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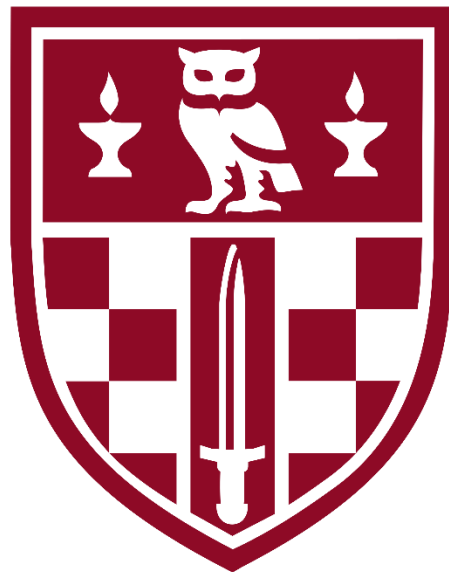
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What are the organisational and leadership factors that enable workplace pro-environmental behaviour (PEB)?

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July 2024

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**Thesis submitted in partial fulfilment for the degree of
Professional Doctorate in Occupational Psychology
(DOccPsy)**

Declaration of originality

I hereby declare that, except where explicitly mentioned, the work presented in the thesis is entirely my own.

Jerry Martin

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Abstract

Efforts to reduce waste and to improve environmental sustainability are pivotal to the health and future survival of our planetary habitat. Workplaces can contribute to sustainability efforts in several ways, specifically through encouraging employees to engage in 'pro-environmental behaviours' (PEBs). PEBs are defined as specific employee decisions and actions, that aim to positively influence environmental sustainability, such as recycling, commuting transport modes, energy use and home working. While research has focused on individual drivers of PEBs in home and work contexts, less is known about the organisational factors that facilitate these behaviours.

This doctoral thesis aims to examine the organisational and leadership factors that influence PEB in the workplace. First, a systematic literature review (SLR) examined what is known about the organisational factors that enable PEB. Findings from the SLR offered three key factors facilitating work PEB: Green Learning, Transformational Leadership and corporate social responsibility (CSR), providing initial evidence for organisational PEB influence and effect. Second, an empirical study conducted within the Royal College of Nursing (RCN) examined leader behaviours within leader/follower relationships. Interviews with a broad employee sample of RCN staff analysed using reflective thematic analysis (RTA), found six key enabling PEB factors: Enabling Conversations, Role Modelling, Encouraging Eco-behaviour, Challenging Behaviour to do things differently, Validating Behavioural Choices and Advocating Change. These findings provide new theoretical insights and practical implications for organisational learning and implementation. Opportunity for future research work in the development of a novel organisational PEB research measure as well as theoretical developments are also discussed.

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Professional Practice Statement

As Chartered Psychologist, I am exempt from the first module (Professional PracticePortfolio) of the Professional Doctorate. This thesis satisfies requirements for Part 2 of the Birkbeck professional occupational psychology doctorate (Research Thesis). By way of summary of my professional practice and context to this thesis, I gained my MSc in Occupational Psychology (University of Sheffield) in 1990 and was accepted as Associate Fellow of the BPS in 1995.

My early career was in nursing studying and qualifying in general nursing at University College Hospital London and working in the field as a general nurse for over seven years while subsequently studying Psychology and Management BA Hons degree at the University of Leeds. Having then won the British Petroleum (BP) scholarship for the Occupational Psychology Masters programme at the University of Sheffield, I went on to my first key role as 'Occupational Psychologist' at BP's corporate centre in London specialising in areas of learning design and delivery, leadership development, organisational development (OD) and cultural change.

Having gained my BPS Chartered Psychologist registration at BP through broad OD experience and practice and registration for qualifications tests use (RQTU), I then spent five years of my organisational psychologist career based internationally in Australia. My roles spanned both private and public sectors, initially within Curtin University as lecturer, researcher and consultant then OD consultancy at KPMG specialising in organisational development, and finally CSR (global mining and minerals company) as regional learning and

development manager for Western Australia delivering interstate learning and leadership development. Working internationally in the field has been incredibly developmental both personally and professionally, leading to dual citizenship and the opportunity to experience a rich and bountiful landscape.

On returning to the UK in 1997, I was fortunate to enjoy senior leadership and organisational development roles in several 'blue chips' including Siemens, Amex, BUPA and BT, consolidating my skills and knowledge further in the field.

Most recent roles have seen a return to the health sector after some fifteen years away, as senior OD consultant both at Imperial College Healthcare Trust and currently at the Royal College of Nursing (RCN), where my research interest in pro-environmental behaviour significantly developed. As a keen 'environmentalist' since adolescence, with strong personal values in conservation and an acute appreciation of the countryside and environmental protection, my main hobbies are rambling and cycling having organised and participated in countless events over the years across three continents.

In all my OD roles I frequently observed the extensive often unnecessary frequent national and international travel and resource use, coupled with a prevalent 'presenteeism' culture in office-based environments leading seemingly to entrenched behaviours of 'expendable' resources. This became increasingly prevalent in my current role at the RCN where, pre-COVID at least, there was an extremely prevalent cultural expectation that almost all meetings had to be in person, face-to-face, additionally at significant personal costs to individual employees in terms of time, family pressures, work load and stress.

While we are increasingly seeing the extreme effects of climate change on many continents including wild fires and the many societal issues caused by resulting heat stress, I was moved to action in seeing the Australian bush fires of 2020 where I have dual citizenship. The latter catastrophic events we all witnessed via social media caused widespread disaster to natural habitat, animal welfare and residential settlements, which both inspired and motivated me to explore causes and impact further, as well as contributing to potential solutions. This will be referenced further in my related reflexive position.

Chapter 1: Introduction - Investigating the Role of Organisational Factors in pro-environmental behaviour (PEB) at Work

1.1 Introduction

This chapter provides an introduction to Pro-environmental behaviour (PEB) at work firstly outlining the broader context of Global Warming (GW), environmental deterioration, behavioural response and belief in GW and associated organisational costs in positioning this thesis and research opportunity. An overview and shortcomings of the current related literature are also offered and thesis structure provided. Finally, the aims of study one and two are outlined, along with the reflexive position of this author.

1.2.1 Global Warming - Environmental Deterioration

Climate change is seen as an urgent global issue with demands for personal, collective, and governmental action. While much has been researched and written on this pressing topic, especially over the past decade, aspects concerned with 'personal control' (behaviours perceived as enabling influence) are still being continually developed. People's willingness to engage in mitigation actions has not received as much attention as the level of belief in GW, especially on the international stage. Several reports and studies confirm the need to decrease human contribution to global warming and environmental deterioration at both global and local levels (e.g. IPCC 2007; United Nations Environment Programme 2012).

Correspondingly the case for action, and the human and financial costs of not doing so, is clear. An increasingly significant body of studies predicts financial and social costs are estimated as high as 3.6% of GDP (United States). Four GW impacts alone, hurricane damage, property loss, energy and water depletion, are estimated to cost 1.8% of GDP or \$1.9 trillion by 2100 (Ackerman & Stanton, 2008).

1.2.2 Global Warming - Behavioural Response

Large scale US census survey data analyses revealed three key factors in the 'behavioural interplay' response to GW facilitating change at the individual level. Public 'informedness' (knowledge of key issues), confidence in scientists (perception in trusted experts) and personal efficacy ('can I make a difference') in effecting global warming outcomes, all appear key. Although paradoxically, the more informed - the less responsible and concerned individuals were found to feel about personally responding (Kellstedt, Zahran, & Vedlitz, 2008).

Milfont (2012), notes similar paradoxical results for high confidence in scientists' responses and corresponding perceptions of low responsibility and concern. Public knowledge, level of concern, and perceived personal efficacy in positively affecting global warming issues, appear to be key variables in understanding how to garner public support for mitigation action. Contrastingly, Kellstedt et al. (2008), reported contradictory associations between knowledge, personal efficacy, and concern about global warming and climate change,

although these cross-sectional findings also limit inferences about temporal stability and direction of influence.

Milfont's (2012) study examined the relationships between these three variables over a one-year period in three waves of national data from New Zealand. Results showed positive associations between variables, with stable and consistent patterns across the three data points, with the researchers also concluding that issue salience has served to alter findings from earlier research over time. More importantly Milfont's (2012) findings, indicate that overall concern mediates the influence of knowledge on personal efficacy i.e. knowing more about global warming and climate change, increases overall concern about the risks of these issues. This increased concern in turn leads to greater perceived efficacy and responsibility to help issues resolution, the resulting implications for perceived risk and climate change outcomes communication are discussed. This three-way relationship between knowledge, concern and efficacy is explored extensively showing significant interplay between all three variables and a worrying reduction in perceived efficacy over time. In essence there may be indications of 'efficacy fatigue' and knowledge overload amongst other issues over time, which may need exploring for sustained behavioural change. They point to fine-tuned communication including positive stories, political constraints and social norms and are open about sampling bias on self-selection of those aware and interested in GW issues. Regardless of reported question interpretation challenges in surveys used, we are better informed about the causal influence of knowledge on concern and public willingness to engage in mitigation actions at the individual level.

1.3. What is Pro-environmental behaviour (PEB)?

By way of PEB definition, Fatoki (2019) offers a useful and succinct working summary:

‘behaviours causing minimal harm to or even benefit the environment’. Moreover, Kollmuss and Agyeman (2002) describe PEB as ‘behaviours that can reduce the negative impact of individuals on the environment’. Research in Western nations indicate systematic individual misunderstanding of GW and the actions required for mitigation, with key factors influencing judgments on mitigation actions including: demographics, personal experiences, beliefs, knowledge, values, and world-views (Kollmuss & Agyeman, 2002). Broomell, Budescu and Por (2015), provides context here in results of an international survey (25 samples from 24 countries) measuring general behavioural intentions to act and willingness to engage in specific actions. Analysis revealed endorsement of specific actions is (a) lower than general endorsement of mitigation, (b) accompanied by higher intra-individual variance, and (c) more strongly related to personal experiences with GW. This pattern can be attributed to the compatibility between the proximal construal of specific actions and the nature of the personal experience, recommending corresponding implications for tailored communication strategies, coupled with enablement of greater opportunities for exposure and access to green space. Essentially PEB responses are complex, context dependent and individualistic.

1.3.1 PEB - Interpersonal Communication, Knowledge and Climate Change

Although a large body of research has explored the influence of communication on public engagement with climate change, few studies have examined the role of interpersonal discussion. Goldberg, van Linden, Maibach, & Leiserowitz, (2019) used panel data with two time points to investigate the role of climate conversations in shaping beliefs and feelings about global warming, discovered evidence of reciprocal causality. Essentially discussing global warming with friends and family showed this leads people to learn influential facts, such as scientific consensus that human-caused global warming is occurring. Similarly, stronger perceptions of scientific agreement increase beliefs that climate change is happening and human-caused, in addition to 'worry' about climate change. When assessing reverse causal direction, they found that knowledge of scientific consensus further enhances increases in global warming discussion. Interestingly, these findings indicate that climate conversations with friends and family trigger people into a 'pro-climate social feedback loop'.

1.3.2 PEB - Individual Factors - Worry, Risk, Psychological Distance and Health

Weber (2006), reviewing the literature over the past 30 years to explore a range of risk related behaviours to explain climate change reactions, notes that worry drives risk management decisions and more specifically 'when people fail to be alarmed about a risk or hazard, they fail to take precautions or mitigation actions'. Moreover, the perceived

'distance' from the issue at hand and perceived 'time lapse' probability of events facilitates this behaviour, indicating the need for greater visceral representations of negatively altered future climate states to elicit real behavioural change. In other words, creating a personalised picture of the realistic negative climate change impacts on lifestyle and associated risks of not taking action is indicated, in eliciting potential behaviour change. Additionally, an extensive analysis of 'psychological distance' literature review was carried out by McDonald, Chai and Newell (2015), examining proximity to climate issues (neighbourhood and community) and potential behavioural change, concluding mixed and contradictory results with the suggested need to explore this concept more fully. In a meta-analysis conducted by Rifkin et al (2018), a separate body of connected literature has examined a broad spectrum of issues from physiological effects and related costs. These range from impeded respiratory performance and health related issues, to behavioural effects such as factors effecting sleep function. In doing so, these studies also offered evidence to focus initiatives on reducing perceived psychological distance between climate change effects and the resulting personal impacts, thereby facilitating behaviour change.

1.4 PEB at Work - Organisational Factors, Research and Theoretical Constructs

Given the significant amount of time individuals spend at work, there has been a growing interest in understanding how organisations can support PEBs. Historically, studies on PEBs have had greater focus on private environments and households, however, employees

spend most of their time at work within commercial and industrial activities, in turn producing significantly greater greenhouse gas emissions than in private homes.

Additionally, we see that employees are increasingly seen as 'an important stakeholder in organisational environmental initiatives' (Fatoki, 2019). Several psychological theories have been applied in efforts to understand the processes at play in work settings. Paillé and Mejia-Morelos (2014) for example, used Social Exchange Theory (SET) to explore employee willingness in engaging PEBs. SET is based on the idea that social behaviour results from an exchange process where individuals are seen to weigh potential benefits and risks in their social relationships, maximising benefits and minimising costs (Emerson, 1976). They examined mediating factor effects of organisational support, attitudes and psychological contract breach, via cross-sectional attitude survey study (n = 449) at a Mexican University. Findings revealed that perceived organisational support affects PEBs indirectly through organisational commitment.

Other theories applied in examining workplace PEBs include Value-Belief-Norm (VBN), (Anderson, Shivarajan, & Blau, 2005 and Scherbaum, Popovitch, & Finlinson, 2008). VBN follows the reasoning that when individuals hold certain values and beliefs and those values are threatened, they instinctively feel obligated to defend their values in response.

Moreover, VBN theory purports that 'green behaviours' are more likely to occur when a causal series of variables (values, beliefs and personal norms) are present. Prior studies

show individuals are more likely to engage in specific behaviours when they believe their social group of : family members, relatives, friends, neighbours and colleagues, also value those actions (Choi, Jang, & Kandampully, 2015 and Ajzen, 1991). Contrastingly, the Theory of Planned Behaviour (TPB), proposes behaviour is driven by beliefs about likely consequences of an action (favourable or unfavourable), perceived social pressure or subjective norms and perceived behavioural control over the action. Greaves, Zibarras and Stride (2013) amongst others, have utilised TPB in PEB showing: 'TPB constructs were found to explain between 46% and 61% of the variance in employee intentions to engage in three environmental behaviours and to mediate the effects of specific antecedent beliefs upon employee intentions to engage in these behaviours'.

The Cognitive Theory of Stress (CTS - Coyne & Lazarus, 1980) in PEB studies, has been used to explore whether such experiences of stress contribute to finding solutions for environmental problems. Homburg and Stolberg (2006) for example, in exploring egoistic and altruistic personalities on pro-environmental behaviour, showed 'egoists' were shown to perceive having less control, believing that 'it was too difficult as well as pointless to do much about environmental issues', while 'altruists' were shown to 'perceive having more control and showing greater willingness to make sacrifices'. For example, 'egoists' compared to 'altruists' were shown to be less prepared not to drive their car for environmental reasons, indicating consideration of personality 'types' in influencing behaviour.

In addition, Staddon, Cyclic, Goulden, Leygue and Spence' (2016) systematic review of 'interventions to save energy and change behaviour in the workplace' (n = 22 studies), concluded that interventions facilitating cultures of 'enablement' i.e. social and physical opportunities to save energy, as well as direct support and greater employee control are key factors. Indeed, Young et al.'s (2015) multi-disciplinary literature review of research exploring behavioural change initiatives created a PEB framework, encompassing group, organisational and contextual factors, revealed the strongest predictors as: environmental awareness, financial incentives, performance feedback, environmental infrastructure, training and management support.

Several other organisational factors have been recently explored by researchers, adding to research in building process models of the interplay between cognition, emotion and intended action. For example, Unsworth, Dimitrieva and Adriosola (2013), when examining Corporate Social Responsibility (CSR), revealed 'stark contrasts' in how differing organisational cohorts conceptualise and engage in CSR, especially in how it contributes to meaningfulness at work. Paillé, Morelos, Raineri and Stinglhamber (2019), exploring 'the influence of immediate managers on avoidance of non-green workplace behaviours' showed that while social exchange relationships with immediate managers may reduce tendencies of employees to engage in non-green behaviours, indirect effects of supervisory support on non-green behaviours through employee environmental commitment was moderated by low levels of trust in managers.

Moreover, Greaves et al., (2013), utilised the Theory of Planned Behaviour to construct a modelling process of knowledge, emotional and behavioural interplay affecting actions, all of the above research teams utilising survey data analysis. While Robertson and Barling (2012), in examining leaders' influence on PEB through modelling 139 subordinate leader dyads, found that leaders' environmental descriptive norms predicted their style and PEB, in turn affecting their subordinates PEB accordingly. They found that these norms: 'predicted their environmentally-specific transformational leadership and their workplace PEBs both of which predicted employees' harmonious environmental passion. In turn employees' own harmonious environmental passion and their leaders' workplace PEBs predicted their workplace PEB' suggesting a complex behavioural causal loop.

1.4.1 PEB at Work - Organisational Factors - Value, Costs and Employee Performance

In considering the organisational financial value of green behaviour, little is available on real costs, with significant opportunity for greater work to facilitate change here. However, Eccles, Ioannou, & Serafeim, (2011) outline research evidence suggesting organisations are increasingly adopting Corporate Social Responsibility (CSR) policies (incorporating PEB), as reflecting "substantive changes in business processes". Moreover, they found that found that "High Sustainability companies significantly outperform their counterparts over the long-term, both in terms of stock market and accounting performance" also coupled with recent and increasing shareholder pressure to operate sustainably. There is both evidence

and argument here that it is in the interest of organisations to enhance their perceived and actual performance through incorporating a strategic sustainability component.

Correspondingly the case for action and research to help address these climate issues is explicit, additionally in the human and financial costs of not doing so. Attempts to gain more clarity on related costs are emerging, for example Moore and Boldero's (2017) work, in considering domestic versus agricultural water consumption and the factors affecting usage differences. In their comprehensive systematic review, they offer a 3-stage behavioural change model for effective resolution. Firstly, those associated with 'one-off' behaviours (e.g. buying energy efficient tools, photocopiers/cars), secondly 'continuous' behaviours for adoption and maintenance (curb-side/office recycling) and finally 'dynamic' i.e. differing socio-dynamic behaviours for adoption and maintenance (office/work-site bespoke strategies).

1.5 Limitations of Workplace PEB Research

Four key limitations to date are outlined across this overall body of research. Firstly, there is a dominance of survey methodologies used in the research, and the generalisability of findings is limited due to the low survey reliability. Homburg and Stolberg (2006) for example, concluded that awareness of environmental problems leads employees to engage in PEB at work, but while also recognising low survey measurement reliability affecting generalisation of their findings. Secondly, research overlooks specific PEBs.

Greaves et al. (2013) for example, realised their cross-sectional design overlooked specific behaviours for each scenario explored (recycling work waste, video conferencing instead of meeting and switching computers off).

Thirdly, in failing to consider the views of different employee groups. Wesselink, Blok and Ringisma (2017), for example, in surveying leaders' behaviour on employee PEB (540 employees and managers in four Netherlands housing associations), realised their approach overlooked managers' views, focussing on employee attitudes. Finally, research to date has yet to explore fully the complex relationship between organisational culture and PEB, for example Staddon et al. (2016). This author's SLR seeks to explore these subtle mechanisms at play in firstly exploring organisational factors that both enhance and impede PEB and secondly the relationship between leaders and followers, thereby enhancing the PEB research field discussed further in 1.10 and 1.11.

1.6 PEB and Wider Organisational Contexts - SLR Opportunity

Given the range of behaviour change interventions and frameworks applied, with many failing to capture the comprehensive nature of PEB, Staddon et al.'s (2016) work sought to evaluate these interventions. In their systematic review, Staddon et al examined the findings of 22 studies through Michie et al's (2014) Behavioural Change Wheel approach (BCW) and found those creating 'social and physical opportunities for employees to save energy are the most successful' i.e. those providing enablement and empowerment 'including direct support and greater control to employees'. The BCW (Michie et al., 2014) was developed based on 19 systematic reviews, cutting across multiple models and theories of behavioural

change, provides coherence and rigour through three 'wheel-hubs' within the clear model offered. The first hub identifies 'sources of behaviour' such as reflection and sociability, the second hub identifies 'intervention functions' such as education and training with the third covering 'policy categories' such as legislation and guidelines offering overall structure to workplace PEB research endeavour.

Young et al.'s (2015) research via a multi-level contextualising framework also leads to new learning in both PEB cause and effect and when combined with Unsworth et al.'s (2013) work and McDonald et al.'s (2015) insights and conceptual models respectively, a clearer picture of the complex organisational mechanisms at play starts to emerge. Additionally, there is arguably a four-way PEB organisational influence for change from shareholders, governments, monitoring agencies and across employees (Cheng, Wu, Deng, & Li, 2022). For example, Samad et al. (2021), note that in supporting global concern for environmental issues like carbon emissions, suggest companies must engage in 'green' working practices by adapting to external policy requirements to achieve sustainable development. Similarly, Kong, Feng and Huo (2021), propose that 'corporate green innovation', previously considered an unnecessary investment in organisational performance, has become integral to companies aspiring to sustainability, in turn offering unique competitive advantage. More limited studies have explored the impact of individual employee behaviour on the green economy, predominantly utilising PEB as the key measure here (Boiral, Paillé, & Raineri, 2015).

There now remains opportunity for a fresh approach in literature synthesis summarising the current body of knowledge of the organisational level factors, especially given further contemporary work by Francoeur, Paillé, Yuriev and Boiral (2021) and Aziz, Mahadi and Mohammad (2018). The need to better understand the organisational factors, was highlighted in Yuriev, Boiral, Francoeur and Paillé's (2018) recent systematic literature review on methodology and empiricism respectively, revealing a summative gap in this collective body of knowledge. Specifically, they highlight that 'most importantly, selected studies did not specifically investigate barriers that impede employees from performing green behaviors', secondly suggesting 'opportunities for future research mainly associated with a conceptual model' and thirdly recommending 'assessing success rate of practical recommendations and develop clear implementation plans for organizations willing to evolve in a responsible and environmentally friendly direction'. This work then seeks to address this gap in knowledge and understanding in this author's SLR study, through examining the role of organisational factors in influencing PEB at work.

