A. (1998). Dynamic capabilities and strategic management. Strategic Management Journal 18(7), pp. 509-533 doi: 10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z

van Mierlo, B., Beers, P. J., (2020). Understanding and governing learning in sustainability transitions: A review. Environmental Innovation and Societal Transitions 34, pp. 255-269. doi: 10.1016/j.eist.2018.08.002.

van Mierlo, B., Halbe, J., Beers, P. J., Scholz, G., Vinke-de Kruijf, J. (2020). Learning about learning in sustainability transitions. Environmental Innovation and Societal Transitions 34, pp. 251-254. doi: 10.1016/j.eist.2019.11.001.

Van Poeck, K., Östman, L., and Block, T. (2018). Opening up the black box of learning-by-doing in sustainability transitions. Environmental Innovation and Societal Transitions 34, pp. 298-310. doi: 10.1016/j.eist.2018.12.006

Weisenburger, K., De Tourreil, P., Fadden, R., McMahon-Sperber, S. A. (2018). The Innovator's Handbook 2018. Innov8ors. [online] Available at: <https://innov8rs.co/wp-content/uploads/2017/10/The-Innovators-Handbook-2018-Digital-Book.pdf> [Accessed on 15th January 2021]

Willard, B. (2002). The New Sustainability Advantage: Seven Business Case Benefits of a Triple Bottom Line. 1st ed. New Society Publishers.

Whelan, T. and Fink, C. (2016). The Comprehensive Business Case for Sustainability. Harvard Business Review. [online] Available at: <https://hbr.org/2016/10/the-comprehensive-business-case-for-sustainability> [Accessed on 10th April 2021]

Yi, L. Uddin, M. A., Das, A. K., Mahmood, M. and Sohel, S. M. (2019). Do Transformational Leaders Engage Employees in Sustainable Innovative Work

Behaviour? Perspective from a Developing Country 11(9), pp. 1-18. doi: 10.3390/su11092485

Yin, R., 2003. Case Study Research. Design and Methods. Applied Social Research Methods

Series. Volume 5. 3rd ed. London: SAGE.

Yuriev, A., Boiral, O. and Talbot, D. (2021). Is there a place for employee-driven pro-environmental innovations? The case of public organizations, Public Management Review. pp.1-28. doi: 10.1080/14719037.2021.1900350

Research at the UCL Institute for Global Prosperity aims to generate new insights about sustainable and inclusive prosperity and provide new models for developing and interpreting evidence.

Underlying our research is a rethinking of what we mean by prosperity. Prosperity must mean enabling people to flourish in ways beyond financial growth –and doing so equitably and sustainably, for humankind and the planet. We work with businesses, NGOs and citizens to produce interdisciplinary methodologies and problem-focused research.

For more information about our wide range of current projects and our innovative Masters and PhD programmes please see: https://www.ucl.ac.uk/bartlett/igp/

Institute for Global Prosperity

CONTACT

www.ucl.ac.uk/bartlett/igp www.seriouslydifferent.org igp@ucl.ac.uk

@instituteforglobalprosperity @glo_pro @glo_pro

Institute for
Global Prosperity