1.7 PEB Leadership Behaviours - Empirical Study Opportunity -

In summary research exploring PEB at work has been criticised widely for predominant use of cross-sectional data (Greaves et al., 2013), and poor methodological design (Börner, Kalz, & Specht, 2015; Fatoki, 2019). This has impeded the exploration of the complex relationships between the various PEB factors and outcomes within organisations. By way of attempted conceptual summary here, Young et al.'s (2015) multi-disciplinary literature review of

research exploring behavioural change initiatives created a pro-environmental behaviour (PEB) framework, encompassing group, organisational and contextual factors. Strongest predictors seen were revealed as: environmental awareness, financial incentives, performance feedback, environmental infrastructure, training and notably key management support, although via highly variable methodological approaches and robustness and clearly stated limitations.

This author's second empirical study therefore seeks to explore the specific leadership behaviours that correspondingly encourage and facilitate PEB in employees, representing unique opportunity for deeper PEB insights and requisite practical organisational implications

1.8 Research Aims

The overall aim of this thesis was to gain a deeper understanding of the factors that enable and inhibit workplace pro-environmental behaviour as well as the leader-follower behavioural dynamic. The intention was to help organisations leverage practices and strategies for enhanced sustainability as well as potentially contribute to behavioural mitigation of environmental impact.

The first study aims then were to examine the role of organisational factors in influencing pro-environmental behaviour at work specifically:

- 1 What organisational level factors are barriers to PEB at work?
- 2 What organisational level factors are facilitators to PEB at work?

The second study aims were firstly to explore the leadership behaviour effects (processes, mechanisms and factors at play) on workplace PEB with implications for enhanced employee behavioural change. Secondly contribute to existing literature through deeper insight on the leader/follower relationship with respect to PEB and modular/theoretical development. Thirdly to identify activities, processes and procedures organisations may implement to enhance workplace PEB at leader and follower level. Key research questions of this study were:

1. What are the identifiable PEB leadership characteristics enabling employee PEB?
2. What are the identifiable PEB leadership characteristics inhibiting employee PEB?

1.9 Reflexive Position

My research focus on this subject of interest was primarily driven by one of my strongest personal values of concern for environmental protection and as psychologist the potential to explore behavioural causes, effects and changes that may be made to mitigate environmental damage at the organisational and employee level. This will be discussed further in my Reflexive Statement (Appendix 1) and further relates to my dual nationality as both Australian and British Citizen. Living in Perth (Western Australia) in early 2000's for five

years, I experienced wild fires, water resource challenges and other climate related issues well before European countries and indeed the UK began experiencing similar extreme climatic effects. It was of great concern to me at the time that little was being done at organisational and political levels to consider change, with mixed awareness amongst the public of how best to address the issues, coupled with strong media rhetoric on whether there was even a need to do so.

Wind forward to the more recent catastrophic bush fires of 2020 with damage to habitat, animal life and residential property across three Australian States, I was spurred into action to make a difference to how humans may make positive changes in employment settings. Seeing how powerful climatic forces of heat, fire and flood could cause such devastation to such precious landscapes and habitat had an emotional resonance with me. Having worked in multiple large corporates with CSR strategies, it seemed that much was in fact 'window dressing' to 'tick the box' in the area, appease shareholders and annual reporting, with little measurement of effects. Zibarras and Coan's (2015) survey of 214 organisations for example, showed either weak or no evidence on CSR measurement.

An emerging pattern developed while studying existing SLR's in the PEB field and reviewing exhaustive related literature, that organisational mechanisms 'at play' of PEB barriers and facilitators had yet to be explored and defined, with potential to be of significant value in organisational application for positive change. A key personal aspiration of my research was enabling 'real world' application and in making a potential difference to employers,

employees and environmental outcomes and when linked with my personal value set, facilitated greater motivation of my research goals. This work now seemed to show promise in adding value to the Occupational Psychology research field and addressing the specific workplace challenge of human generated climate change specifically in the work setting.

I was acutely aware and informed supervisors that I had 'a window' of valuable time before starting a new full-time position with the Royal College of Nursing (RCN) as Organisational Development (OD) Consultant, which I knew would be initially all-consuming. Also, my complimentary roles of Non-Exec Director of MIND (the mental health charity) and Registered General Nurse (RGN) would continue, but also become acutely challenging given the pandemic environment and impacting factors affecting both areas of work endeavour. It turned out the RCN was a fortuitous opportunity, for potential access to a range of mixed professional roles across the UK for this form of research.

In as much as the research process has taken considerable time, work and reflection, all highly challenging while working full time in Organisational Development, volunteering as Non-Exec Director at MIND and caring responsibilities, all these roles enabled continual renewal and refresh in my developmental thinking. Initial expectations were that the research process would be relatively straight-forward, planned and linear, however I soon realised the value and contribution of suspending judgement in approach, being open to considering new approaches, while challenging my own thinking and endeavouring to trust the research process as it evolved.

Last but not least I have been profoundly affected by a significant health issue from June 2021 requiring both extensive surgery and cellular therapy, the latter of which is ongoing. While incredibly challenging on every level, the positive side of this has been deep seated learning and reflection on a personal level about life priorities and focus, as well as taking time out of work for recovery and revisiting my future work arrangements. Ironically, my focus on this doctorate research has fortuitously also been reinvigorated. In essence while I await further a medical intervention in the hope of positively managing my health issue, this absorbing study has offered a healthy and positive distraction from the ongoing uncertainty and psychological burden. Additionally, in reaching out to engage in related therapeutic interventions to help manage my health, both physical and psychological, I have experienced great reflection and learning which I believe in turn brings wisdom, knowledge and appreciation of high-level study.

Chapter 2: Methodology

2.1 Introduction

This thesis examines the factors that both enable and inhibit employee PEB, with this chapter outlining the rationale and methodology selected. In addition, this researcher's epistemological approach is also offered coupled with corresponding rationale. The research comprises two separate studies. The first of these is a systematic literature review, exploring existing knowledge to date in investigating the role of organisational factors in PEB at work, while the second qualitative study explores the resulting research opportunity from the SLR, namely examining how leaders' behaviour and characteristics in work settings may in turn impact 'follower' and employee PEB. The ethical considerations and practical steps to manage all related research activity are also covered here, along with full rationale for the qualitative approach selected for the purposes of this study.

2.2 Epistemological Research Approach

Before starting any research process, it is useful to reflect on our assumptions and beliefs about the world, as these influence the way in which we conduct our research (Cresswell, 2009). Through this understanding and acknowledgement, we raise awareness on how our beliefs may influence the methods that we use. Moreover, such information is likely to enhance the reader's understanding of this researcher's methodology and resulting data.

Differing researchers will hold in turn varying world views, meaning that similar problems may be approached in various ways.

Epistemological values, assumptions and methods are often inextricably linked, in that the researcher's philosophical underpinnings and thinking on epistemology, shape and guide the research process (Holloway & Galvin, 2023). First and foremost is attaining clarity of the research question(s) (Willig, 2013), within these two studies being firstly organisational factors affecting PEB and secondly leader PEB behaviours. The overall epistemological approach overseeing both studies here is that of critical realism (Bhaskar, 2010), best used in explaining outcomes and events in natural settings. Essentially the approach recognises that 'interventions and systems consist of emergent mechanisms that can explain the outcomes' and adopts a research method focussed on seeking meaning and understanding from research questions rather than simply describing.

Moreover, a researcher's positionality, 'an individual's world view and the position they adopt about a research task and its political context' (Holmes, 2020), are highly relevant to the quality of any research endeavour. Savin-Baden and Major (2013), outline three key approaches that researchers may use to identify and develop their individual positionality, namely the subject under investigation, the research participants and the research context and process. In other words, the awareness of the pre-existing lens and inherent biases and

advantages the researcher comes to the research in question with, helps identify and illustrate influences and also desired objectivity wherever possible.

On this note both the reflexive position outlined in Chapter 1 and reflexivity highlighted throughout the research process, are intended to locate my positionality here. In addition, recognising my 'fellow employee' status in the organisation being studied, my passionate environmentalism as part of my value set, and being a qualified medical professional integral to the cultural framework of the organisation being researched amongst other influences, these collective factors will both help and hinder the research process in question.

Essentially my research position here is in relating to a relativist ontology (belief that reality is a finite subjective experience and that nothing exists outside our thoughts (Denzin & Lincoln, 2005), in turn driving an interpretivist-positivist epistemological approach (Lin, 1998). Ultimately, I therefore see myself as part of the research, interpreting the data and never being entirely objective or removed from the research in question. My personal research choice to move from critical realism (searching for explanations or causal mechanisms through a focus on the social context-based agency and structures people work in) to the interpretivist-positivist approach, is essentially based on a view that a mixed methods framework as best fit, thereby endeavouring to examine the 'causal what and causal how', something neither approach could seek to achieve independently. Thus, as will be seen and discussed in chapter 4, both the benefits of collecting and analysing qualitative interview data is elicited through framed and honed questions of a positivist stance, ultimately intentionally combining the strengths of both approaches.

The first study in conducting an SLR of organisational factors, while based in a critical realist overarching framework mentioned, was selected due to the structured framework and approach while also recognising other researchers may reach quite different conclusions and interpretations discussed further in 2.4. Secondly the primary assumption in selection of my empirical qualitative study, was in seeking to get as close as possible to the participants being studied. As a result, the subjective evidence constructed and presented is primarily based on this researcher's individual views in illustrating how this knowledge is presented i.e. essentially through the subjective views of people, in this case followers in relation to PEB in one organisation. Again, another researcher may choose to approach this research challenge and related philosophical underpinnings in an entirely different way. As this research is involving myself in the data and by the very nature of my role too as fellow organisational employee and health professional in the organisation being studied, I am unable to bracket myself, my beliefs and research underpinnings out of the data, I actively used a reflexivity diary to fully reflect on this process.

The principal epistemological features in qualitative research at play here are cognitive interaction and cooperative knowledge construction seeking to expand a specific knowledge focus, in this case the research questions outlined, of known subjects (Gray, 2014). As interpretivist-positivist researchers focussed on the 'observable world' in critical realism, we are interested in contextualised, specific environments, understanding that knowledge and the corresponding reality is subjectively influenced by people in their environment. As a consequence of being more subjective and subject to biases here, this type of research is

inherently impeded from being generalised in the way that purely positivist research can be (Gray, 2014; O’Gorman & Macintosh, 2015) and will also be discussed further in Chapter 4, namely the limitations of this researcher’s empirical study.

Moreover, this author is cognisant here of Bhaskar’s (2010) transcendental realism general philosophy of science and special philosophy of the human sciences, namely critical naturalism. Essentially critical naturalism notes that when we study the human world as opposed to the physical, we are required to adapt our strategy in studying it to account for both the order and disorder, as well as the stability and changeability of the observable world. Thereby in selectively applying social scientific methods as in this research, the intent is to recognise mechanisms producing social events, with an awareness of the dynamic nature of human structures and processes and the potential for reflection and adaptability of individuals to change within these structures, thus enabling in part effective and holistic social-scientific research.

Thus, while the interpretivist-positivist approach applied specifically to the empirical research here implies inherent subjectivity through a time-bound specific process and individualistic research application recognised as biases and potential barriers to replicability, the richness and granularity of knowledge gleaned, arguably offers fresh learning to the PEB at work field. It is with this philosophical approach in mind and endeavour to seek rich granular data in proximity to the subjects here with an awareness of inherent limitations, that the empirical research is conducted.

2.3 Ethics

As a Chartered Psychologist and Associate Fellow (BPS), Registered General Nurse (NMC) and Non-Executive Director MIND mental health charity, I remain fully aware of my responsibilities regarding client welfare and participation and have committed to uphold the HCPC standards of professional conduct and the BPS standards of ethical conduct in all research activities outlined. A range of actions were taken to ensure the highest standards of ethical research approach, the first of these being a comprehensive presentation and successful approval (Ref. OPEA-19/20-10) of the ethics board of this researcher's supervising academic institution, namely Birkbeck College, University of London.

Specific actions and risks mitigation in study two, included firstly guidance to subjects of referral safeguarding agencies, as in BPS ethics guidelines, should there be any unexpected distress or psychological ill-health. Secondly all participants received and subsequently had opportunity to discuss a comprehensive Information Sheet for Participants which fully outlined the objectives, nature and process of research (Appendix 3). This document covered all aspects of the research protocol including the researcher conducting it, the background reasoning and purpose, why and how they were selected to take part, the questions that would be covered, what would happen to the data once collected to the point of analysis and data protection. A Consent Form (Appendix 4) was then supplied to participants before interview ensuring voluntary inclusion and stored for reference.

Interview data and all documentation relating to this research was kept securely and analysed only by this author, save initial anonymised thematically analysed samples shared with my supervisor. Additionally, any data used in this research has been entirely anonymised free of names, context and location, preventing either direct or indirect identification. At close of all interviews, all participants were also provided with a Debrief sheet (Appendix VI), which reiterated study, aims, objectives, ethics policy and guidelines, outcomes and follow-up questions as well as independent contact agents such as college supervisors, if need be, as well as further reassurances on anonymity and confidentiality. Participants were also offered a research summary outcomes report once the entire research process and thesis completion was complete.

2.4 Study One - Systematic Literature Review

This first study was a systematic literature review (SLR) to explore what had been previously published in investigating the role of organisational factors in pro-environmental behaviour at work and more specifically two key questions: firstly, 'what are the organisational level barriers?' and secondly 'what are the organisational level facilitators?'. The philosophical stance of the SLR here is clearly positivist in approach, given the evidence-based nature, explicit and reproducible method, structured stages and objectives and search strings that include all related studies. Conducting an SLR was considered important and informative in this research for several key reasons. Firstly, it provides helpful context to an empirical study, secondly it may also help inform further research philosophical underpinnings and design, thirdly it may help shape further research questions and outcomes and finally

combining the SLR with this author's empirical research would intentionally provide a more comprehensive understanding of PEB workplace organisational and leadership factors. As Tranfield, Denyer and Smart (2003) summarise: 'the researcher both maps and assesses the relevant intellectual territory in order to specify a research question which will further develop the knowledge base'.

An important part of systematic reviews is in being a 'deep dive' focus on a specific area. Clarke (2016), notes that 'documenting fully the volume of past work in an area using systematic review can provide important indications of where work is most needed'. Further 'Findings from reviews can be used to spark our creative thinking by acting as stimulus material to create more complex, nuanced studies that are truly innovative and responsive to genuine gaps in the literature'.

Moreover, Denyer and Tranfield (2009) note that they are a 'specific methodology that locates existing studies, selects and evaluates contributions, analyses and synthesizes data, and reports the evidence in such a way that allows reasonably clear conclusions to be reached about what is and is not known'. This is especially helpful in providing clearer thinking on a subsequent related empirical study but they are not without their shortcomings. While there are advantages in the clarity of interrogated research questions, robust strict inclusion criteria, reduced bias and an extensive database search, they are also

criticised as potentially overlooking relevant data and being inconclusive as well as time consuming. However, Hong and Pluye (2018), amongst others view them as the 'gold standard' of literature reviews.

An alternative to the SLR approach of existing literature, is the traditional 'narrative' review, however these are often seen as lacking thoroughness and viewed as not part of purist investigative science, meaning in turn they can fail to help make sense of what the elicited collection of studies reveal (Tranfield et al., 2003). Essentially, these types of review being driven more by an 'investigative-journalistic' like approach, are by their very nature prone to researcher bias and can lack rigour, 'with a higher level of subjectivity in data-collection and data-interpretation' Kraus, Breier and Dasí-Rodríguez (2020). Thus, the systematic, transparent and repeatable research process of the SLR here, facilitates robust enhancement of the subject knowledge base, as well as enabling greater clarity of the research gaps with clearer implications for professional practice. Moreover, given the quality and thorough nature of SLR process and outputs, subsequent research questions for my empirical study were honed for more refined results.

2.5 Study Two - Empirical Study

2.5.1 Data Gathering

Building on the learning and insights from this SLR and given research reliance to date on purely cross-sectional survey data approaches discussed further in chapter 3, this second study focussed on examining specific leadership behaviours that encourage and facilitate PEB in employees, representing a unique opportunity for deeper PEB knowledge insights as well as requisite practical organisational implications. Endeavouring to understand and broaden knowledge of workplace PEB and the inherent subtle interplay between key actors, in this case between leaders and followers, was arguably best approached through the interview process as outlined in the research approach.

Ruslin, Mashuri, Rasak, Alhabsyi and Syam's (2022) work helps encapsulate this researcher's choice of interviews here as: 'based on researchers' view that social explanations and arguments can be constructed in-depth and taking into account nuance, complexity, and roundedness, rather than as a type of broad surveys where surface patterns are predominantly considered'. This builds on the ontological position of this researcher's knowledge building philosophy that 'it is usually based on the belief that knowledge, views, understanding, experiences, and interactions are meaningful properties of social reality in which their research questions are designed', Mason (2002).

To fully understand the impact of leader PEB behaviours, this research examines the relevant behaviours through in depth semi-structured interviews (Appendix V) with 15 recruited 'followers'/employees, in one organisation. Other interview formats were considered including structured, unstructured, in depth or ethnographic, stimulated recall and longitudinal. Given the epistemology outlined, the advantages here of preparing questions prior to guide both content and process, enabling open ended and rich responses and facilitation of the two-way communication format, were all well indicated to the nature of this study. The challenge of semi structured interviews is consistency in approach and thereby data quality. Given the extensive experience, competence and interview experience of this researcher, quality standards of procedure and execution are intended to be of the highest standard.

2.5.2 Data Analysis

Qualitative research and specifically Thematic Analysis - TA (Braun & Clarke, 2006) approach was applied collecting data from 15 team members (pending sufficient access and subject to data saturation). The semi structured interview approach selected was intended to enable collection of a far more detailed picture of leader/follower relationships in relation to PEB compared to attitudinal survey approaches, offering the deeper capture of context, flexibility in building a rich data picture as well as consistency in approach. TA commonly used in counselling, education and social work (Joy, 2023), provides an 'accessible' methodology for examining and interpreting qualitative data in building a story about

patterns of meaning. Best outcomes in TA are realised through thoughtful reflexivity and acknowledging the researcher's role in the process of generating knowledge.

Essentially 'through its theoretical freedom, TA provides a highly flexible approach that can be modified for the needs of many studies, providing a rich and detailed, yet complex account of data' (Braun & Clarke, 2006). With these strengths of accessibility and flexibility in mind of the TA research approach and being especially advantageous to new researchers (Braun & Clarke, 2013), a stringent quality approach was adopted throughout the process of transcription, data familiarisation and coding, developing themes, reviewing, defining and naming themes and finally producing the report. In essence it is this structured rigorous approach, following a clear disciplined framework that enables best quality of results, also quality assured by a second researcher. Braun and Clarke (2006) originally imagined TA as flexible in paradigm and suitable across a range of ontological and epistemological orientations, although have more recently espoused it as more qualitative and constructivist in approach (Braun & Clark, 2021), lending itself well to this study. Further Byrne (2022) asserts that 'Braun and Clarke (2019), encourage the researcher to embrace reflexivity, subjectivity and creativity as assets in knowledge production, where they argue some scholars, such as Boyatzis (1998), may otherwise construe these assets as threats', enabling proximity to data elicited.

Other forms of qualitative research were considered for this research included grounded theory (GT), Glaser and Strauss (1967), but avoided given its' theoretical construction and

sociological focus. Essentially while GT enables discovery of new phenomenon, has high ecological validity, integrates and offers a structured way to organise qualitative data, it has focus on using empirical data only, offers subjective findings and is a complex process with inherent challenges in presenting the data. Similarly Interpretative Phenomenological Analysis (IPA) was also considered, but viewed as potentially weaker on substance and theoretical flexibility. While IPA offers an adaptable and flexible approach to phenomenological research drilling down to personal accounts of individuals' experiences, it is also viewed as subjective, time-consuming in nature and focusses on small sample sizes also lacking standardisation. While some researchers argue there is also a lack of attention given to the interpretive aspect of IPA in the process, Brocki and Wearden (2006) amongst others, IPA is arguably like many phenomenological studies 'offering unsatisfactory recognition to the integral role of language', Tuffour (2017).

Personal reflexive stance - as registered nurse, passionate environmentalist and organisational development consultant in employ of the organisation being researched, these factors will have influenced the shaping of this research endeavour, as well as the questioning and analysis of the data. Also, as passionate environmentalist, I was aware of biases in my own views, values and behavioural preferences potentially influencing research proceedings.

Additionally, I was aware that I may potentially have been blind to some data being elicited, either through unconscious bias or denial of results that may not have suited my views or

opinions. Through this heightened self-awareness and reflexive position, I was able to continually challenge myself while analysing in both the selection and rejection of data, as well in progressing through the research filtration process of TA. In this awareness, self-challenge and repetitive data scrutiny, I was able to understand my potential researcher bias, while continually reflecting on and embracing potential bias influences in the research process. Holmes (2020) aptly summarises for illustration here: 'it is essential for new researchers to acknowledge that their positionality is unique to them and that it can impact all aspects and stages of the research process.'

Chapter 3: Investigating the role of organisational factors in PEB at work.

A systematic review

3.1 ABSTRACT

The objective of this study was to provide a systematic review examining organisational level factors that are facilitators and barriers to PEB at work. A search of three databases yielded 274 papers, of which 13 further papers were identified after applying inclusion and exclusion criteria on which this systematic review was based. Studies were quality assessed via an adapted mixed methods framework revealing variation in overall research quality. As only initial evidence was noted in three areas identified, caution should be noted in interpreting these findings and drawing conclusions. While there is increasing interest and research in specific organisational factors and PEB discussed, none to date had explored an overview of all factors at play. Overall findings offered here are three key factors facilitating PEB at work: Green Learning, Transformational Leadership and CSR, offering initial evidence for organisational PEB influence and effect. This study builds on existing research through endeavouring to encapsulate organisational PEB factors with limited indications for organisational application, also highlighting methodological improvements for future research.

3.2 PEB Research and organisations

3.2.1 PEB Summary

Having explored the background and wider issues influencing PEB in Chapter one including global warming and associated costs, environmental deterioration, behavioural response, defining PEB, macro and interpersonal communication effects, as well as individual factors including: worry, risk psychological distance and health, this preface to the SLR component of the thesis will now focus on organisational factors and PEB and why they are worthy of exploring more fully.

3.2.2 Pro-Environmental Behaviour - *Specific Organisational Factors Studies*

Several organisational factors are important when considering pro-environmental behaviour and Fatoki's (2019) definition of 'behaviours causing minimal harm or benefitting the environment with employees as important stakeholder in organisational environmental initiatives' offers helpful contextual understanding here. Stern's (2000) two-dimensional definition is also informative, offering key links between both 'intention' and 'impact' to define PEB. Essentially the 'intention' element emphasises actors' environmental motivation or willingness to alter behaviour and the 'impact' element emphasises effects or outcomes on the environment.

With this base knowledge in mind, we now see increasing organisational attention in understanding specific factors that may influence employees' workplace PEB, which in turn are viewed as significant in improving environmental sustainability and strategy.

Temminck, Mearns, & Fruhen (2015) for example, explored antecedents driving Organisational Citizenship Behaviour Toward the Environment (OCBE) in two organisations (n = 547). OCBE refers to employee 'voluntary and unrewarded environmental actions that go above and beyond their job requirements in an organisational setting can crucially contributing to reduced environmental for organisations'. Controlling for tenure, they found significant relationships between OCBE and three factors: employees concern for the environment, perceived organisational support for environmental efforts and organisational commitment. They also found that organisational commitment mediated the relationship between perceived organisational support for environmental efforts and OCBE but not for environmental concern, with broader implications for organisations in guiding employee voluntary environmental actions.

Organisational HRM practices offer a range of key levers that can support an organisation's environmental performance (Jabbour & Santos, 2008). By way of background, typical organisational HRM practices used include the employee lifecycle, namely recruitment, induction, appraisal and promotion. Jabbour et al; (2010) for example, exploring 'green recruitment' in 94 Brazilian organisations, found recruiters selected candidates based on environmental knowledge and motivation. Even in attracting candidates, the Chartered

Institute of Personnel and Development (CIPD) 2007 UK survey, found that 'high-achieving graduates consider an organization's environmental performance and reputation when making decisions for job-applications'. Additionally, rewards systems for both management and employees, have been proposed to encourage both groups to act more environmentally (Daily & Huang, 2001; Jackson, Renwick, Jabbour, & Muller-Camen, 2011)

Education and training are also seen as key to HRM organisational environmental management systems implementation (Daily & Huang, 2001), in addition to employee empowerment (seeing employees as stakeholders in environmental change activities) Strebel, (1996). Finally top management are also seen as key in providing frameworks for environmental improvement including in the success of implementing initiatives (Daily & Huang, 2001; Zutshi & Sohal, 2005).

In evaluating how these current HRM practices were used to promote pro-environmental behaviour across different sized and sectorised organisations, Zibarras and Coan (2015) surveyed 214 organisations. Findings showed HRM practices are not used to generally encourage employees to become more pro-environmental with most prevalent practices incorporating elements of management involvement, supporting the notion that managers are 'gatekeepers' to environmental performance. Additionally, very few organisations carried out any form of evaluation indicating significant opportunity for improved organisational evaluation.

Corporate Social Responsibility as a PEB factor researched by Tian and Roberston (2019), noted that 'while research is beginning to shed light on the predictors of workplace pro-environmental behaviour, understanding of the psychological mechanisms linking the various antecedents to employees' environmentally responsible behaviour and the circumstances under which any such effects are enhanced and/or attenuated is incomplete'. Their data from 183 supervisor-subordinate dyads employed in large and medium-sized casinos and hotels in China and Macau attempted to bridge that gap, revealing employees' perceived CSR indirectly affects their engagement in voluntary PEB through organisational identification, with effects being stronger for employees high in empathy. Essentially, they found that 'when employees perceive their organizations as socially and environmentally responsible, they are more likely to identify with their organization'. A key finding here also being that the indirect link between perceived CSR and workplace pro-environmental behaviour through organisational identity is only present for those who demonstrate moderate and high levels of empathy. These findings show potential for how organisational identification and empathy may shape employees PEB with potential managerial and HRM implications.

Although the influence of top management commitment factor on influencing employees' behaviours has been widely studied with limited evidence (Jabbour & Santos, 2008; Ramus and Killmer, 2007) and direct managers as a factor are viewed as immediately influential organisational representatives, having significant impact on employee PEBs (Ramus & Killmer, 2007; Wesselink et al., 2017). Environmental sustainability research has

also increasingly used transformational leadership theory for improved understanding on leadership initiatives and employee PEB (Graves et al., 2013; Robertson & Barling, 2013). Environmental transformational leadership (ETL) sees managers acting as role models in discussing environmental values, focussing on environmental protection and taking action on environmental issues (Graves, Sarkis, & Zhu, 2013; Robertson & Barling, 2012). Moreover, managers are seen to inspire employees through visioning sustainable futures, outlining plans to deliver against these visions and building confidence for success. ETL broadly comprises three elements of contingent reward, active management by exception, and passive management by exception. Contingent reward involves defining environmental goals, assigning and assessing task accomplishment and managing rewards with leaders creating frameworks that shape employee environmental attention, work activity and PEBs (Graves, Sarkis, & Gold, 2019). In 'active management by exception', managers shape deviations from environmental standards and goals, realign when off-track and manage issues resolution (Bass and Avolio, 1994).

Graves et al.; (2019), noting environmental transactional and laissez-faire leadership PEB research gaps, focussed on these factors in exploring managerial leadership, employee motives and PEB. Their self report Russian management development programme data (n = 165), found that immediate manager's active environmental leadership (transformational, contingent reward and active management by exception), was positively related to employees' PEBs. Managers' passive-avoidant environmental leadership (passive management by exception and laissez-faire), was negatively related to PEBs, but only when

top management was committed to sustainability. Employees' motives were linked to PEBs, but the nature of the relationship varied across motives. Results indicate practical implications for how immediate leaders may shape employee PEB.

Finally, Norton, Zacher and Ashkanasy (2014), sought to explore PEB factors involving employee psychological mechanisms that link organisational policies with behaviour. They noted that organisations are increasingly introducing sustainability policies to encourage environmentally friendly behaviours and examined how employees' green work climate perceptions (organisational and co-worker orientations towards environmental sustainability), may explain psychological mechanisms linking policies and behaviour. Specifically, they were interested in relationships among the perceived presence of organisational sustainability policies, green work climate perceptions and employee reports of their green behaviour (EGB). Their study of 168 employees, showed that green work climate perceptions of the organisation and of co-workers, differentially mediated the effects of the perceived presence of a sustainability policy on task-related and proactive EGB.

From this expanding body of work, we now see both PEB research and organisational interests converging, with heightened awareness and interest on the value, effects and dynamics at play in understanding employee workplace behaviour and PEB research opportunity.

3.2.3 Theoretical constructs and organisational factors in PEB at work

In chapter one we also examined how several psychological theories have been applied in recent PEB research to help explain antecedents and complex interplay in work settings, these including SET, VBN, TPB and CTS.

However, noted shortcomings in these theoretical approaches include: SET lacking sufficient theoretical precision and therefore limited utility (Paillé & Mejia-Morelos, 2014 and Emerson, 1976), while the VBN approach implies a series of sequential causal links related to social norms with inherent reliability risks in explaining tenuous and complex interconnected concepts (Anderson et al., 2005 and Scherbaum et al., 2008). Similarly, TPB raises the question of attitudes, subjective norms, and perceptions of control being wholly sufficient to predict intentions and behaviour (Greaves et al., 2013), while CTS assumes the explicit definition of perceived individual demands and coping capacity are generic for use in wide scale PEB research (Coyne & Lazarus, 1980).

3.2.4 Broader Organisational PEB Factors

There is growing interest in understanding how organisations can support pro-environmental behaviours and while a body of work is building, there is a dearth of research in reviewing organisational broader level factors. Staddon et al.'s (2016)

systematic review of ‘interventions to save energy and change behaviour in the workplace’ (n = 22 studies) for example, concludes that interventions facilitating cultures of ‘enablement’ i.e. social and physical opportunities to save energy, as well as direct support and greater employee control, are also key factors in PEB. More specifically Lo, Peters and Kok (2012), found workplace PEB is a function of both individual factors e.g. attitudes and values, combined with organisational specific influences like management, with the nature of this pivotal relationship being relatively misunderstood. Moreover, their recommendation was in promoting workplace PEB is not just in the physical environment and influential communication, but also active engagement of middle management.

So, in reviewing key employee PEB research in organisational settings at the broader level, we have seen the range of topics has been both expansive and disconnected.

Contributions include: Tian and Robertson’s (2019) research exploring Corporate Social Responsibility CSR, Unsworth et al.’s (2013) work exploring HRM practices and Paillé et al.; (2019) exploring ‘non-green behaviors’, all adding to disparate process models of pivotal interplay between cognition, emotion, intended action and organisational systems influence.

By way of attempted conceptual summary here, Young et al.’s (2015) multi-disciplinary literature review of research exploring behavioural change initiatives created a pro-environmental behaviour (PEB) framework, encompassing group, organisational and contextual factors. While this initial summary overview is helpful, there still remains a gap in

examining the comprehensive factors at play at organisational level in enhancing our understanding of workplace PEB.

3.2.5 The present study

Given this PEB research, limitations and theoretical insight summary, there remains opportunity for a fresh literature approach to synthesise current knowledge of organisational level factors at play in PEB research. Contemporary research by Francoeuer et al., (2021) and Aziz et al., (2018) amongst others on workplace PEB also endorse this knowledge gap, highlighted in Yuriev et. al.'s (2018) recent systematic literature review on PEB methodology and empiricism. To the authors knowledge, prior to this study, no systematic review has been conducted in this area, offering opportunity to better understand collective organisational PEB factors. This work then seeks to address this gap in knowledge, through focus on research in work settings (public, private and third sector) exploring all organisational level factors related to PEB with the following research questions in mind:

What is the role of organisational factors in influencing pro-environmental behaviour at work?

- What organisational level factors are barriers to PEB at work?
- What organisational level factors are facilitators to PEB at work?

The aim is to provide a unique insight and understanding into the macro-organisational comprehensive range of factors, that both impede and facilitate PEB in the workplace.

Theoretical based approaches are of additional interest, with the aim of adding richness to process understanding and system dynamics including Theory of Planned Behaviour, Value Based Norm and Cognitive Theory of Stress as discussed above. An organisational factorial model will be considered in evaluation if indicated, with the intent of developing greater relationship construct clarity.

3.3 Method

This present study applied all five stages of the systematic approach outlined in Briner and Denyer (2012) and also applied by Donaldson-Fielder, Lewis and Yarker (2018). The five steps are: (1) planning the review (clarifying the scope, search strategy), (2) locating studies (review strategy / selection of papers for inclusion), (3) appraising contributions (data extraction), (4) analysing and synthesising information (data synthesis) and (5) reporting “best evidence” (quality assessment).

3.3.1 Search strategy and planning

An initial literature search was conducted during October 2019 and January 2020 exploring broad thinking, conceptual overview and major PEB field studies culminating in a summary statement discussed between researchers, with a view to identifying gaps in current knowledge and refining research focus and methodology. These iterative refinements and

discussions between researchers at this early phase enabled further focus and refinement following Rousseau, Manning and Denyer's (2008) approach, whereby emerging evidence and thinking shapes the final research question and sub questions through 'reflection, debate and reformulation'. Once final question and sub questions were agreed, a search of relevant academic databases was commenced.

In February and March of 2020, a computerised literature search was conducted of three databases: PsycINFO, Business Source Premier (EBSCO), and Scopus Collection. Keywords for searches were generated through iterative discussion between researchers, review of existing literature and consultation with literature search experts to ensure terms were broad enough to capture relevant literature, but not so broad in capturing irrelevant material. The search parameters are listed below after testing an exhaustive range of research strings to generate the most relevant and all-encompassing results (see Table 1: Denyer et al., 2008).

Only references published in English since 2000 were sought: this cut-off date was chosen because the authors were aware of limited findings and research prior, having cross-referenced with a fourth researcher and specialist in the PEB field. A digital 'Dropbox' was used to store and manage the studies identified. Duplicate records were removed before the selection process was conducted and the following Table 1 illustrates the search strategy process with the following databases searched.

3.3.2 Review strategy - selection of papers for inclusion

Initial searches and resulting bibliographic records were stored in 'Mendeley' (software reference management tool) with duplicates then removed. After a series of sifts further shortlisted results were then exported to a text file with final papers for SLR inclusion identified through continued series of sifts including or excluded papers at each stage, based on predefined search terms. Inclusion and exclusion criteria were also identified in an additional search sifting amended SPIO framework (the Interventions section is both interventions and strategy), adapted from Richardson, Wilson, Nishikawa and Hayward (1995) as in Table 2 below. This helped support our aim of generating greater depth in our analysis, as this research had intended research focus on one specific environment at work. SPIO is an abbreviation of the narrow screen inclusion and exclusion criteria framework namely 'Study, Participants, Interventions and Outcomes'. The overall phased research activity process at each stage is also illustrated in Figure 1 PRISMA flow diagram.

3.3.3 Selection of papers for inclusion - Data Review Stages

Stage one: Title sift

Two reviewers independently reviewed article titles in a primary broad-screen based sift of all titles of retrieved records against the inclusion and exclusion criteria illustrated to ensure all relevant and valid articles were included and excluded within the review. Any

discrepancies were then moderated by a third researcher and disagreements resolved through discussion.

Stage two: Abstract sift

Two independent reviewers then subjected the abstracts to narrow screening process using amended SPIO specific inclusion and exclusion criteria (Table 2). All those abstracts meeting inclusion criteria or shortlisted for full paper review were retained with disagreement of reviewer selections resolved through discussion at a meeting. In the event there was still no agreement, a third reviewer was asked to independently review article abstracts against inclusion and exclusion criteria. The flow PRISMA diagram in Figure 1 sets out the literature retrieval and selection process.

3.3.4 Search Terms Established via Search Strategy

Table 1: Search Terms

Study	Interventions/Strategy	Outcomes
Organi*	Strateg*	Pro-Environmental Behavior*
Work*	Policy	Global warming
Employ*	Green HRM	Behaviour change
Climate change	CSR	Environmental behavior*
Cultur*	Training	Sustainable behavior*
Structur*	Education	Workplace pro-Environmental Behavior*
	Organisational factors	Workplace greening
	System*	Greening Behavior*

Search Legend:

- Organi* includes organisation and organisational
- Work* includes workplace
- Employ* includes employment and employer
- Cultur* includes culture and cultural
- Strateg* includes strategic, strategy and strategies
- Behavior* includes behaviours and behaviour(s)
- Structur* includes structures
- System* includes systems

Table 2: Narrow screen inclusion and exclusion criteria

SPIO	Inclusion	Exclusion
Study	<ul style="list-style-type: none"> • Qualitative and quantitative empirical studies to capture research through different methodologies • Time period: from 2000 given limited research prior to this date • Publication: English language, peer reviewed 	<ul style="list-style-type: none"> • Dissertation (Phd) theses • Non empirical studies (purely theoretical or descriptive) • Books or conference proceedings • Unpublished or non-peer reviewed articles Studies concerned with testing, describing or refining theoretical models
Participants	<ul style="list-style-type: none"> • All public, private and third sector organisations to capture limited research available • Adult population (age 18+) 	<ul style="list-style-type: none"> • Minors - population studies aged 17 or below
Interventions/strategy	<ul style="list-style-type: none"> • Studies that explore organisational factors that affect PEB • Case studies, longitudinal and cross-sectional design studies • Studies related to PEBs 	<ul style="list-style-type: none"> • Intervention studies not exploring organisational factors that affect PEB • Intervention studies not related to PEBs • Studies related to health, nonworkplace or bio-physiological effects • Studies concerned with external environmental effects, factors or outcomes. • Studies related to PEB factors at individual level
Outcomes	<ul style="list-style-type: none"> • Includes outcome measures/target variables where intervention(s) aim to achieve PEB change 	

3.3.5 Appraising contributions

Data extraction

We developed a data extraction tool also utilising the amended SPIO structured approach for consistency. The data extracted included information on comprehensive descriptive statistics, the study design and purpose, the population sample and selection methods, country of origin intervention used, the procedure manipulation, context, the outcomes measured and achieved in each paper as well as research limitations and implications. Each paper was reviewed fully and the relevant data extracted into the tool for synthesis and analysis. Data extraction was conducted by one researcher initially, then reviewed by a second researcher for consistency of data handling and comparison. Any discrepancies or points of disagreement were adjudicated by a third researcher. In addition, a 'pearl-growing' process was undertaken, in which we reviewed the reference lists of all the papers included in the final list to identify any further studies for inclusion.

3.3.6 Analysing and synthesising information

Data synthesis

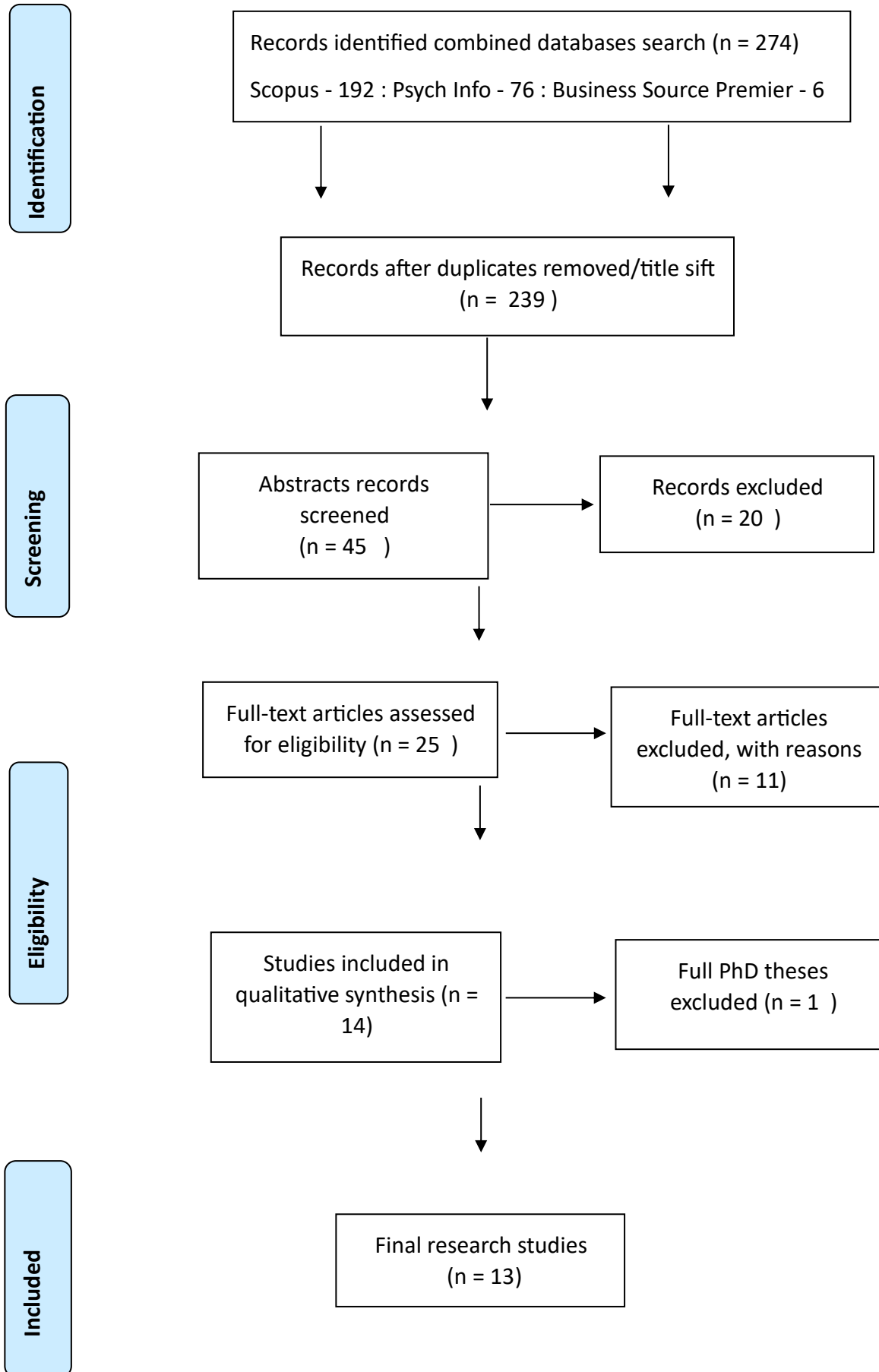
Papers were analysed by theme through combined thematic and content analysis enabling 'pattern' and 'sense-making' construction, utilising Maguire and Delahunt's (2017) six-step approach

1. Familiarisation - reading a research paper, note taking
2. Coding - highlighting key words, sentences and phrases to assigning codes

3. Generating themes - analysing codes generated to identify patterns and themes.
4. Reviewing themes - collating useful, accurate representations of the data.
5. Defining/naming themes - definition clarity, understanding and prevalence to research data
6. Writing up themes - using themes generated to identify research gaps and empirical research

As the results of the literature search and data extraction papers yielded were limited (n = 13) and the interventions covered by these studies were highly heterogeneous, a quantitative meta-analysis was not possible. Instead, an explanatory synthesis was conducted and findings are presented in a narrative format. Data synthesis was conducted initially by one researcher, then an iterative process of review and revision was undertaken, in which a second researcher checked for consistency and credibility of interpretation, by cross-referencing the narrative text with the information provided in the data extraction tool (referring back to the original papers where further information was required) and improvements were made following discussion of any discrepancies and omissions identified. Finally, a third researcher conducted a check of the resulting synthesis to ensure overall consistency of the final narrative.

Figure 1 - PRISMA Flow Diagram Database Search and Results



3.3.7 Reporting 'best evidence'

Quality assessment

To reduce the risk of bias, we conducted a quality assessment across all 13 papers using an approach based on a slightly adapted version of the methodology set out in Snape et al., (2017) and Lewin et al., (2015). Snape et. al; (2017) provide two checklists for assessing evidence quality: one for qualitative and the other for quantitative evidence. In addition, the questions regarding ethics included in the qualitative checklist provided by Snape et al.; (2017) were applied to all papers. Two researchers independently conducted the quality assessment process and met to discuss discrepancies; a third researcher resolved any disagreements. Following production of quality assessment tables, the results were reviewed to produce evidence statements with gradings based on an abridged Snape et al., (2017) and Lewin et al., (2015) framework. A summary assessment of evidence statements against all final shortlisted papers is provided in Table 6.

3.4 Results

3.4.1 Study characteristics

As shown in Table 3 below, there is considerable heterogeneity in the range of studies in terms of country research was conducted, ranging from 3 studies in the UK (the largest single country body of research), 8 studies were conducted in Europe overall with 3 in the

UK, 2 in the Netherlands and 1 in France, Italy and Greece respectively. The remaining 5 studies covered Turkey, Pakistan, China and Macau, South Africa and Russia.

Overall, there was also a variation in terms of design, with only 1 study including a control group or comparison group, all 13 studies collected cross-sectional survey measurement response data. While data collection also shows variation with 1 study involving data collected at multiple (more than two) time points, 5 studies involving data collection at two time points, and the remaining 7 studies collecting data at just one point with inherent limitations of common method bias.

3.4.2 Participant population characteristics

Similarly, as illustrated in Table 3 there was also considerable variation across studies in terms of the number and type of participants. Participant populations varied from 16 to 531, with 12 studies involving more than 94 participants and one study comprising 16 participants. Across all 13 studies, there were a total of 2,976 participants, in terms of gender for those 12 studies specifying gender split for at least some of their participants, the proportion of participants who were women ranged from 19% to 63%, with women making up less than 50% in 7 of the 13 studies that specified gender split and women making up more than 55% of participants in 3 of the studies. Of the 2497 participants in studies for whom gender information was provided it seems there was balanced representation overall with 1265 (50.6%) being women.

Participants' age was specified in the majority (9/13) of the studies and also heterogeneous in reporting and content: the lowest age reported was 18 and the oldest age mentioned was 70. Only 5 of the studies provided any data on tenure, while those that did provide this information were assessed as incomparable, as differential data was supplied in the form of average work experience, average time in role and average career.

Of those 4 studies supplying information on the management level of study participants, only 1 study explicitly stated participants were senior level, 3 studies called their participants "manager" or "middle manager", 4 studies included a mixture of leadership levels, and 1 study included both managers/leaders and other participants. The occupational setting of the participants was only specified in 2 of the studies and was equally varied, ranging from one specific organisation (1 study) to a number of specific organisations (1 study). More than half the studies (7) did not report any data regarding tenure of participants and of those remaining 6 studies that did, this was highly variable ranging for 2 to 26 years also reporting in varying formats i.e. average, range and means.

Industry sectors studied was also highly varied, with a predominance of studies in Higher Education (7 studies), hospitality (3 studies) being the second most prevalent, with the remaining (3 studies) being in healthcare, housing associations and mixed industry.



Student number 13176001

Table 3 Descriptive Statistics

Author and date	Country	Sample	Industry Sector	Gender	Age	Education	Profession(s)	Tenure
Börner, D., Kalz, M. & Specht M (2015)edit	Netherlands	94	Higher Ed.	61% m 39% f	26 to 65	Unavailable	Academic mixed	2 to 26 yrs
Fatoki, O. (2019).	South Africa	192	Hospitality	53% m 47% f	31 to 50	Unavailable	Hospitality mixed	Unavailable
Foster, D., Linehan, C., & Lawson, S. (2014).	UK	16	Higher Ed.	68% m 32% f	Unavailable	Unavailable	Unavailable	Unavailable
Gkorezis, P., & Petridou, E. (2017).	Greece	191	Mixed	45% m 55% f	Average 31yrs	BSc 30% MSc 38%	Unavailable	Mean 7 yrs
Graves, L. M., Sarkis, J., & Gold, N. (2019).	Russia	152	Higher Ed.	53% m 47% f	Unavailable	Unavailable	Mixed mgt.	Unavailable
Gregory-Smith, D., Manika, D., Wells, V. K., & Veitch, T.(2017).	UK	368	Higher Ed.	37% m 63% f	18 to 70	Unavailable	Mixed	Unavailable
Islam, T., Ali, G., & Asad, H. (2019)	Pakistan	201	Hospitality	72% m 28% f	26 to 40	Unavailable	Unavailable	5 years plus
Pinzone, M., Guerci, M., Lettieri, E., & Huisingh, D. (2019).	Italy	260	Hospitals	81% m 19% f	Average 46.2 female 50.69 male	Unavailable	Mixed	Average 19yrs
Raineri, N., & Paillé, P. (2016).	France	531	Higher Ed.	27% m 73% f	40 yrs or less	Master's 82%	Mixed mgt. & non mgt.	5yrs or less
Tezel, E., & Giritli, H. (2019).	Turkey	95	Higher Ed.	47% m 53% f	20 to 60yrs	BSc 50% MSc 29%	Unavailable	Unavailable
Tian, Q., & Robertson, J. L. (2019).	China & Macau	183	Hospitality	47% m 53% f	Average 29yrs	Unavailable	Supervisors/subordinates	1.99yrs
Wesselink, R., Blok, V., & Ringersma, J. (2017).	Netherlands	479	Housing Ass.	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable
Zibarras, L. D., and Coan, P. (2015).	UK	214	Mixed	58% m 42% f	Average 38.5	Unavailable	Directors/mixed Managers	Unavailable

3.4.3 Interventions, strategy characteristics and studies

The range of studies and measures exploring organisational level PEB covers a broad spectrum as in Table 4 below from areas as diverse as: education via ambient learning displays and energy consumption, leadership behaviour (including top management), workplace 'spirituality', institutional support, goal setting, organisational identification, perceived Corporate Social Responsibility (CSR) effects, 'green' training, goal congruency (organisational/employee), as well as locus of responsibility (employee/organisational alignment and Human Resource Management practices).

The design of the 13 studies was similarly mixed with 9 studies being a cross-sectional survey over one time period and 3 studies tracking energy usage over two time periods (Börner et al., 2015; Foster et al., 2014; Gregory-Smith et al., 2017). One study explored 'green goal difficulty over 4 time periods (Pinzone et al., 2019), all via survey methodology. Excepting those 9 studies that were one-time cross-sectional surveys, duration of intervention in the remaining 4 studies was also highly variable, with one study over a three-month period (Börner et al., 2015), one over six weeks (Foster et al., 2014), one study while over two time periods failed to report time duration of study (Gregory-Smith et al., 2017), finally Pinzone et al.'s (2019) study was delivered over a three months period. Intervention content was similarly varied across all these organisational level PEB studies, as discussed below.

As illustrated in Table 4, only 4 of these studies evaluated interventions (Börner et al., 2015; Foster et al., 2014; Gregory-Smith et al., 2017) and Pinzone et al., 2019), while the remaining 9 studies used either existing survey data (Zibarras & Coan, 2015) or utilised available survey measures to research specific PEB related concepts only. The 4 intervention studies outlined in more detail below comprise: (Börner et al., 2015) examining how differing learning VDU display design affects energy use, secondly Foster et al.,

(2014) exploring group feedback and goal setting in interacting with an 'energy widget, thirdly Gregory-Smith et al., (2017) studying energy saving intentions following a marketing campaign and finally Pinzone et al., (2019) researching 'green goal difficulty' and perceived organisational support for the environment (POS-E) following a 'green training' initiative.

3.4.4 Education, Social Marketing, Green Training and Group Feedback

The first of these four studies (Börner et al., 2015) had an overall goal in raising employees' awareness on environmental education, introducing relevant conservation strategies, and initiating environmental workplace learning, with dependent variables measured being environmental learning and pro-environmental behaviour. For environmental learning, paired questionnaires were used to measure the individual components within each related theoretical construct. PEB was determined through self-reported conservation activities performed as well as actual energy consumption data. Specifically, their methodology sought to measure whether raised awareness on actual energy consumption fostered a change in behaviour among employees leading to reduced total consumption for the employing University organisation. Interventions comprised 'four prototypes emulating ambient learning displays deployed in entrance areas of four chosen campus buildings comparable in structure and size', deployed such that everyone entering or leaving those buildings passed by respective prototypes. Ambient learning displays are essentially static visual display units emitting desired messages positioned to gain attention by those passing by.

Gregory-Smith et al.'s (2017) UK study in Higher Education, looked at how an environmental social marketing intervention would affect employees' energy saving intentions, examining the influence of both

individual (attitudes, knowledge, norms) and organisational (perceived organisational behaviour, perceived organisational support) variables on intentions to save energy in the workplace. The intervention recruited and trained a network of green champions to 'take sustainability message to their workplaces' i.e. motivate energy saving actions among university employees. A dedicated intranet site was created so that the green champions could share best practice and employees could make pledges to switch off lights, computer/screens.

To evaluate intervention success pre and post-intervention, questionnaires measured perceived organisational behaviour and support as well as individual variables, along with employees' energy saving intentions and a series of open-ended questions to gain a more in-depth perspective, Pinzone et al., (2019), offered a novel 4 site/time period survey design, exploring the effects of how green training is associated with employees' engagement in voluntary PEB with 260 healthcare professionals in Italy. Following 'green' training programmes implemented to inform hospital professionals about environmental issues and activities, and enable contribution to the hospital's 'green' goals, employees were surveyed on: employee attitudes, employee behaviours and 'green' training. The specific details of the green training initiative were not specified.

Finally, Foster et al., (2014) with a smaller sample of 16 participants explored two interventions of group feedback and group goal-setting in an organisational energy intervention design, implemented via a fourstage study (baseline, group feedback, group goal setting and baseline) for a duration of 4 months, tracking energy usage behaviour before, during and beyond interventions.

3.4.5 Transformational Leadership Behaviour

Transformational leadership theory is where leaders work with followers beyond immediate self-interests identifying perceived needed change and a vision to guide change through influence and inspiration, while executing the change in harmony with committed members of an employee group. This shift beyond self-interests intentionally elevates follower's levels of maturity and ideals, as well as concerns for achievement (Odumeru & Ogbonna, 2013). As discussed in 1.2., ETL includes elements of leaders' visioning, shaping follower behaviours, role modelling, acting on environmental issues and managing follower tasks in line with aligned environmental team/organisational values.

Three descriptive studies researched varying aspects of this leadership behaviour in relation to PEB. Firstly, Graves et al., (2019), explored the association between top management, managerial leadership behaviours and employee motives. Using self-report data from 165 Russian management development program attendees, they examined the links between PEB antecedents of top management commitment to sustainability, the immediate manager's environmental leadership, and the employee's motivation and corresponding PEBs. They also tested whether top management commitment moderated the impact of immediate managers' leadership on employees' PEBs.

Secondly Wesselink et al., (2017), explored associations with transformational leadership behaviours and institutional support on employee PEB. Specifically, they examined the extent to which institutional support, consisting of perceived organisational support for the environment (POS-E), leadership support and exemplary leadership behaviour influences employees' intention toward PEB.

Finally, Fatoki (2019), explored the relationships between leadership behaviour, institutional support (and workplace spirituality (meaning, connectedness and purpose) on hotel employees' PEB in a one-time

sample survey in South Africa. Regarding transformational leadership, Fatoki (2019) examined whether there was a positive relationship between related behaviours such as demonstrable environmental concern, provision of environmental recycling facilities and appreciation of green behaviours and employees' workplace PEB.

All three studies had wide geographic spread (South Africa, Russia, Netherlands) utilising cross-sectional survey methodology also using transformational leadership theory as a base for their studies (Bass & Avolio, 1994).

3.4.6 Sustainably Certified Buildings

Tezel & Giritli's (2019) descriptive study surveyed 95 respondents on environmental values via Thompson and Barton's (1994) scale assessing anthropocentric and ecocentric motives for PEB. Essentially ecocentric value in this scale implies all things in the ecosystem have intrinsic value and deserve protection, whereas anthropocentric value implies environmental protection is important because of nature's contribution to human welfare. . The original scale of 33 reduced to 10 items used here includes examples like 'nature is valuable for its own sake' (ecocentric subscale item) and 'nature is important because of what it can contribute to the pleasure and welfare of humans' as (anthropocentric subscale item'. Their study compared sustainably certified and non-certified buildings via two independent sample comparisons to understand the influence of sustainable building certificates on occupants' environmental values, beliefs, awareness and PEBs.

3.4.7 Organisational HRM

One descriptive study by Zibarras and Coan (2015) explored the extent to which UK organisations use human resource management (HRM) practices; such as training, management support and reward systems (Daily & Huang, 2001), to promote pro-environmental behaviour through workplace HRM policies and initiatives. In their one-time survey sample of 214 UK organizations representing different sizes and industry sectors, their respondents were directors and managers, 42% female, aged 38.5 years. As well as company and respondent demographics, organisations surveyed were asked ‘to what extent’ do they use five categories of HRM practices to encourage employees to behave pro-environmentally. These five categories were ‘employee life cycle (e.g. recruitment and selection), ‘rewards’ (incentives and programmes), ‘education and training (e.g. ‘training courses’, ‘employee empowerment’ (e.g. green champions and task forces) and ‘manager involvement’ e.g. ‘actively championed by senior management’.

3.4.8 Corporate Policies and Practices

Raineri and Paillé’s (2016) observational study explored the linkage between corporate policy (and supervisory support) with Environmental Citizenship Behaviours (ECB), via cross-sectional survey methodology. Demographics were detailed revealing a one-time survey of 531 respondents in higher education in France, 63% female respondents, aged 42 or less, most of Masters level study (82%) and of mixed professional groups of 5 years tenure or less.

3.4.9. Corporate Social Responsibility (CSR)

Finally, three observational studies explored CSR and PEB. Firstly Gkorezis and Petridou (2017), examined organisational identification as mediator, secondly Islam, Ali and Asad (2019) examined organisational identification and CSR with the moderating role of empathy and lastly (Tian & Robertson (2019), researched effects of perceived CSR on employee voluntary PEBs with sample sizes of less than 200 within mixed industry and hospitality sectors with limited demographic data, all via one-time survey methodologies in Greece, Pakistan, China and Macau. Islam et al., (2019), surveyed over 200 pairs of both supervisors and subordinates who rated each other on organisational identification and CSR as causative factors in relation to workplace PEB and the mediating factor of empathy.



Table 4 Studies and Interventions

Author and date	Research Focus	E/SM/ GT/GF	Lead Behav.	SCB	Org. HRM	CPP	CSR	Measures Organisational	Intervention	Design
Börner, D., Kalz, M. & Specht M (2015)	Ambient learning display workplace design	✓						Environmental learning and PEB	Y	2x2, 4 groups, all treatments
Fatoki, O. (2019).	Institutional support (leadership & org.) and workplace spirituality		✓					Institutional support (leadership & org) workplace spirituality	N	No manipulation
Foster, D., Linehan, C., & Lawson, S. (2014).	Group performance feedback/goalsetting in org . energy intervention	✓						Group performance feedback & goalsetting on energy use	Y	4 stage, 4 months, A-B-A design
Gkorezis, P., & Petridou, E. (2017).	Perceived CSR and organisational identification						✓	Perceived CSR and Organisational identification	N	No manipulation.
Graves, L. M., Sarkis, J., & Gold, N. (2019).	Roles of top mgt. commitment, managerial leadership & employee motives		✓					Top management behaviours, leadership and commitment	N	No manipulation.
Gregory-Smith, D., Manika, D., Wells, V. K., & Veitch, T.(2017).	Examining effects of an environmental social marketing intervention	✓						POS-E, energy saving knowledge	Y	Marketing campaign Pre & post survey
Islam, T., Ali, G., & Asad, H. (2019)	CSR & organisational identification with moderating role of empathy						✓	CSR, organisational identification, empathy	N	No manipulation.
Pinzone, M., Guerci, M., Lettieri, E., & Huisingh, D. (2019).	Effects of green training on PEBs and job satisfaction	✓						Green training, green goal difficulty POS-E,	Y	4 site survey post green training. programme
Raineri, N., & Paillé, P. (2016).	Employee Environmental Beliefs and Commitment effects on ECB		✓			✓		Environmental Policy Supervisory Support	N	No manipulation.
Tezel, E., & Giritli, H. (2019).	Identifying factors impacting employee PEBs in (non) certified buildings			✓				Non-certified and sustainable buildings differentials	N	No manipulation.
Tian, Q., & Robertson, J. L. (2019).	Effects of perceived CSR on employee voluntary PEBs						✓	Perceived CSR Organisational Identification	N	No manipulation.
Wesselink, R., Blok, V., & Ringersma, J. (2017).	Leadership support/behaviour and POS-E on PEB		✓					POS-E , Institutional support, Leadership Behaviour	N	No manipulation.
Zibarras, L. D., & Coan, P. (2015).	Organisational HRM practices used to promote PEB				✓			Most successful & prevalent HRM practices for PEB	N	No manipulation.



POS-E = Perceived Organisational Support for the Environment

CSR = Corporate Social Responsibility

PEB = Proenvironmental Behaviour

ECB = Environmental Citizenship Behaviours

PBC = Perceived Behavioural Control

ECB = Environmental Conscious Behaviour

HRM = Human Resource Management

ES = Environmentally Specific

THEMES : E/SM/GT/GF = Education, Social Marketing, Green Training and Group Feedback

Lead Behav. = Leadership Behaviour

SCB = Sustainably Certified Buildings

Org. HRM = Organisational Human Resource Management

CPP = Corporate Policies and Procedures

CSR = Corporate Social Responsibility

3.5 PEB Measures

Study outcomes across all 13 papers are outlined in Table 5 below illustrating a summative understanding against research objectives:

What is the role of organisational factors in influencing pro-environmental behaviour at work?

- What organisational level factors are barriers to PEB at work?
- What organisational level factors are facilitators of PEB at work?

3.5.1 Outcome focused PEB measures

Table 5 below illustrates full measures and results discussed above across all 13 studies. PEB measures used across all studies were highly variable in types of measure and number of items used (five to ten items - all likert scales). The leadership category PEB studies measures were firstly from Graves et al., (2013), assessing the extent to which respondents performed PEB behaviours. They received permission to adapt 27 items from the Multifactor Leadership Questionnaire (MLQ) Form 5x-Short (Bass & Avolio, 1994), to measure employees' perceptions of their managers' environmental leadership (Graves et al., 2013). They describe that 'items assessed transformational leadership (five subscales of 3 items each; 15 items, $\alpha = .97$), contingent reward (3 items, $\alpha = .80$), active management by exception (3 items, $\alpha = .92$), passive management by exception (3 items, $\alpha = .86$), and laissez-faire behaviours (3 items, $\alpha = .89$)'. Following MLQ completion, respondents also indicated how often managers displayed each behaviour on a 5-point likert scale (0 = not at

all to 4 = frequently if not always). The second of these leadership studies (Fatoki, 2019), used Robertson and Carleton (2017) scale, where both clusters of behaviour 'ecologically minded commuting' (e.g. walking/cycling to work) and PEB workplace choices (e.g. printing documents), were measured.

The final two papers : Wesselink et al., (2017) used Blok et. al.,'s (2015) ten-item scale, measuring employee workplace PEB choices like the use of scrap paper, while Raineri & Paillé (2016) tapped Boiral and Paillé et al.,'s (2012) rating scale, measuring how employees go about initiating 'innovative and spontaneous behaviour' aimed at environmental improvement e.g. "I encourage my colleagues to adopt more environmentally conscious behaviours," and "I stay informed of my company's environmental efforts." This scale was also in Raineri and Paillé (2016) paper exploring corporate policies and procedures.

The three studies exploring CSR (Gkorezis & Petridou (2017), Islam et al. (2019) and (Tian & Robertson (2019); used three items from Bissing-Olson, Iyer, Fielding and Zacher (2013) that describe the extent to which employees' formal work tasks were conducted in environmentally friendly ways and Lamm, Tosti-Kharas and Williams' (2013) twelve item OCBE measure (e.g. disposing of environmental waste). Regarding the latter measure of OCBE, employees PEB has been 'conceptualised and operationalised as a type of environmental organisational citizenship behaviour (OCBE), (Boiral and Paillé, 2012: Lamm et al., 2013). They therefore operationalised voluntary PEB as OCBE using Lamm et al.'s (2013) twelve item OCBE measure. Sample items include items such as: "He/ she is a person who properly disposes of electronic waste" and "He/she is a person who prints doublesided."

Finally, the four intervention studies by Börner et al., (2015): Foster et al., (2014): Gregory-Smith et al., (2017): Pinzone et al., (2019), used firstly a specifically designed 22 item questionnaire by the authors to measure environmental learning and PEB, secondly specifically designed interview questions to measure energy goal setting, feedback and consumption and thirdly energy saving intention questions also designed by the researchers and finally three items from Alfes, Shantz and Truss (2012) on green training such as: 'I am provided with sufficient opportunities for training and development in environmental management'.

3.5.2 Factor focused measures

The singular sustainably certified buildings study (Tezel & Giritli', (2019) apparently used 14 items related to 'willingness to engage in PEB' although selected based on 'an extensive literature review of environmental psychology of workplace and selected because they appeared numerous times in the literature and ranked highly as environmentally responsible actions.' However, items used, sources and the questionnaire are not provided. While the organisational HRM study (Zibarras & Coan, 2015), evaluated practices used to encourage pro-environmental behaviour asking: 'To what extent does your organization use the following methods to encourage staff to behave in a pro-environmental way' on five categories such as 'rewards' and 'training'.

3.5.3 Specific Study Measures

Those four case studies exploring leadership (Graves et al. 2019: Fatoki, 2019: Wesselink et al. 2017 and Raineri & Paillé 2016) exploring key measures of top management commitment

to sustainability, environmental leadership, leadership behaviour and support and manager support against PEB, used measures predominantly adapted from Blok et al (2015).

The singular sustainably certified buildings comparison case study (Tezel and Giritli, 2019) assessing environmental values were assessed with Thompson and Barton's (1994) scale assessing anthropocentric/ecocentric PEB motives. Aside from company and respondent demographics (Chartered Management Institute, 2009), Zibarras and Coan's 2015 singular case study exploring organisational human resource management specifically examined most prevalent practices used to encourage PEB and those most successful practices in encouraging employees to PEB (Daily, Bishop, & Massoud, 2012; Gonzalez, Sarkis, & Adenso-Diaz, 2008; Jabbour & Santos, 2008; Paulraj & de Jong, 2011; Ramus & Steger, 2000).

Similarly, Raineri and Paillé's (2016) singular case study examining corporate policies and procedure, measured the positive relationship between perceived corporate environmental policy and employee environmental commitment and mediation with individuals with high (versus low) levels of personal environmental beliefs (Boiral & Paille, 2012; Ramus & Steger, 2000). Three case studies explored corporate social responsibility (Gkorezis & Petridou, 2017; Islam et al.'s 2019; Tian & Robertson, 2019) with all three measuring CSR via tapping Turker's (2009) rating scale. Also, Lamm et al.'s (2013) 12-item scale (OCBE) was adapted to measure Workplace PEB in two of these studies (Islam et al.'s 2019; Tian & Robertson, 2019)

Finally, education, social marketing, green training and group feedback was measured through four studies with two of these developing their own measures PEB measures for specific experimental designs. Börner et al. (2015) used PEB questions tapping actual knowledge about consumption, attitude towards conservation, and individual actions performed. Secondly Foster et al., (2014) used a combination of quantitative questions such as group-based feedback and goal setting on energy consumption pre and post intervention and qualitative questions such as 'do you feel the group used more or less energy during the study. One study's questionnaire (Gregory-Smith et al., 2017) was not originally designed for the purpose of testing hypotheses, so validated academic scales were not used to measure the constructs, therefore, this study should be treated as exploratory and items were compiled by researchers. Lastly Pinzone et al. (2019) adapted organisation-focused OCBEs and co-worker focussed OCBEs measures from Boiral and Paillé (2012), 'green' goal difficulty items from Wright (2004) and 'green' (POS) items from 'Short POS scale' by Eisenberger, Huntington, Hutchison and Sowa (1986).

3.6 Descriptive Studies

3.6.1 Transformational Leadership Behaviour

In the first of these studies on leadership Graves et al. (2019) in exploring associations between top management, leadership behaviours and commitment (and employee motives) with PEB collecting cross-sectional survey data using the Multifactor Leadership Questionnaire (MLQ) to adapt 27 items. These included top management commitment to sustainability assessed by three items to measure 'environmental leadership' (ETL), three

items on motivation and Eleven items assessing PEBs (17 in total). In essence as described in 3.3.2, they were endeavouring to show causative links between several elements of transformational leadership: environmental leadership, top management commitment to sustainability and active leadership and employees' PEB.

There was modest support for Hypothesis 1: Top management commitment was marginally positively related to PEBs where respondents who perceived higher levels of top management commitment to sustainability, tended to report more PEBs. Consistent with Hypothesis 2: Active leadership was shown to be positively related to PEBs, with respondents reporting substantially higher PEBs when their managers engaged in active leadership.

Wesselink et al.'s (2017) study, explored associations with leadership, institutional support and understanding the influence of the Theory of Planned Behaviour in private company settings in relation to PEB. As there were no significant differences noted between the four housing associations observed, the data of all organisations were analysed together. The transformational leadership variable elements were adopted from Blok et al. (2015) containing three 'role modelling' statements: 'I show PEB when my direct supervisor behaves pro-environmentally in the workplace', 'It is important to me that my direct supervisor shows PEB at the workplace' and 'Seeing my direct supervisor acting pro-environmentally influences my own acting' all on likert scales.

To test the effects of the different factors of 'intention to act' and PEB in the workplace, multiple regression analyses were completed, with the overall model proving significant.

The factor 'leadership behaviour' had the most significant relation with intention to act with a coefficient of also in line with earlier findings (i.e. Blok et al., 2015). Additionally, institutional support showed strong significant effect.

A second regression was done to see to what extent identified factors affect PEB with the overall model being significant. Two factors showed significant contribution, firstly institutional support as highly significant i.e. higher institutional support has a positive association with actual PEB, secondly leadership behaviour showed a significant relation with actual behaviour.

Finally, in a complementary regression analysis, POS-E and leadership support were treated as two different constructs, showing that POS-E had a significant relationship with both 'intention to act' and actual PEB. Leadership support does not have a significant relationship with one of them, indicating the relationship of institutional support is mainly on the account of POS-E i.e. leadership support does not seem to make a difference.

The last of these leadership focussed studies, Fatoki (2019), explored the relationships between leadership behaviour, institutional support and workplace spirituality. Specific transformational leadership measures as mentioned in 3.3.1 were demonstrable environmental concern, provision of environmental recycling facilities and appreciation of green behaviours and employees' workplace PEB, using 8 questions adapted from Wesselink et al., (2017). Results support significant positive relationships between leadership behaviour, institutional support and workplace spirituality and pro-environmental behaviour, showing all three causative hypotheses of the study were supported.

Additionally, Raineri and Paille (2016) predicted a direct link between supervisory support and environmental citizenship behaviours revealing this relationship was positive and

3.6.2 Sustainably Certified Buildings

In studying 'non-certified' and sustainable buildings 'workplace setting' differentials, Tezel and Giritli's (2019) descriptive study showed mixed results. In analysing environmental belief, values and awareness alongside a PEB survey rating scale, spearman correlations showed occupants of certified buildings are more likely to have higher awareness scores than those of occupants of noncertified buildings on their environmental awareness scale. Contrastingly, occupants of noncertified buildings report higher PEB scores than occupants of certified buildings.

3.6.3 Organisational HRM

Zibarras and Coan (2015) explored the extent to which UK organisations use human resource management (HRM) practices to promote pro-environmental behaviour through workplace HRM policies and initiatives finding the top three most effective HRM practices indicated by organizations were encouragement via internal awareness-raising campaigns (education and training), active championing by senior management (manager involvement) and set-up of green champions (employee empowerment).

Spearman correlations were conducted to determine whether there was a significant relationship between how effective the practices were considered and the extent to which they were used. Researchers therefore correlated the number of organisations that considered effective methods with the ranked data indicating extent of use finding that there was a significant correlation between the two. suggesting that those methods considered most effective were used the most often. The correlation is noted as negative because the highest ranking HRM practice is ranked as 1. They also asked respondents to indicate whether they evaluated the effectiveness of the HRM practices in encouraging employees to engage in environmental behaviour to determine whether organisations actually conducted any evaluation of HRM practices to determine their effectiveness.

Out of the 214 participating organizations, only 16% (N = 34) indicated that they evaluated the effectiveness of their HRM practices. Many organisations (54%/N=117) said they did not evaluate the effectiveness of their HRM practices, while 18% (N = 38) stated they did not know. There were missing data from 12% of the sample. The top three most prevalent methods used within organisations entailed manager involvement, such as being actively championed by senior management or informal encouragement by line management.

3.6.4 Corporate Policies and Practices

Raineri and Paille's (2016) observational study explored the linkage between corporate policy (and supervisory support) with Environmental Citizenship Behaviours (ECB), via cross-sectional survey methodology. They found that employee environmental commitment did mediate the positive effects of corporate environmental policy on OCBE, secondly there was an indirect effect of supervisory support on OCBE. Finally, there were positive and significant structural model results between supervisory support and environmental citizenship behaviours.

3.6.5 Corporate Social Responsibility (CSR)

The first of three observational studies exploring CSR and PEB, by Gkorezis and Petridou (2017) demonstrated that CSR is significantly indirectly related to pro-environmental behaviour through organisational identification. Islam et al.'s (2019) examination of organisational identification and CSR with the moderating role of empathy conducted direct associations between the variables measured, hierarchical regression then showed perceived CSR was found to have a significant impact on PEB.

Lastly (Tian & Robertson, 2019), researched effects of perceived CSR on employee voluntary PEBs, showing the interaction effect of empathy on the indirect relationship between perceived CSR and pro-environmental behaviour through organisational identification was significant. Further examination revealed that perceived CSR is not indirectly linked to voluntary PEB via organisational identification for employees who are low in empathy.

3.7 Intervention Studies

3.7.1 Education, Social Marketing, Green Training and Group Feedback

As discussed and illustrated in Table 4, only 4 of these studies evaluated interventions (Börner et al., 2015; Foster et al., 2014; Gregory-Smith et al., 2017; Pinzone et al., 2019).

The first of these (Börner et al., 2015) showed results of no clear evidence that the design of their ambient learning displays (ALD's), influences learning outcome or that the displays lead to PEB. Specifically, the relevant hypothesis that 'there will be a significant increase in the measured pro-environmental behaviour for all participants in line with a decrease in energy consumption as sole result of ALD's was unproven.

Foster et al.,'s (2014); evaluation of an end-user energy demand (EUED) technology-led design to encourage PEB, showed surprisingly that participant energy consumption measured, increased during the intervention period compared to baseline conditions. The descriptive data clearly indicates participants used more energy in the intervention conditions.

Gregory-Smith et al.,'s (2017) study examined the impact of an environmental social marketing intervention on employees' energy saving intentions focussing on perceived organisational behaviour and organisational support. Specifically, hypothesis 7 (Perceived organisational behaviour will have a positive and significant relationship with workplace energy saving behavioural intentions) was only supported for the pre-intervention.

Additionally, hypothesis 9 (perceived organisational support will have a positive and significant relationship with workplace energy saving behavioural intentions) was not supported for pre and post interventions.

Finally, Pinzone et al.'s (2019) study examined the effects of how green training is associated with employees' engagement in voluntary PEB and specifically related to this study firstly whether 'green training' has a positive effect on employees' OCBE and secondly co-worker focused OCBE. Their regression analysis showed green training positively and significantly affects employee OCBE. Similarly, their hypothesis that green training positively and significantly affects employee co-worker OCBE was supported.



Table 5 Measures and Results			
	PEB	Transformational Leadership	Results
Graves, L. M., Sarkis, J., & Gold, N. (2019).	11 items (Graves et al. (2013)	Top management commitment to sustainability was assessed by three items ($\alpha = .77$) derived from Banerjee et al. (2003). Multifactor Leadership Questionnaire (MLQ) Form 5x-Short (Bass and Avolio, 1995) – Environmental leadership.	Top management commitment was marginally positively related to PEBs ($\beta = .16, p < .10$) Active leadership was positively related to PEBs $\beta = .51, p < .001$
Fatoki, O. (2019).	Intention to act pro-environmentally: Borgstede and Anders (2002) and Blok et al. (2015) 6 items (Roberson et. al. 2017).	Leadership behaviour (three statements) adopted from Blok et al. (2015). Leadership support augmented with three questions of POS-E (Eisenberger et al., 1986).	Path coefficients and T-statistics showed all support significant positive relationships between leadership behaviour, institutional support, workplace spirituality and PEB (H1 ($\beta = 0.247, T = 7.015, p < 0.001$), H2 ($\beta = 0.268, T = 7.216, p < 0.001$) and H3 ($\beta = 0.263, T = 6.852, p < 0.001$).
Wesselink, R., Blok, V., & Ringersma, J. (2017).	Attitude towards PEB, perceived behavioural control, subjective norms and intention to act adapted from Blok et al. (2015). Ten items (Blok et. al. 2015).	Variable leadership behaviour is adopted from the study of Blok et al. (2015) Leadership support is augmented with three questions of POS-E (Eisenberger et al., 1986).	Leadership behaviour had most significant relation with intention to act - PEB (regression coefficient 0.263)
Raineri, N., & Paillé, P. (2016).	7 items on initiating innovative and spontaneous behaviours directed at environmental improvement (Boiral and Paille, 2012).	Perception of line manager support for environmental improvement using 5 supervisory behaviours (from Ramus (2001).	Standardised parameter estimates of structural model indicated path coefficient for supervisory support and ECB relationship was positive and significant ($b = 0.25, p < 0.01$).
	PEB	Sustainably Certified Buildings	
Tezel, E., & Giritli, H. (2019).	Environmental values were assessed with Thompson and Barton's (1994) scale assessing anthropocentric/ecocentric PEB motives. Six items (Roberson et. al. 2017). Fourteen items – references/examples not provided.		Spearman correlations showed occupants of certified buildings more likely to have higher awareness scores than those of noncertified buildings on environmental awareness scale ($p = 0.036$). Contrastingly, occupants of noncertified buildings report higher PEB scores than occupants of certified buildings ($p = 0.022$).
	PEB	Organisational Human Resource Management	
Zibarras, L. D., & Coan, P. (2015).	5 categories of organisational HRM activities (Zibarras and Coan, (2015).	Company and respondent demographics (Chartered Management Institute, 2009) Highest ranked and most successful HRM practices in encouraging employees to PEB (Daily, Bishop, & Massoud, 2012; Gonzalez, Sarkis, & Adenso-Diaz, 2008; Jabbar & Santos, 2008; Paulraj & de Jong, 2011; Ramus, 2002; Ramus & Steger, 2000).	Highest ranked HRM practices most effective in encouraging PEB:- Awareness raising/lectures/seminars/debates: 32.8% - 19 th , 56.4% - 4 th Actively championed by senior management: 63.1% - 1 st 'Green champions'/task force/green team: 49.7% - 6 th



	PEB Corporate Policies and Practices		
Raineri, N., & Paillé, P. (2016).	7 items - initiating innovative/ spontaneous behaviours on environmental improvement (Boiral and Paille, 2012). 5 items - internal support & encouragement for env. protection (Ramus and Steger, 2000). 7 items (Boiral and Paille (2012)		Not supported as the difference between the two groups was in the opposite direction of that hypothesized, an unexpected finding (Environmental policy > Environmental commitment: 0.19* & 0.04ns - * p ≤ 0.05)

	PEB Corporate Social Responsibility		
Gkorezis, P., & Petridou, E. (2017).	3 items (Bissing-Olson et al., 2013)	CSR was tapped using the six-item scale taken from Turker (2009).	CSR significantly related to PEB: Regression .34 at p ≤ .01. Both Sobel (1982) & bootstrapping supports indirect effect of CSR on PEB via org. identification. Specifically, the former assuming normal distribution, indicates indirect effect (.07) was significant (Sobel z = 2.91, p < .01).
Islam, T., Ali, G., & Asad, H. (2018).	12 items OCBE (Lamm et al., 2013)	Perceived CSR was measured using a 12-item scale of Turker's (2009).	Direct associations between all variables (CSR, Empathy, OI & PEB) and hierarchical regression showed perceived CSR had significant impact on PEB (b = 0.47, p < 0.01).
Tian, Q., & Robertson, J. L. (2019).	Workplace PEB was measured adapting Lamm et al.'s (2013) 12-item scale (OCBE) 12 items OCBE (Lamm et al., 2013)	Perceived CSR was measured using items adapted from Turker's (2009) 12-item scale.	Interaction effect of empathy on indirect relationship between perceived CSR and PEB through OI was significant (b = .18, p = .05, 95% CI [.00, .37]). Perceived CSR is not indirectly linked to PEB via OI for employees low in empathy (i.e., mean minus 1 standard deviation; conditional indirect effect: b = -.05, p[.05, 95% CI [-.03, .17]).
	PEB Education, Social Marketing, Green Training and Group Feedback		
Börner, D., Kalz, M. & Specht M (2015)	PEBs: 22 items Borner et.al., (2015);	Questionnaire design specific to Ambient Learning Display (ALD) study (Börner et. al. 2015).	Unclear evidence ALD influences learning outcome or PEB. Hypothesis: 'significant increase in measured PEB for all participants in line with reduced energy consumption as sole result ALD's unproven. In total, mean activities gain was MTotal = -0.11 (SD = 1.57). Largest activities gain observed in group with change blind notification and indexical representation (MGroup 1 = 0.37, SD = 1.14). All other groups had negative gain. The group with change blind notification and symbolic representation had the lowest gain (MGroup 2 = -0.58, SD = 1.38).
Foster, D., Linehan, C., & Lawson, S. (2014).	Energy measures and follow-up questions Foster et. al. (2014).	Baseline energy goal setting and feedback measures designed by authors for study (Foster, D., Linehan, C., & Lawson, S. 2014). Specifically, average daily total consumption by a participant across each study phase.	Unproven/opposite effect that participant energy consumption increased during intervention with baseline conditions: pre-study = 1.0517 kWh, feedback condition = 1.1846kWh, goal-setting condition = 1.1894kWh, and post-study = 1,155kWh. Descriptive data also clearly indicates participants used more energy in the intervention conditions.
Gregory-Smith, D., Manika, D., Wells, V. K., & Veitch, T.(2017).	Energy saving intention questions (Gregory-Smith et. al., 2017)	Questionnaire not designed for hypotheses testing purposes, validated academic scales not used to measure constructs – study treated as exploratory and items compiled by researchers (Gregory-Smith, D., Manika, D., Wells, V. K., & Veitch, T.(2017).	No evidence - Hypothesis: perceived organisational behaviour will have positive relationship with workplace energy saving behavioural intentions only supported for pre-intervention dataset (Std. Loadings: 0.20* Std. Error: 0.08 zScore: 2.31). Hypothesis :perceived organisational support will have positive and relationship with workplace energy saving behavioural intentions not supported for pre and post interventions.



<p>Pinzone, M., Guerci, M., Lettieri, E., & Huisingsh, D. (2019).</p>	<p>Organization-focused OCBEs - Adapted items - Boiral and Paille (2012) Co-worker focussed OCBEs - Adapted items - Boiral and Paille (2012) PEB : Three items (Alfes et. al. 2012).</p>	<p>'Green' training - Adapted items - Alfes et al. (2012) 'Green' goal difficulty - Adapted items - Wright (2004) 'Green' (POS) Short POS scale by Eisenberger et al. (1986)</p>	<p>Regression analysis on OCBEs, showed green training positively and significantly affects employee OCBE (b = 0.239; p < 0.001). Similarly, hypothesis that green training positively and significantly affects employee coworker OCBE is supported (b = 0.136; p < 0.05).</p>
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POS-E = Perceived Organisational Support for the Environment
CSR = Corporate Social Responsibility

PEB = Proenvironmental Behaviour

ECB = Environmental Citizenship Behaviours
Org. Ident./OI = Organisational Identification

PBC = Perceived Behavioural Control
ECB = Environmental Citizenship

HRM = Human Resource Management

ES = Environmentally Specific

3.7.2 Quality Assessment - Overall Summary

Organisational factors explored in these studies as barriers to workplace PEB namely sustainably certified buildings and corporate policies and procedures were not seen as facilitators to PEB at work rated as 'unclear evidence' (Table 6). Essentially sustainably certified buildings research involved one low quality study with mixed results and limited study robustness, while the corporate policies and procedures research comprised one case study with opposing outcome to study aims and of limited design and execution. In terms of factors seen as facilitators to workplace PEB three factors rated as initial evidence: firstly, transformational leadership (TL), secondly education, social marketing, green training and group feedback (ESMGTF) and thirdly corporate social responsibility (CSR). The four TL descriptive papers were limited in design and strength of results, the four ESGMGTf intervention papers had conflicting outcomes of variable quality, limited design and execution, while the three CSR descriptive papers were also of variable quality and limited in both design and execution.

Comprehensive results of the quality assessment are provided in Appendix 1 showing construction of overall paper ratings comprising Conceptual Quality (trustworthy/insightful) and Reporting Quality (transparency/accuracy) with full statements reflecting sub-scores allocated and final score justification. Of those paper in the poor-quality category 2 (15%) of papers, the main shortcomings were small sample size as low as 16 (Foster et al., 2014), absence of survey/survey questions (2 papers - 15%) and limited implications for further research and highly limited & discussion on experimental design challenges and

shortcomings. This is despite one of these studies (Foster et al., 2014) attempting to examine the unexplored area of real-time energy use in four treatment conditions which still represents a gap in the literature.

Of those studies in mid-level reporting quality (9 papers - 63%) key shortcomings were seen in areas on study limitations discussion, sector breadth, functional groupings, lower-level employee study, survey appendices and interview structure. In the remaining two papers (15%) key strengths were seen as longitudinal, multi-treatment and multi-sector research methodologies as well as comprehensive discussion on limitations and practical/research implications.

In summary quantitative studies (by far the majority of papers) were limited in their cross-sectional on-time data capture, use of control groups, treatment of missing data, small sample size and country focus. The qualitative studies (2 - 12%: one mixed methods paper) were limited in terms of their details/appendices of measures used, details of how relationship between researcher and participants impacted on study and ethical considerations.

Table 6. Evidence statements and quality ratings

Evidence statement	Quality rating	Reasoning
Organisational level factors as barriers to PEB at work		
Sustainably Certified Buildings Sustainably certified buildings are not a facilitator to PEB at work.	Unclear evidence	One low quality study with mixed results and limited study robustness,
Corporate Policies and Procedures Corporate policies and procedures are not a facilitator to PEB at work.	Unclear evidence	One case study with opposing outcome to study aims and of limited design and execution
Organisational level factors as facilitators to PEB at work		
Transformational Leadership Leadership Behaviour is a facilitator to PEB at work.	Initial evidence	Four descriptive papers limited in design and strength of results
Education, Social Marketing, Green Training and Group Feedback Education and Green Training is a facilitator to PEB at work.	Initial evidence	Four intervention papers with conflicting outcomes and variable/limited design and execution
Corporate Social Responsibility Corporate Social Responsibility is a facilitator to PEB at work.	Initial evidence	Three descriptive papers variable/limited in design execution

3.8. Discussion

3.8.1 Overview

The purpose of this systematic review was to provide an overview and analysis of the current research literature on research in work settings (public, private and third sector) exploring all organisational level factors related to pro-environmental behaviour. The aim was to provide a unique insight and understanding into the macro-organisational comprehensive range of factors that both impede and facilitate pro-environmental behaviour in the work-place which to date had not been considered with specific questions of: What organisational level factors are barriers to PEB at work and what organisational level factors are facilitators to PEB at work?

While all 13 studies analysed through this systematic search, selection and extraction process described offer a heterogeneous body of research, with quite diverse outcomes and varying measures of achievement, only three categories offered 'initial evidence' in quality ratings against these research questions, offering overall limited support for the questions against this research endeavour. Those three outcome categories were firstly transformational leadership, secondly education, social marketing, green training and group feedback and finally corporate social responsibility.

Additionally, although all types of study were reviewed with the understanding that qualitative approaches may offer rich detail in understanding these complex relationships, only one study utilised this approach in a mixed methods format (Foster et al., 2014), indicating opportunity for further research endeavour with this approach in mind to enable

greater insight into this relatively new and growing body of research. The quality of studies included was also variable quality.

3.8.2 Potential Factors Facilitating PEB

Given 'initial evidence' ratings in Table 6 there may be opportunity for exploring further a PEB framework of three key factors that facilitate PEB at work. Transformational Leadership, Education and Green Training and Corporate Social Responsibility, may offer organisations specific PEB focus here, although further research is required and this study is not without its limitations outlined in 5.4. Nonetheless we are seeing an early if relatively weak emerging picture taking shape of key organisational factors at play in enabling workplace PEB.

The two themes of Sustainably Certified Buildings and Corporate Policies and Procedures revealed 'unclear evidence' ratings largely due to paper quality, discussed further in 5.4.2. Unsurprisingly all papers explore some element of employee behaviour in either treatment or discussion and a rich picture of interplay between multiple 'hygiene factors' including feedback, empathy, green-goal difficulty, organisational commitment, ecocentric belief, perceived behaved control and hypocritical PEB is also emerging, with implications for further research.

Of note here are Fatoki's (2019) findings showing significant positive relationships between leadership behaviour, institutional support, workplace spirituality and PEB, with implications for practical application. Additionally, Graves et al. (2019) in their work on top management commitment, managerial leadership, and employee motives show implications in understanding the role of employee motivation in facilitating PEBs with leaders wishing to

encourage this appealing to individuals' personal values and goals, with respondents reporting substantially higher PEBs when their managers engaged in active leadership. With regard to Green Training, Pinzone et al. (2019) showed positive and significant effects on employee OCBE and co-worker OCBE.

Finally interesting findings on CSR include: Gkorezis and Petridou (2017) demonstrating a significant PEB relationship, supported by the indirect effect through organisational identification, Islam et al.'s (2019) showing employee perceived CSR was found to have a significant impact on PEB and Tian and Robertson (2019) showed the interaction effect of empathy on the indirect relationship between perceived CSR and PEB through organisational identification was significant.

3.8.3 Theoretical Challenges

While a large body of research is emerging exploring theoretical approaches as discussed, these are also arguably to some extent inherently flawed. Firstly, Social Exchange Theory (SET), lacks sufficient theoretical precision and limited utility, the Value-Belief-Norm (VBN) approach implies a series of causal links related to social norms with inherent reliability risks in concept complexity. Similarly, the Theory of Planned Behaviour (TPB) raises questions of attitudes, subjective norms, and perceptions being sufficient to predict intentions and finally the Cognitive Theory of Stress (CTS) assumes perceived individual demands and coping capacity are generic for research. Of all 13 papers reviewed 12 (92.5%), base their generative thought, theoretical and experimental construction and research methodology on these afore mentioned theoretical bases with suggested inherent weakness in approach.

3.8.4 Limitations and Implications for Research

Research Volume, Geography, Multiple Organisations

The principal limitation of this SLR is the overall dearth of research exploring PEB and organisational outcomes. While this presents an opportunity for further research endeavour, the obvious limitation on any conclusions and findings found here need to be correspondingly noted, given the challenges of depth, quality and robustness in papers reviewed.

Suffice to say the Euro-centric nature of these studies (10 studies - 60%) and limited research elsewhere i.e. singular studies in South Africa, Russia, Vietnam, Turkey and China, does little to represent a robust and truly representative picture of findings, although a ground swell of increasing interest domestically and globally, shows promise in enhancing this. While geographic range, industry sector breadth and volume of research to date is seen as highly limited, there remains an encouraging early body of work in the UK (5/29% of studies). Therein lies a significant opportunity for broader international studies with larger populations, while even across Europe most member countries are entirely unrepresented. Interestingly only one study (Zibarras & Coan, 2015) sought to cover multiple organisations with an expansive sector spread and with a unique take in exploring HRM practices with insightful results, although still nation specific (UK). Methodological limitations are inherent in most studies too with the vast majority applying a cross-sectional and one time point approach, again indicating significant opportunity for mixed methodology, qualitative focus and longitudinal structure to further enhance insight, learning and the body of research.

Similarly, only several industry sectors are represented, here with limited and highly variable data on demographics including, role, function, age, gender and profession, presenting significant opportunity for research quality enhancement. As well as acutely limited demographic data, none of the studies explored whether differences here affected outcomes achieved. Overall studies reviewed provided only limited information about research context and where provided, it would be challenging to draw clear conclusions about the impact that context has had on research outcomes.

3.8.5 Quality of Studies

The quality of studies included was highly variable, with only six papers deemed to be of high quality-assurance rating (Appendix 1), although findings offer initial insight into potential factors at play. Of the three studies (22.5%) exploring Green Learning all were of good quality although lacking sample size and function/organisation spread to enable generalised application.

Secondly regarding quality, while concepts studied in papers were at times similar, for example leadership effects on PEB (6 studies - 46%), specific study aims were highly variable across all concepts. In the case of leadership studies, this encompassed varying aspects of workplace spirituality, transformational leadership, servant leadership, charismatic leadership, individual-organisational-supervisory interplay and HRM practices, thereby rendering cross-study comparison, analysis and collective enlightenment highly challenging.

This research spread along with low sample sizes, makes it impossible to deduce which research is likely to be effective in developing meaningful outcomes. To overcome these variations in effectiveness, future research needs to include larger and wider sector sampling, broader geographic reach and more high-quality studies with connected research aims to facilitate improved findings.

Thirdly there is need for a more consistency in defining and measuring workplace PEB.

Research to date has yet to provide definitive evidence of PEB outcomes given high variability in measures, numbers of studies and samples as well as strength of findings. The variability of PEB measures seen here, described fully in 4.3.1, include 'spontaneous behaviour aimed at environmental improvement', Raineri and Paille (2016), differing OCBE scales and items (2009: Boiral & Paille, 2012: Lamm et al.; 2013), green training (Alfes et al.; 2012) and finally bespoke study measures on goal setting, feedback and energy use.

Fourthly robustness, transparency and consistency of research methodology design needs addressing given variable quality of tools used (survey instrument and interview structure) with details/instruments often absent in papers (7 - 52.5% of studies), as well as the use of control groups for greater research rigour (used in only 2 studies - 15%). Additionally, only two studies (15%) utilise a longitudinal approach further limiting reliability of findings.

Addressing this in future methodology, coupled with overall research transparency and structure would do much to enhance the quality and body of PEB knowledge. Finally, as mentioned, low survey measurement reliability (Homburg & Stolberg, 2006), lack of granular analysis of specific behaviours that drive PEB and reliance on cross sectional-data in

the majority of studies coupled with failure to address the nuanced complex PEB relationships, all provide opportunity for greater research quality and conceptual understanding.

Combined high demographic variability, frequent absent data, and focus to date on specific staff levels e.g. supervisors, future research is best focussed on researching the interplay between differing staff levels for greater insight e.g. juniors, supervisors and middle and senior management.

3.8.6 Implications for Practice

Aside from behavioural and hygiene factors already discussed, this study's outcomes reveal a range of organisational levers that organisations can practically consider for PEB effect. These include consideration of fit between employees and the organisation's pro-environmental values (Luu, 2019a), designing human capital education, training, and communication to improve environmental sustainability (Fatoki, 2019), training managers to develop inspirational persuasion skills so as to translate the green strategy into pro-environmental tactics and action plans in an inspirational fashion (Luu, 2019b), introjected and identified motivation (employee engagement) encouraging employee' PEBs (Gkorezis & Petridou, 2017; Graves et al., 2019; Islam et al., 2019), clearly communicating environmental policy, strategy and CSR (Raineri and Paille, 2016; Tian & Roberston, 2019), green training and evaluating related HRM practices (Börner et al., 2015; Pinzone et. al., 2019; Zibarras &

Coan 2015) and finally perceived organisational support to act pro-environmentally friendly (Wesselink et al., 2017). Government agencies and lobbying bodies could also play a key role in persuasion, governance and support to actively apply these PEB initiatives.

3.8.7 Concluding remarks

Pro-environmental research and the understanding of underlying related mechanisms and their interplay remains at relatively early stages, while an initial picture and direction of indicative research approaches in contributing to the wider body of learning is beginning to emerge. This systematic literature review of PEB in work settings (public, private and third sector) set out to explore all organisational level factors related to pro-environmental behaviour with intent of providing a unique insight and understanding into the macro-organisational comprehensive range of barriers, that both impede and facilitate workplace PEBs. Green Learning, Transformational Leadership and CSR offered initial evidence for organisational PEB influence and effect. Although until further extensive research with greater methodological robustness, sample size, geography and demographics further enhance these findings, they should be treated with some caution. All 13 papers presented represent summative knowledge within said parameters and time frame and are of variable quality.

Methodological improvements in transparency, robustness and replicability represent the most significant opportunity for enhanced quality of this body of knowledge, with an additional focus in improved granular understanding of key organisational actors facilitating

PEB given the nuance and subtlety of related processes at play. At the outset we hypothesised that qualitative approaches may offer findings in this endeavour, although with only one mixed-methods approach across all studies, cautionary insights are offered from overall findings within limited samples, sectors and demography. There remains both significant opportunity and need for extensive further research to enhance our understanding of organisational PEB processes and outcomes. With this in mind the second study in Chapter 4 seeks to examine how leaders may influence followers PEB in work settings. As discussed, leaders have opportunity for considerable influence on followers PEB with little current understanding of the complex dynamic at play or the specific areas of PEB they may have impact on. This empirical study will therefore examine 15 followers' views on their leaders' PEB influence through semi-structured interview format, with intent of gaining novel insight on this relatively unknown relationship with implications for organisational learning and further research.

Disclosure statement

This author reports no conflict of interest.

Chapter 4: A qualitative study examining the role of leader behaviour on employee PEBs.

4.1 Abstract

Efforts to research pro-environmental behaviour (PEB) in the workplace have predominantly centred on cross-sectional survey methodology with limited focus on the complex leader-follower dynamic. This study explores how specific leadership behaviours may enable related follower PEB with a view to developing a potential theoretical framework of the process. A total sample size of 15 'followers' (staff) in the third sector at the Royal College of Nursing, where this researcher is employed as organisational development consultant, were interviewed in a semi-structured format, on their perceptions of their leaders influence with a PEB focus. Respondents were intentionally randomly selected from mixed departments and roles across the organisation with the aim of the widest cultural spread. Findings revealed six enabling leadership PEB factors, offering greater insight to the leader-follower PEB dynamic namely: enabling conversations, role modelling, encouraging eco-behaviour, challenging behaviour to do things differently, validating behavioural choices and advocating change. These findings contribute to greater theoretical understanding in integrating existing leadership theories previously applied to PEB research and offer opportunity to test existing survey scales used in combination with these novel outcomes, as well as rich contextual understanding of the leadership/PEB dynamic. Additionally, while there are fresh insights offered in this relatively new research area afforded by the richer detail provided in this qualitative research approach, this also limits generalisation. Further limitations of this study are in the limited sample size and singular organisation researched, also inhibiting

generalisability. Finally, a clear indication of this study is for further research in this under represented key area of workplace PEB, to enable greater understanding of this complex and still little understood behavioural dynamic.

4.2 Introduction - Climate Change and PEB

To clearly position this research in providing a richer picture of behavioural dynamics at play between leaders and followers in 3rd sector organisations, this summative introduction of broad level findings enables both wider context and focus. Climate change is an urgent global issue with demands for personal, collective, and national action. While much has been researched and written on this pressing topic especially over the past decade, our understanding of pro-environmental behaviour in workplace settings is limited. With 31% of an individual's time spent at work (Tudor-Locke, Leonardi, Johnson & Katzmarzyk, 2011), not only do employees have opportunity to demonstrate pro-environmental behaviour at work influencing climate change, but attitudes and behaviours changed in the workplace may impact beyond the work in to home environments, thus benefiting the overall effort to take action.

4.2.1 Broad Research PEB Themes

As discussed in chapter one I illustrated that efforts to encourage PEB in the general population have been guided by research broadly falling under five key themes. Firstly 'behavioural drivers' as in Weber 's (2006) extensive literature review of risk related behaviours to explain behavioural climate change reactions noting that 'worry', perceived 'distance' from the issue and perceived 'time lapse' probability, all correspond with failure to act. Secondly a complex 'behavioural interplay' between public 'informedness', confidence in scientists and personal efficacy in effecting global warming outcomes, alongside paradoxical findings of the more informed individuals feel, the less responsible and concerned they are for global warming (Kellstedt et al., 2008). Thirdly, a three-way relationship between public knowledge, level of concern, and perceived personal efficacy in positively affecting global warming issues were found as key variables in understanding public support for mitigation action (Milfont, 2012).

Fourthly an extensive body of literature examines the role of 'psychological distance' (e.g. McDonald et al., 2015) has emerged, examining proximity to climate issues (e.g. neighbourhood and community) influencing behavioural change and while showing promise, concluded mixed and contradictory results with the need for more extensive research. Finally, public and employee willingness to engage in mitigation actions has received relatively little attention especially internationally. Research in Western nations. indicates systematic individual misunderstanding of climate change and related actions

required for mitigation, with key factors influencing judgments on mitigation actions including: personal experiences, beliefs, knowledge, values, and world-views. For example, Broomell et al.'s (2015) international survey measuring general intentions to act and willingness to engage in specific actions, revealed a complex relationship of compatibility between the proximal construal of specific actions and the nature of the personal experience, with implications for tailored communication strategies combined with greater opportunities for exposure to green space.

While extensive research at broader level influence of communication on public engagement with climate change helps our understanding of this behavioural interplay, limited focus has been on influence at interpersonal discussion level. Significantly, Goldberg et al.'s 2019 time-lapse panel data on climate conversations shaping beliefs and feelings about global warming, discovered evidence of reciprocal causality. Essentially discussions on global warming with friends and family influenced learning influential facts, such as scientific consensus that human-caused global warming is occurring. Moreover, stronger perceptions of scientific agreement increase beliefs that climate change is happening and of human-causality, in addition to 'worry' about climate change. Their findings indicate that climate conversations with friends and family trigger 'pro-climate social feedback loops'. This body of macro-level, public and interpersonal research understanding summarised, provides a useful context and perspective in the emergence of organisational and employee level applied learning endeavour and more recently workplace pro-environmental behaviour (PEB).

4.2.2 Work settings and organisational factors in PEB research

As outlined specifically in this researcher's SLR and 4.2.6 below, although research endeavour to date within the field of work place PEB factors, employee effects, processes at play and intervening mechanisms are still in relative infancy, an emerging clearer picture is taking shape offering insights from diverse areas. For example, Börner et al., 2015, explored ambient learning display design differences and related energy consumption, Fatoki (2019) examined workplace 'spirituality' (meaningfulness/purpose) and institutional support, while Foster et al., (2014) and Gkorezis and Petridou (2017), examined goal-setting and organisational identification respectively. Other PEB factors considered include Zibarras and Coan (2015) assessing specific HRM practices influence on employee PEB, Pinzone et al., (2019) evaluating green training and goal difficulty, Foster et al., (2014) examining group performance and goal setting and Gregory-Smith et al; (2017) evaluating environmental social marketing interventions.

More recently the role of organisational leaders is highlighted as a pivotal factor on employee PEB influence and while results reveal initial insights, there remains limited understanding on specific process and dynamics present. For example, Wesselink et al., (2017) examined associations with transformational leadership behaviours and institutional support on PEB and Graves et al., (2019) explored top management behavioural effects,

specifically environmental transactional and laissez-faire leadership on employee motives and PEB. Conclusions are also offered from several research teams suggesting qualitative research may offer richer detail here, for example Luu (2019a) and Graves et al., (2019).

4.2.3 The Leadership Factor and PEB

In understanding the leadership PEB factor further, leaders are seen as playing a key role in the leader/follower influence relationship. Firstly, acting as 'change agents and affecting activities and relationships at work' (Kotter, 1990) and secondly in inducing others to take action (Locke et. al., 1991). Similarly, Rost (1993) states that leadership transforms the values, beliefs and motivations of followers. Indeed Yukl (1994) amongst others, suggests a strengthening argument among leadership theorists that being a 'social influence process', leadership occurs naturally within a social system shared among various members, indicating that leadership needs researching as a dynamic process rather than simply through the study of leaders alone (Yukl, 1993).

This author's SLR (Chapter 3, 1.2) outlines that environmental transformational leadership (ETL) is activated through managerial role modelling in environmental values discussion with subordinates, focussing on environmental protection and related actions on environmental issues (Robertson and Barling, 2013) amongst others. The key influential leadership

elements here being inspiration of employees through 'visioned' sustainable futures, clear work planning to meet these visions and shaping team confidence for successful outcomes.

Bass' (1990) highly extensive literature review reinforces the notion that leadership is both transformational and influential on followers.

Leader-member exchange (LMX) theory, although as yet unused in PEB research, may offer contextual understanding in the 'leader/follower' relationship dynamic in describing line managers' tendency to develop close relationships with a small subgroup of direct reports, engaging in higher quality exchanges than with other team members with greater levels of mutual trust, respect, liking, support, and reciprocal influence (Harris & Kacmar, 2005). PEB specific theories have also been applied including the 'authentic leadership' approach (Avolio & Gardner, 2005), identifying key attributes of 'self-awareness, regulation and positive modelling contributing to authentic leaders fostering authenticity in their followers, as well as well-being and productivity'. Similarly, 'ethical leadership' (EL), defined as 'normatively appropriate conduct through personal actions and interpersonal relationships and the promotion of such conduct to followers through two-way communication, reinforcement, and decision-making', has also gone some way to explain the leader/follower influence relationship. The EL process link is seen as high levels of integrity, stimulating a sense of trustworthiness and encouraging subordinates to accept and follow a vision (Brown, Trevino & Harrison, 2005).

Additional context and focus for this study is offered through a body of research revealing that workplace leaders play a vital role in influencing employee behaviour across a broad range of topics, including health (Rifkin et al., 2018), diversity (Fatoki, 2019) and performance (Pinzone et al., 2019), yet relatively little is still known about the complex interplay relationship between leaders and followers or team members in promoting PEBs (Tian & Robertson, 2019; Yang et al., 2020). In their study exploring links between green transformational leadership (GTFL) and environmental performance, Singh, Giudice, Chierici and Graziano (2020), define GTFL as 'leadership behaviour wherein the key goal is to provide clear vision, inspiration, motivation to the employees and also support their developmental needs towards achievement of environmental goals of the organisation' (Mittal & Dhar, 2016; Chen & Chang, 2013). They go on to explain that GTFL helps motivate employees to acquire new knowledge (Han, Seo, Li & Yoon, 2016), involves and engages them in green processes, product innovation and related activity, enabling organisations to bring new green products and services to the market (Andriopoulos & Lewis, 2010). Chen and Chang's (2013) connected research speculating that top management of SMEs should practice GTFL such as visioning, inspiring and involving, to create and support internal competencies necessary for green innovation to attain environmental performance, revealed indirect but clear causal links.

4.2.4 Leaders, Followers and PEB

Three descriptive studies from this author's SLR examined varying aspects of leadership behaviour in relation to PEB, with promising results and indication for further research.

Firstly, Graves et al., (2019), explored associations between top management, leadership behaviours and commitment and

employee motives with PEB, using cross-sectional survey data. Correlations were shown

between perceived higher levels of top management commitment to sustainability and

respondents reporting more PEBs, active leadership positively relating to respondent PEBs

and the reporting of substantially higher PEBs when their managers engaged in active

leadership. Secondly Wesselink et al.'s (2017) study, explored associations with leadership, institutional support and understanding the influence of the Theory of Planned Behaviour in

private company settings in relation to PEB. To test the effects of the different factors of

'intention to act' and PEB in the workplace, multiple regression analyses revealed an overall

model proving significant, with the 'leadership behaviour' factor having the most significant

relation with intention to act and also in line with earlier findings (Blok et al., 2015).

Finally, Fatoki (2019), explored the relationships between leadership behaviour, institutional

support and workplace spirituality, with results showing significant positive relationships

between all three factors. Interestingly the leadership focussed element of this author's SLR

represented just 3 of all 13 studies identified indicating significant opportunity for further

exploration of how leadership behaviours may enhance and impede PEB in workplace followers and is therefore the focus of this empirical study.

Thus, with a singular qualitative research paper noted in this researcher's SLR and only three papers exploring leadership and PEB, coupled with a body of researchers recommending this approach to understand the relationship more fully, this empirical study intends to contribute to the gap in knowledge. Strengthening this argument further, Greaves et al., (2013) for example, researched followers' perceptions of top management commitment to PEB and influence on their immediate managers' behaviour using self-report cross-sectional survey measures, specifically highlighting significant opportunity for qualitative research to address this.

4.2.5 Influence of Leadership Behaviour

In positioning this research opportunity against the backcloth of PEB leadership thinking, this author notes that that 'green' leadership is: both transformational and influential' (Bass, 1990), transforms the values beliefs and motivations of followers (Rost, 1993), is a 'social influence process' (Yukl, 1993), supports the shaping and motivation toward green goals by followers (Han et al., 2016), enables organisations to bring new green products and services to the market (Andriopoulos & Lewis, 2010) and both creates and supports internal competencies necessary for green innovation (Chen & Chang, 2013).

In addition, the application of qualitative research to understand leadership influence generally offers a convincing case through several cogent arguments (Parry, 2002). Firstly, a psychological approach using quantitative methods has not as yet led to an integrated theory of leadership, secondly leadership is by nature complex, dynamic and longitudinal indicating alternate methodology. Thirdly leadership overall can be seen as a social influence process, thereby indicating richer investigation of the dynamic mechanisms at play, with corresponding research strategies reflecting the breadth, depth and range of intervening variables that impact this social influence process.

4.2.6 Limitations of current research

PEB research endeavour then has spanned from cross-sectional survey analysis approach at the macro-organisational level with concomitant challenges in granularity, to manager/supervisor interactions and a singular qualitative grounded theory approach with inherent generalisation limitations. While Glaser and Strauss's (1967) grounded theory approach used by Yang et al., (2020) enables deeper insight into the relationship between hypocritical and substantive PEB with employee motivational implications, little practical recommendation is offered by way of organisational learning and application. In short based on this researcher's SLR and PEB leader/follower research to date, there is opportunity to contribute to the literature in examining this relationship more comprehensively.

Leadership research has been dominated by the disciplines of management and psychology 'relying upon the quantitative analysis of data, as a result, the quantitative analysis of quantitative data has dominated leadership research' (Parry, 1998). Convincing arguments have recently been levelled against this concentration on quantitative methodology in leadership research (Alvesson, 1996). Consequently, our understanding of how leaders influence their followers' PEBs is hampered by low survey reliability (Wesselink et al., 2017) and overlooking managers' views and specific behaviours (Greaves et al., 2013). Moreover, findings have also been based on various measures of leadership, none of which have specifically or effectively been designed to examine leadership in the context of PEB (Homburg & Stolberg, 2006). Research showing leaders' impact on PEB already discussed in this author's thesis, has almost in its entirety used pre-existing rating scales not specifically designed with PEB in mind thereby potentially failing to capture some aspects, nuance or magnitude of PEB. For example, in chapter 3, page 45 'Measures and Results' we note multiple examples of existing PEB scale amendments and applications including: Graves et al.(2019) and Fatoki (2019) on Transformational Leadership, Tian and Robertson(2019) on Corporate Social Responsibility and finally Pinzone et al., (2019) on Education, Social Marketing, Green Training and Group Feedback amongst others. One exception here is Singh et al., (2020), who examined how green HRM interplays with green transformational leadership, green innovation and environmental performance using their own questionnaire, via triadic data from 309 manufacturing sector small and medium-sized enterprises (SMEs).

While their findings suggest HRM practices mediate the influence of green transformational leadership on green innovation, there still remains an opportunity to examine leaders' behaviours more closely, with the specific aim of understanding in more detail what specific behavioural mechanisms are at play in influencing workplace followers.

4.2.7 Study aims and objectives

This research explores specific leadership behaviours that encourage and facilitate PEB in employees, representing a unique opportunity for deeper insights and requisite practical organisational implications. To fully understand the role of leader behaviour on employee PEB, relevant behavioural data through in depth semi-structured interviews with employees will be recorded, transcribed and analysed.

Resulting aims and objectives are firstly to provide a deeper understanding of the leadership behaviour effects (process, mechanisms and factors at play) on PEB in the workplace with implications for enhancing employee behavioural change. Secondly to contribute to existing literature through development of deeper insights into the leader/follower relationship with respect to PEB and potential modular or theoretical development and a theoretical mapping exercise conducted of this study's outcomes against existing leadership theories is intended to advance thinking here. Thirdly to identify related activities, processes and procedures organisations can apply to enhance PEB in the workplace at leader and follower level. Key research questions of this study are:

What are the identifiable PEB leadership behaviours enabling employee PEB?

4.3 Method

4.3.1 Methodology

While current research is multi-industry, albeit a predominance of Higher Education and Hospitality, there is an opportunity to expand reach further to both the 3rd sector (Charity) and Professional/Educational Bodies for corresponding greater cultural insights. While this researcher is employed as Organisational Development Consultant (Royal College of Nursing) and voluntarily as Non- Executive Director (NED) MIND (mental health charity), these two organisations were considered for subjects along with approaches to multiple 3rd sector organisations. Ultimately given Covid restrictions at the time of this research and the expediency of organisational access, research focus here is in the Royal College of Nursing (RCN), and focus is on sampled team members (followers) through thorough exploratory interviews within strict Birkbeck College ethics guidelines (Ethics Appendix xxx).

The RCN presented as unique organisation to conduct this research not only in being a professional body and union yet to be studied in leader/follower PEB effects, but also due to the entirely unique characteristics of this firm. As the world's largest union and professional body, the RCN represents and supports some half a million nurses, midwives, nursing support workers and students working together to advance the profession with over 1300 employees across multiple UK sites. This sample was especially useful, comprising many and varied professional groupings, departments and professions across the organisation offering a rich sampling population from legal, to human resources, research to library services,

member support to IT support and communications to nursing professional development.

The organisation additionally espouses and has cultivated an inherently supportive culture regarding research endeavour, which also underpins the nursing profession and openly welcomes independent review and learning to further advance development of the College.

As outlined in Methodology section 2.5.2, a qualitative TA approach was applied collecting data from 15 team members, pending sufficient access and subject to data saturation. Semi structured interview approaches enable collection of a far more detailed picture of leader/follower relationships in relation to PEB enabling the capture of context, flexibility in building a rich data picture as well as consistency in approach. The contrasting challenge of semi-structured interviews is in consistency and thereby data quality, however given the extensive experience, competence and assessment interview experience of this researcher, quality standards of procedure and execution are intended to be of the highest standard.

TA methodology identifies, analyses, and reports patterns (themes) within data, minimally organising and describing data sets in rich detail and interpreting various aspects of research topics (Boyatzis, 1998), thus enabling a systematic approach to analysing data in qualitative research. Moreover, Braun and Clarke (2013) emphasis its unique flexibility as qualitative methodology though a 'constructionist approach', offering deeper understanding and meaning from the data.

Finally, essential in TA approaches is a clear understanding of the researcher's position in relation to the process, the rationale for making the choices they do and the consistency in application of those choices throughout analysis. Therefore, as our own views as

researchers in the TA process shape how we collect, code and analyse the data, it is feasible that other researchers may develop differing insights, learning and outcomes.

4.3.2 Participants - sampling

Selection of participants and interviews took place via Microsoft Teams video during the months of May and June 2021, with stored video recordings then transcribed by TP Transcriptions service, a highly experienced quality assured professional service provider, used by academic institutions both nationally and globally. Varied tenure, level, experience, departmental mix and role were also at the forefront of purposive sampling to enable the broadest insight and conceptual understanding in relation to research questions. The sample size of 15 respondents was identified as per Braun and Clarke's (2013) procedural qualitative research recommendations, where '...between 15 and 30 individual interviews' are the ideal requirement. Quality assured sampling intent was both in maximising participant variation and random selection through: strategic research objectives' conversations with regional human resources (HR) departmental heads, analysis of organisational charts, consideration of widest functional, geographic and role spread and final re-checking with HR and local management for widest reach in all aspects, prior to final random selection. From the participant table below, we can see that gender split is relatively balanced (9/15 - m/f) given the predominantly female make up of all employees. There is also wide UK geographic spread, age groups span 20 to 60 years, education is minimum degree level and job titles span a range of professions and tenure from 1 to 32 years.

Table 7: Participant Summary

Pseudonym	UK Region	Gender	Age Group	Education	Tenure
Jane	London	Female	20-30	Degree	12 years
Anna	South East	Female	50-60	Professional Nursing	32 years
Paula	London	Female	30-40	Unavailable	7 years
Kim	Scotland	Male	40-50	Degree	12 years
Lucy	Midlands	Female	40-50	Degree	4 years
Ben	Midlands	Male	50-60	Degree	15 years
Cath	Midlands	Female	40-50	Professional Nursing	12 years
Gail	South East	Female	50-60	Professional Nursing	28 years
Jim	London	Male	40-50	Degree	6 years
John	South East	Male	40-50	Degree	19 years
Mike	South East	Male	30-40	Professional Nursing	1 year
Rach	Wales	Female	30-40	Degree	9 years
Simon	South West	Male	40-50	Degree	18 years
Nat	Wales	Female	30-40	Unavailable	6 years
Sam	Wales	Female	30-40	Degree	16 years

4.3.3 Procedure

Participants were accessed from as wide a departmental and professional reach as feasible in the RCN, firstly through sourcing national organisational charts for the whole organisation and then randomly selecting relevant participants. All prospective participants were then sent emails on background information of the study, consent forms, questionnaire interview format along with clear stages of the research process for full transparency. A commitment to address all queries, concerns and questions on the process for full transparency was also offered.

The proforma questionnaire structure and ethics sign off was initially developed in partnership with my supervisor and second researcher, along with pilot interviews with three staff from the organisation to refine the structure and process. Strict data storage and protection procedures were followed as per ethics approval, through anonymising and protecting confidentiality via password protected external soft copy storage folders, also ensuring participants were at liberty to withdraw from the research process at any stage.

Given Covid related face-to-face interview challenges at the time of research (May/June 2021), interviews were entirely virtual and permission sought to record all transcriptions for consistency. An introduction on research process, objectives and data management were covered at outset, along with sufficient time for rapport building given the virtual format. Best practice steps were followed, including 'setting the scene', constructing and testing interview questions, striving for objectivity, actively listening, flexing and adjusting where necessary managing emotions, transcribing in good time and checking the data (McGrath, Palmgren & Liljedahl, 2019). Setting the scene at the start of interviews was followed by rapport building and probing questions in line with this research endeavour. Full interview questions, schedule and process documentation are provided in Appendix V.

Participant interview transcripts were then generated from each respective online interview in a question-by-question format, using the approved interview proforma. Detailed notes were collected by this researcher in addition to securely stored Microsoft Teams video interviews. The transcription organisation (TP Transcriptions) was used for

generating comprehensive transcripts of each interview and selected for their use of rigorous ethical and quality assured research standards. As academic transcription preferred supplier they are also frequently used by this researcher's sponsoring University, as well multiple Universities worldwide.

As mentioned in Chapter 2, ethics approval for this study was gained in October 2020 and as Chartered Occupational Psychologist and BPS Associate Fellow, this researcher complied fully with BPS research standards (Ref. OPEA-19/20-10: Ethics board approval, Birkbeck College, University of London). Additionally ethical approval included informed consent, maintaining confidentiality and privacy, maintaining participant welfare including mental health support signposting if needed and acting with integrity. Comprehensive ethics documentation is provided in Appendix VII.

4.3.4 Analysis

Reflexive Thematic Analysis (Braun & Clarke, 2013) was used. Firstly, an inductive approach to data coding and analysis 'bottom-up' approach was applied and driven by data content with codes and themes deriving from the data directly and ensuring subsequent 'mapping' during analysis closely matches data content. Secondly the deductive approach applied enabled exploration of ideas in relation to the coded and themed framework. The deductive 'top-down' component, was driven by a high-level framework of super-ordinate headings or themes such as role modelling or enabling conversations and related code related descriptions and behaviours. The inductive component meant the interview data was also used to examine specific ideas in relation to the thematic framework. Overall analytical

endeavour here was guided by RTA approach offering consistency and coherence of overall themed and coded framework and analysis process. All three key research process phases noted by Braun and Clarke (2013) were rigorously followed here, notably: organising codes and coded data into participant themes, reviewing and revising those candidate themes and developing a rich analysis of the data represented by the final themes in answering these research questions.

While TA data processing packages such as Nvivo were considered for analysis, the coding procedure here was manual, following the above clear guidelines on process with a second researcher checking and validating quality of the first two transcripts before progressing to overall completion. Although manual coding is considered as more time consuming compared to automated analysis packages, it can have the advantage of streamlining the overall process through greater proximity of the researcher to all analysis stages from the outset. The creation of codes by the researcher and the decisions on which data is relevant and why, effectively reduces the amount of data to be considered in final analysis.

On completion of manual coding, themes were then constructed by combining codes, mapped against this researcher's perceptions and experiences relevant to the research questions in an iterative process. Summary definitions were then created for each theme with interview extracts providing data relevance and weight to construction. Organisational PEB related cultural frameworks, processes and systems were also considered to collect a 'back cloth' of 'follower' shaping mechanisms affecting behaviours, for example recycling policy, incentives and training.

4.4 Results

This section outlines the main findings from the interviews with the following table summarising the Themes from related codes (full codes table in Appendix 8) and supporting explanatory narrative.

Table 8: Summary of themes

Theme	Code Related Description & Leader Behaviours
Enabling conversations (EC)	Conversations on 'eco' issues aided by physical office proximity, influencing thinking and behaviour change inside and outside work such as shopping choices, recycling, waste management, rubbish disposal and printing.
Role modelling (RM)	Leading by example and followers noticing and choosing similar PEB such as 'turning off lights before we go home', reusable drinking containers and reduction of physical files/paper use in favour of IT files.
Encouraging eco behaviour (EEC)	Encouraging and supporting 'eco' values and independent thinking such as proactively raising organisational changes to environmental policy and organisational culture of 'presenteeism'.
Challenging behaviour to do things differently (CB)	'Pushing' on behaviours like printing/travel to reinforce behavioural change and challenging preconceptions e.g. writing/communicating via laptop rather than paper/pen/pad use.
Validating behavioural choices (VBC)	Providing freedom and autonomy to make PEB related decisions such as highlighting the bigger impact of small behaviours, unplugging laptops and supporting staff to decide where/when they can work
Advocating change (AC)	Shaping local cultural framework, working arrangements and the team environment encouraging follower PEBs to flourish such as conversations on organisational 'green strategy' and 'covering work' to reduce travel.

4.4.1 Enabling conversations

Given that close liaison and interaction with followers by leaders manifests in the very nature of managing working day to day working relationships, it seems only natural that many respondents revealed how enabling conversations had an influence on their own PEB, while also representing the second most prevalent theme in this analysis. Indeed, Ramus and Steger (2000) note that: 'even in the absence of a clear direction from corporate leadership, managers can motivate employee engagement in voluntary green behaviours, not least through employee empowerment and quality relationships'. Cantor, Morrow and Montabon (2012) also note: '..because they are more actively involved with each other, "employees attend more to the words and actions of immediate supervisors (as opposed to those of top management)''.

Kim describes this well, also illustrating how his manager's involvement in a 'green training initiative', seemed to facilitate subsequent influential conversations in turn between them: *'I've been with the organisation for 16 years now, just under, and initially when I started in 2005, to be honest I think like the majority of us we just took things for granted and the kind of environmental impact stuff wasn't really at the forefront. At that point Philip was my manager and Philip and I used to have good conversations- I don't know if he was doing the middle management programme or something like that at the time, and he was involved in the kind of the green strategy for the organisation, or whether that was part of his union activity.'*

Additionally, respondents Kim and Jane explain how events and experiences outside the office environment, such as recounting social events in office discussion or reflecting on a media event such as a television show, also stimulates subsequent conversations with their manager for reflection, debate and influence on eco-related issues. Kim explains: *'..we have conversations about what we've done at the weekend and then he'll be like, "Well I had this and I spoke to somebody who could make a use for it," and I think we're very, very similar that way, you know?'* Similarly Janan explains the effect of an influential discussion following a thought-provoking television programme: *'..it was when they were showing how much plastic was in the ocean, and that was so powerful and we were talking about that in the office.. it was a positive discussion because we were thinking, what can we do that can change stuff like that, and we were talking about things..'*

Jane also reinforces Cantor et al.'s (2012) 'active involvement with each other' being key in her examples: *'.. and also like when I'm- Generally when I'm shopping I do pay attention to packaging as well because of those discussions after that documentary and that, like Sarah was one of those people who was talking about it and- Yes, so I guess that would be like a big thing' and 'Well because she sat like kind of opposite me, so as we were working we were just like, we just carried on chatting about it through the day on and off and, you know, so- Yes, it was mostly her..'*, showing that both proximity in day-to-day working and frequency of conversations also have roles to play here.

Rach reveals how her manager emphasised and shared her passion for environmental issues, seemingly in turn stimulating lively debate, reflection and problem resolution on eco-related work based issues here: *'So, there were certain groups, like the eco group, I think was sort of*

looking at things within the office that could be improved which triggered conversations between myself and my manager... things like the coffee machine, you know, those type of things and printing off things. And, you know, having our own mugs and having our own cups and those type of conversations'. Similarly: 'I would definitely be influenced in a positive way by the conversations we had, because although I might say about the coffee machine, for example, then my manager would say, "What can we do about this? Who can we contact? What else is happening in the organisation?"

4.4.2 Role Modelling

Role modelling emerged as the most prevalent theme emerging across all interview data.

Relevant earliest research here earliest research here shows that 'by observing behaviours performed by others.. followers.. initiate and show similar patterns of behaviour

themselves' (Bandura, 1986). Schein (1995) in turn reveals that organisational cultures can

be 'transferred' to employees through 'modelling by their leaders', while Brown et al. (2005)

note that 'role models influence ethical conduct and pro-social behaviour'. In relation to

PEB Raineri and Paillé (2016) noted that 'by helping individuals in organisations to look at

environmental issues with a new perspective, it is reasonable to think that supervisory

support behaviours will influence the employee discretionary sense of attachment and

responsibility to environmental concerns in the workplace'. Paillé and Boiral (2013) note

that managers may encourage employees PEB engagement through 'showing their own

commitment to PEB; showing environmental leadership and communicating green policies

that can send positive signals to employees and subsequently help promote green behaviour'.

Jane describes this well in direct role model effects of her manager : *'..my manager is somebody that I look up to as well, and I almost, and this is really cheesy but I do almost see her as like a second mum because she is like so supportive. So it's like having those sort of like role models-' and 'I think I need to phone Sarah and tell her like, that she's my role model because talking about this has made me realise that actually, yes, I do look up to her a lot'.*

Similarly, Mike describes the 'leading by example' perception and effect of 'modelling' his behaviour: *'I think one of the big things were managers, a specific manager, he'd lead by example. So I'm, I, I'm very observant, so if I see someone turning off all the lights before we go home and tucking the chairs under the desk or tidying up before they go, that does make me think aah, okay, that's, that's the culture we have. That's what I've, I've been inducted into and that's the, the, what I'm going to model my behaviour on'.*

Jim makes particular note of observing and repeating valued behaviour in: *'He uses a cup like I do, he only uses the cup he doesn't use plastic or anything like that. He doesn't use plastic knives and forks he's brought his own in and he cuts his fruit up every day type of thing. So, things like that. I don't know if this is one, his daughters make cakes and he brings those in. He brings the knife in to cut the cake up and he brings serviettes.. If I noticed him doing things then I would try and do them as well. He's doing the right thing. If he's doing the right thing, it's a good example to show people and I like things like that'.*

Finally Simon describes the support, empowerment and reinforcement of relevant behaviours in: *'Yes, so, comments about the need to use less paper.. Yes, so the supportive, as in, I think there was a will and a drive to do so, anyway and it was comments supporting that agenda, shall we say?.. Yes, saying it and role modelling it, certainly. I don't know about it influenced me more because it was pretty much aligned to what I and many others were saying and doing, anyway, so it was more, I think if it had gone the other way, and she was saying something, that we need to, for argument's sake, use lots more paper, then that would have been more noteworthy. But it was actually just completely aligned to how, to the approach that we had. Yes, both easier and empowering to, basically, give you the confidence to keep pushing that agenda, or keep sharing those views and trying to bring other people with you, knowing that your manager is of a like mind is helpful. And knowing that you're not going to get awkwardly contradicted if you try or have your knuckles rapped, or anything like that, if it's the contrary. So, no, it was supportive'*.

4.4.3 Encouraging eco behaviour

Robertson and Barling (2013), found leaders' personal pro-environmental behaviours and transformational leadership directly influences employee pro-environmental behaviour. This in turn helps convince followers they can also achieve pro-environmental behaviours, supporting employees to consider environmental issues in new and innovative ways while also encouraging their passion for environmental issues. Several staff emphasise the

specific managerial encouragement provided in differing contexts through championing, facilitating new thinking and focussed eco related values.

Anna explains her manager's proactivity on eco-issues: 'Yes, okay, so that would occur for example when we have our one-to-one meetings, and it will be about her relaying some organisational policy, and it might be something she's thought of or she's not thought of but, oh, you know, I'll raise it, and together we need to consider it. So that's a way she prompts me but certainly, you know, any organisational change in terms of environmental policy she will flag that proactively with me.'

She also describes the support to follow through on related eco-related issues, also offering a level of 'resilience' to external challenge where necessary: *'And I don't get the feeling with Wendy that there's, you know, a sense of sort of presenteeism- By and large she encourages us to think for ourselves and I get the feeling that she actually would support us if there was a challenge'*.

Similarly, Paula emphasises her manager's focus in sustaining and driving through follower eco behavioural change in ensuring fridge food was used effectively with a clear moratorium: *'..we had that thing in the office.. when they used to come and clean out the fridge to make sure there was nothing left over that was too old at the end of each week. My*

manager was very focused on people, making sure and just forgetting that it's there.. saying to them, "I will throw it away, we will make sure it is thrown away whether you like it or not,"

4.4.4 Challenging behaviour to do things differently

The third most prevalent theme was through managers' challenging behaviour to do things differently. (Conger, 1999) note that 'environmentally specific charismatic leaders can '..build the norms of pro-environmental change and collective (group) identity' (Conger et al., 2000), which '..guide group members how to behave toward the environment in their daily work activities'. Wesselink et al.; (2017) note that 'this then leads employees to further behave according to the pro-environmental norm that the leader cultivates..' and '..the collective identity that the charismatic leader builds will steer them to go beyond the call of duty to engage in environmental practices and contribute eco-initiatives to the organization's green strategy, as well as provide encouragement and support to their colleagues' implementation of pro-environmental activities. All suggestive of a complex, socio-dynamic, behavioural reciprocity effect illustrated in the following collective quotes.

Ben exemplifies this well during Covid working where his manager challenges his need to physically be at the office and be aware of screen time: *'So instead of driving somewhere, walk somewhere.. I hear that quite often from managers, you know. Take your phone with you if you've got a meeting and you can, you can walk and talk. So I hear that being pushed and I push that to the people that I manage, you know. Don't sit in front of the computer for too long, you know... It could be just to check that people are doing it, you know. Just to*

make sure, you know, just checking Ben, you know, that we're on the same page and, and that's happening. You're looking after yourself, you're looking after the environment..'

Gail notes the travel challenge by her manager: *'The other thing she's very clear about and she was, before Covid, there was absolutely no need for us all to trail down to H. Q. So when we had the two days, we had these two days, and she was right. She observed what was happening in these two days, and it wasn't working'*.

Finally, in the same vein here Ben notes the environmental 'footprint' challenge by his manager: *'Lorna has something she used to say which is what's the return on investment? So what's the R. O. I. for us and that in time, in travel, in everything that we do.. So if we, if we're looking to travel somewhere by car and there's an option for public transport, or not to go at all, she will question as to why you're going by car. So I think she's very good that way. So certainly, I think there was, Lorna had influence on us, or certainly me, in how I planned my meetings, so that I.. reduce the footprint, so you are as economical as possible'*.

4.4.5 Validating behavioural choices

A significant portion of the data is collated in the theme 'validating behavioural choices, where the respective manager provides the freedom and autonomy to make PEB related decisions and follow through with corresponding behaviour. Robertson and Barling (2013) articulate this leader/follower behavioural dynamic clearly in explaining: 'the (manager's) attention to ethics and ideals is likely to resonate with employees, leading them to accept

the leader's environmental values and plans. Moreover, environmental transformational managers develop employees' capacity to perform PEBs by providing training and encouraging them to apply *diverse perspectives and develop multiple solutions.*' It is the additional 'involving people in problem solving by encouraging environmental suggestions' that provides an overall sense of advocacy and underlying support.

Kim offers a rich example here in: *'..Because then you're reducing risk regarding your car, your reducing risk as in accidents etc, and you're going up via the train which is obviously more cost effective to the environment. So what he's done is, is in the longer journeys he's given me that flexibility to be able to say, "Well actually, do you know what, I'm going up to Inverness, I can take the train up." So you're doing the kind of more cost effective journeys now.'*

Kim continues in explaining how his manager helps him consider the environmental bigger impact of smaller behaviours: *'..you've got the bigger impact as in the risk assessment, you've got the bigger impact as in the environment, you've got the bigger impact as in, you know, you're not driving so you're not focusing all the time. So there's less risk to you again. You're not having to stop, you're going straight up there. You know, you're up there, your fresh, you'll be able to do your meeting and you'll actually be able to focus a lot better.'*

Finally, Lucy emphasises the managerial endorsement and reinforcement in PEB choices as part of the validation process in the 'clear desk' and unplugging unused workplace laptops support initiative: *'Yes, so things like that clear desk policy for example with unplugging laptops every night, so that they're not just sitting on a desk. When people are rushing off at*

the end of the day and they don't do it- this makes me sound like an absolute tyrant, but I would go and unplug their laptop and remove it. Then they would have to come to me and say, "have you got my laptop?" and I would say "yes and why hadn't you unplugged it last night." Because I knew that Mike endorsed the fact that we should have, a) a clear desk policy and then b) that does help. It's that win win situation, a) it's for the security, so that we're not losing laptops if somebody happens to break into an office or anything like that and b) it has the environmental impact. On both of those counts I knew I had Mike's support, endorsement or whatever else. So, if I was acting like a bit of tyrant over it, I knew that I wasn't then going to have to justify it to Mike in that way'.

4.4.6 Advocating change

The manager as change agent in relation to follower PEB is explained in their shaping of local cultural framework, working arrangements and team environment to enable follower PEBs to flourish. Ramus and Steger (2000) for example show that: 'by allocating time for training and competence building, adopting an open communication style, or sharing information, supervisors provide employees with the conditions of possibility for greater emancipation and change'. Similarly, Boiral et al., (2015) note that managerial behaviours can be 'modelled and emulated by employees, resulting in a multiplier effect that bears on the shape and trajectory of the organisational greening process'. While Conger (2000) note: 'charismatic leaders are perceived as architects of radical change and role models of exemplary acts entailing great devotion, personal risk, and self-sacrifice'.

Kim exemplifies this well in describing the co-creation of working arrangements with corresponding positive PEB outcomes: *'..now we're trying to schedule meetings so we've got two or three meetings all in the one place. And what we've done before as well is if I've been in one part of the country and he has a meeting due in that part of the country, I will go to that meeting in his absence, and if I've got one where he is, he will go to my meeting in my absence.. if we can inter-switch who's going to be there. But it's just about trying to think and work a wee bit smarter'*.

Similarly, Simon explains his manager's co-shaping an 'eco-initiative review' of member 'freebies' to sustainable alternatives: *'Yes, so we order freebies, don't we, for members? So, this is stuff, basically, a lot of that is traditionally plastic and throw away gadgets and gizmos that we offer to people at recruitment and we'd had conversations about, can we do that in a more sustainable way? Is buying 2,000 plastic pens a good idea or should we look at -? And one of the things we did was explore more environmental alternatives that we could spend that money on and therefore be, or try to be, an exemplar organisation. So, we bought things like reusable water bottles, recyclable or pens made from recycled materials, those sorts of things. So, we got less of them but they were better.. Partly driven by Susan, yes, it was an initiative and it was joined partly by Susan and the team within the region'*.

While Sam shares her manager's 'eco-consideration' as part of office reconfiguration through a collaborative team discussion: *'Well she's got a meeting tomorrow, with, Liz has*

set up a meeting to look at what we want from Cardiff Gate from the offices, and if they're going to look at reconfiguring the office, what do we want in terms of spaces. Like that conversation that Fay started the other day. You know, do you want collaboration spaces, quiet spaces, you know. You know, outdoor space you can go and sit in. Yeah, but I think she's invited everyone that's based at Cardiff Gate. I think it's more about what do you want..'

4.5 Conclusions

4.5.1 Leadership behaviours enabling employee PEB

This empirical study sought to explore specific leadership behaviours that encourage and facilitate PEB in employees, with the supporting aim of providing greater insight and understanding of the leadership behaviour effects on workplace PEB, with implications for enhancing employee behavioural change. Six leadership factors were: Enabling Conversations, Role Modelling, Encouraging Eco-behaviour, Challenging Behaviour to do things differently, Validating Behavioural Choices and Advocating Change. This work contributes to the thinking and debate on how leaders and organisations may shape employee PEB. Table 9 below maps all four currently applied PEB theories' common and key characteristics namely: Transformational Leadership (TL), Green Transformational Leadership (GTFL), Ethical Leadership (EL) and Authentic Leadership (AL), against the outcomes of this study to illustrate integration collectively and with this body of work.

The intention of this mapping exercise was in illustrating how existing leadership theory ‘factorial components’, map both against each other and this study’s outcomes, thereby enhancing current and potentially future theoretical understanding. A short narrative is offered against each of the four theories mapped, coupled with an overall concluding summary. While there is clear overlap in all four key theories mapped in definition and inherent detail and discussed further in overall summary, there are clear links to related sub factors within each. It is worth noting here that manual theoretical mapping is not an exact science, however there appear to be clear visible linkages between all six emerging SLR enabling factors and the four key PEB theories. Despite these challenges, theory mapping offers ‘concrete display of knowledge structures’ enabling effective theory evaluation (Gawronski & Bodenhausen, 2015), supporting best quality scientific endeavour.

		PEB Leadership Theories & Study Outcomes - Key Competencies								
		Leader-follower interaction focus	Visioning, inspiring, motivating	Positive role modelling	Continued self-improvement and learning	Drive/shape environmental performance	Consistency in leadership style & feedback	Transforming followers' motives and values	High levels of integrity stimulating trust	Mission-driven, inspiring collective purpose
PEB Theoretical Mapping & Current Study	Transformational Leadership	X	X			X		X		X
	Green Transformational Leadership	X		X	X	X				X
	Ethical Leadership	X		X			X		X	
	Authentic Leadership	X		X	X		X		X	X
	Current Study	X	X	X		X		X		X

Table 9: Key PEB Leadership Theories & Empirical Study Outcomes Mapping

4.5.2 PEB Leadership Theories Summary Descriptions and Key Competencies

All four leadership theories have been content analysed qualitatively to identify the most common and overriding competencies amongst all (X axis in Table 9), then mapped against each theory as well as this study's outcomes (Y axis) to illustrate overlap, difference and congruence. Supporting summary definitions of each theory are also offered as follows:

We noted earlier that Transformational Leadership (TL) facilitates PEB followership where 'environmentally specific charismatic leaders may build the norms of pro-environmental change and related collective group identity' (Conger, 1999). Moreover, the focus of these leaders is in inspiring and motivating followers against shared visions through charisma, tailored communications, intellectual stimulation and inspirational motivation. Specifically, they are seen to be 'pushing on behaviours' and 'transforming individuals through engagement' in seeking to understand and shape motives of followers (Bass & Avolio, 1994).

Green Transformational Leadership (GTFL) has also been discussed, seeing managers act as role models through discussing environmental values, focussed on environmental protection and acting on environmental issues. Specific characteristics of note are 'Involves and engages followers in green processes', 'Involving and engaging followers in product innovation and related activities' and 'Helps motivate employees to acquire new knowledge related to PEB issues and work aspects'. (Graves et al., 2013; Robertson & Barling, 2013).

Contrastingly Avolio and Gardeners' (2005) work on Ethical Leadership propose that these leaders exhibit genuine and ethically driven leadership behaviours incorporating: transparency, integrity and moral reasoning thereby inspiring trust and a positive culture.

Finally, although there is no definitive definition of the growing field of Authentic Leadership (AL), additionally with inherent clear overlap in qualities to EL, there is an overriding focus on people and ethics over share price and profit. Consensus on the qualities of these leaders in the literature centres on emotional intelligence, openness to feedback, resolving conflict with honesty and a consistency in striving for an authentic leadership approach.

4.5.3 Theoretical Mapping Conclusions

Theory mapping alongside this study was intended to provide an overview of combined learning, conceptual commonalities and differences as well as future research opportunities. While the exercise has provided insight against this study's hypothesis of identifying leader PEB enabling factors in informing commonalities and differences in both existing PEB applied leadership theories and this empirical study's key outcomes, significant learning is also offered by way of a research contextual map whereby no one theory or this study's findings is seen to sufficiently capture the complexity of the leader/follower PEB dynamic. In identifying nine key common competencies across all four theories for the grid map, at best a correlation of six competencies against any one theory is revealed, which while insightful we keep in mind the limitations of any mapping exercise in scientific endeavour. However,

there appears clear opportunity in combining collective findings (discussed further below in 4.5.6 'Implications for future research', bringing together one new theory and model. It is worth noting too from this mapping exercise, that in combining all outcomes of this study with that of Authentic Leadership theory in Table 9, all of the competencies are realised with complete overlap in three areas: Leader/Follower interaction focus, Positive Role Modelling and Mission Driven Driving Collective Purpose. Given the additional qualities of authentic leadership discussed in terms of 'overriding focus on people and ethics over share price and profit' and 'emotional intelligence, openness to feedback, resolving conflict with honesty and behavioural consistency', these qualities appear to be very much in keeping with this study's outcomes and the rich illustrative examples discussed via RTA. Additionally, while it is clear this study has revealed a fresh competency framework but no novel theory in relation to leaders PEB, it also offers significant enhanced learning through guidance on future theoretical development and in consolidating existing thinking and understanding.

4.5.4 Leadership behaviours enabling PEB

Six key leadership enabling behaviours elicited from this study have been successfully mapped against four prevalent leadership theories frequently applied in PEB research. The significant advantage of this study is in offering rich contextual examples discussed across these six behaviours and significant overlap across all four leadership theories revealed common competencies among them. Additionally, no one model or theory analysed includes all mapped common competencies, indicating that the leadership qualities

required to enable workplace PEB is an amalgamation of several leadership models and therefore the need for work in developing a new model/theory to encapsulate these qualities collectively. While this mapping exercise has been insightful in guiding theoretical integration, the six leadership behaviours elicited offer a constructive framework of aspirational competencies to assist leaders in shaping individual and collective cultural PEB.

4.5.5 Strengths and limitations of the study

The core strength of this study is in the qualitative nature of approach, offering rich data and greater understanding of leaders' influence on workplace PEB. In addition, this researcher has extensive professional experience in 'health related' organisations at both clinical and senior level, helping both to facilitate subject access and openness in semi-structured interview conversations. While this reassurance to the organisation and subjects from over 30 years of experience in similar cultures can be viewed as an advantage in rapidly understanding cultural narratives and potential analysis, other less experienced researchers from differing backgrounds may also provide a fresher perspective in approach and outcomes.

Secondly while there is additional advantage in sampling a gender mixed sample (9/15 - male/female) to gain a balance of views, especially given the predominant female population throughout the organisation (30%/70% - m/f), there may be gender differences unaccounted for in this research. Similarly, age, tenure and geographic location differences are also unaccounted for here especially given the relatively small sample size.

While concerted efforts have been made throughout the research process in listening to and reporting on personal accounts of PEB, it is this author's interpretation alone that is reported in findings here. Moreover, as mentioned in my reflexive stance (Methodology 2.5.2), potential bias is considered as additional context and an inherent part of the RTA process through a combination of continuous reflection of personal biases affecting research proceedings, regular journalling throughout the process, continual liaison with supervisors and fellow researchers and rigorously following the research process.

Limitations of this study centre on the small sample size, cross-sectional design, single country focus and business sector namely employee union, professional body and charity. These factors create challenges in generalising these findings across differing industries, cultures and populations. Secondly, suffice to say also that while subjects' ethnic origin was not captured in this study, the sample was predominantly white (13 of 15 subjects) and there may be factors and findings unique to subjects of other ethnicities unaccounted for here. This is especially important as environmental behaviour has been seen to vary widely between ethnically differing groups, for example Johnson, Bowker and Cordell (2004). Their study on a US national survey examining environmental beliefs and action, showed ethnic minorities scored significant lower on environmental beliefs and four recycling behaviours. These findings are also in line with other researchers work on ethnic minorities' differences in PEB (Parker & McDonough, 1999).

Thirdly as discussed in this author's reflexive position, reflexive stance and epistemology, the very nature of the methodological approach applied here, RTA application and this

researcher's unique individual background and research lens will also limit generalisation of findings. Finally, tenure, education and age of participants were somewhat narrow in spread. Tenure for example was heavily skewed toward longer employment status of between 4 and 32 years, education noted as both at professional and tertiary level and age predominantly 30 plus years and skewed toward the 50/60 age group. Therefore, there is further opportunity in future sampling for broader representation across these groupings.

4.5.6 Implications for future research

Firstly, there is opportunity for more extensive research from the leaders' perspective specifically examining the conflicting challenges they face in role in promoting PEB. We have seen that leaders have a transformative capability in PEB amongst staff, but still have limited understanding of how organisational cultural differences, industry sectors, national differences as well as gender and ethnic variations affect workplace PEB. Consequently, larger scale research internationally encompassing some or all of these factors would go some way in enabling deeper understanding.

Secondly, given ethnic minority differences in PEB behavioural orientation and actions already identified in research to date, there is a current absence of research in the leader-follower PEB field and little if any data collection on ethnic minority status of subjects in findings. Considering increasingly widespread employee diversity mix across all industry sectors, there is significant opportunity also in this area, in understanding both geo-cultural and ethnic differences related to PEB.

Thirdly, given both the overlap and gaps outlined through the mapping exercise illustrated here in existing applied PEB related theoretical leadership frameworks used and this empirical study, there is opportunity to translate these findings into a new measure to be tested. When applied with a methodology combining the four related published scales and the six enabling factors identified in this study, there is potential to develop a new contextually rich model of PEB leadership. This helps support one of the aspirations of this study in developing a potential theoretical PEB framework and while this has not been offered through this research approach, there is clear suggested direction here in doing so.

Finally, although this research offers enhanced understanding of PEB in one large charitable professional body and employee union, within this sector, it is specialised in nature being focussed on medical personnel namely nurses and allied professionals, with an additional educational focus. Given this unique organisational focus and make up, there is opportunity to expand this reach further in research across the wider charitable, union and 3rd sector industries for comprehensive understanding and applicability of findings, as well as other industry sectors.

4.5.7 Implications for policy and practice

Learning from this study offers practical steps for both leaders and organisations in enhancing employee PEB. We have seen that increasingly organisations have environmental outcome measures as part of their vision, corporate strategy and management delivery plan also viewed as key to competitive advantage and overall business performance.

Firstly, there is opportunity for 'green' training for both leaders and followers in 'choosing' PEB related actions in execution of daily work tasks. Management and leaders' programmes for example could include a segment on PEB factors identified here, supporting staff in organising, managing and delivering work programmes with these factors in mind. Indeed, there may be opportunities for PEB themed learning and development throughout the employee lifecycle from induction, through staff development and enabling greater PEB 'traction' in performance evaluation and feedback.

Secondly, we are increasingly seeing prospective employees select organisations for their 'green credentials' suggesting additional opportunity in the marketing of roles and selection and induction design with these six PEB factors in mind. Given these factors are essentially practical in orientation, mentors, coaches and organisational 'buddies' also have potential to assist those more committed organisations in bringing about real behavioural change.

Thirdly the 'Greening Government Commitments Policy Paper 2021 to 2025', additionally outlining net zero strategy planning and actions by 2050, outlines a range of ambitious targets to be delivered much of which is through collective employee behaviour in organisations. This six-factor framework offers readily applicable processes, training and behavioural enhancement framework as outlined above in helping to meet these targets.

Fourthly, given the majority of enabling factors here (four of six) have both 'proximity' and communication focus of leaders in influencing followers, organisations have opportunity to review physical office space, team layout, job design and frequency of 'same space' coworking to create the best potential environment and culture for enhanced workplace

PEB behaviour. These four factors from this empirical study are: enabling conversations, role modelling, encouraging eco-behaviour and challenging behaviour to do things differently.

Finally, the two factors of validating behavioural choices and advocating change indicate opportunity for organisations to support and encourage involvement and participation through enabling employees to manage and design both the work environment and working practices to shape the prevailing local culture. The contextual examples illustrated in these two factors indicate that elevated employee autonomy and freedom in relation to PEB related working arrangements, coupled with leaders' corresponding supportive and frequent communication, may contribute to enhanced workplace PEB outcomes.

4.5.8 Conclusion

To conclude, a contextually rich six factor PEB leadership behavioural framework has been identified. This study provides greater detail on leader PEB behaviours and providing clear indications for further research. Additionally, there is opportunity to practically apply this framework in work settings to enable enhanced PEB cultural shift, especially amongst immediate followers. Moreover, a theoretical mapping conducted against existing prevalent PEB leadership theories, offers a comparative understanding and an opportunity to combine findings with existing theoretical leadership scales for a potential new PEB theory and model.

This study makes two significant contributions to current knowledge. Firstly, a contextually rich six factor PEB framework explaining the leadership behaviour effects on PEB in the workplace with practical implications for enabling employee behavioural change. Secondly, in mapping these factorial behaviours against existing leadership theories, there is merit in offering opportunity for a combined theoretical approach to advance thinking in the PEB work place field still further. In doing so, there are opportunities for practical application and further research.

Chapter 5: Implications for theory, research and practice

This final chapter brings together all four prior chapters with the objectives of: firstly, summarising this thesis' aims and combining outcomes from both systematic literature review and empirical study in meeting these, secondly to reflect on contribution to knowledge and learning, thirdly discuss practical implications of this thesis and fourthly offer final conclusions. By way of illustration to support discussion on collective outcomes, Table 10 (p. 152 below), provides a summary synthesis of both completed studies.

5.1 Aims and overall findings

Chapter three aims were to examine the role of organisational factors in influencing pro-environmental behaviour at work, specifically barriers and facilitators. Essentially while we have noted increasing interest and research in specific organisational factors and PEB, none prior to this study had explored an overview of all factors at play.

Overall findings from this study offered three key factors facilitating work PEB: Green Learning, Transformational Leadership and corporate social responsibility (CSR), providing initial evidence for organisational PEB influence and effect.

Chapter four aims were three-fold. Firstly, to explore the leadership behavioural effects (processes, mechanisms and factors at play) on workplace PEB, with implications for enhanced employee behavioural change. Secondly, to contribute to existing literature

through deeper insight on the leader/follower relationship with respect to PEB and potential modular or theoretical development. Finally, to identify activities, processes and procedures that organisations may implement, to enhance workplace PEB at both leader and follower level. Findings revealed six enabling leadership PEB factors, providing greater insight to leader-follower PEB dynamics: Enabling Conversations, Role Modelling, Encouraging Eco-behaviour, Challenging Behaviour to do things differently, Validating Behavioural Choices and Advocating Change. Fuller discussion of both studies is covered in 5.1.1 and 5.1.2 below.

By way of reminder as to the research opportunity and gap that chapter 4 intended to address, research to date had revealed several clear opportunities to advance both knowledge and organisational application. We noted that while 'green leadership transforms and influences (Bass, 1990), shapes values and motivations of followers (Rost, 1993), is a social influence process (Yukl, 1993), supports followers' motivation toward green goals (Han et al., 2016), enables new green products and services (Andriopoulos & Lewis, 2010) and internal competencies necessary for green innovation (Chen and Chang, 2013)', chapter 3 revealed that by far the majority of studies were quantitative (12 of 13), while still failing to explain the nuanced dynamic process of leader/follower influence.

We also noted that novel research through ‘the application of qualitative research to understand leadership influence generally (Parry, 2002), is a convincing case’, for several key reasons: ‘firstly psychological approaches using quantitative methods have yet to yield an integrated theory of leadership, secondly leadership is by nature complex, dynamic and longitudinal indicating alternate methodology and thirdly leadership as social influence process is in need of deeper investigation of inherent socio-dynamics here, through research strategies reflecting the breadth, depth and range of variables impacting PEB.

Conclusively then this thesis has provided data to address the gap in enhancing knowledge of the organisational factors influencing work PEB discussed above, while also offering greater understanding on how leaders directly influence followers through key competencies that shape behaviour, with additional clear indication on how further research may deepen that understanding. Prior to this thesis, both research aims of chapters three and four in seeking to understand organisational and leadership PEB factors respectively, revealed a knowledge gap now significantly addressed through this work. The following discussion reviews and explores the evidence elicited from these studies at both organisational and leader level.

Table 10: Synthesis of findings from both studies

	Study 1 – systematic review	Study 2 – empirical study
Key aims	<p>What is the role of organisational factors in influencing PEB at work?</p> <ul style="list-style-type: none"> • What organisational level factors are barriers to PEB at work? • What organisational level factors are facilitators to PEB at work? 	<p>What are the identifiable PEB leadership behaviours enabling employee PEB?</p> <ul style="list-style-type: none"> • Is there a theoretical framework of the process?
Method	<ul style="list-style-type: none"> • Systematic literature review • Search yielded 274 papers 	<ul style="list-style-type: none"> • Semi-structured interviews with 15 employees of mixed role and geographic location within the Royal College of Nursing • Reflexive thematic analysis
Sample	<ul style="list-style-type: none"> • 13 studies met inclusion criteria • Total of 2,976 participants • 8 studies were conducted in Europe • 5 studies: Turkey, Pakistan, China, Macau, South Africa and Russia. 	<ul style="list-style-type: none"> • Age predominantly 20-30yrs (n = 1)30-60yrs: 30-40 yrs (n = 5), 40-50 yrs (N = 6), 50-60 yrs (n = 3) • Reasonably gender balanced given organisational female dominance (9 female/6 male) • UK wide regional spread: London, South East, Scotland, Midlands, Wales and South West
Key findings: Organisational level factors as facilitators to PEB at work	<p>While no study looked specifically at PEB facilitators, clear evidential data showed:</p> <ul style="list-style-type: none"> • Transformational leadership Behaviour is facilitator to PEB at work • Education, Social Marketing, Green Training and Group Feedback are facilitators to PEB at work • Corporate Social Responsibility is a facilitator to PEB at work 	Not applicable
Key findings: Organisational level factors as barriers to PEB at work	<p>No studies showed evidence of clear barriers to PEB at work</p>	Not applicable
Key findings: Identifiable PEB leadership behaviours enabling employee PEB	Not applicable	<p>Six factors identified:</p> <ul style="list-style-type: none"> • Enabling conversations (EC) • Role modelling (RM) • Encouraging eco behaviour (EEC) • Challenging behaviour to do things differently (CB) • Validating behavioural choices (VBC) • Advocating change (AC)

5.1.1 Findings from study one – systematic literature review

The objective of this study was to provide a systematic review identifying what organisational level factors act as both facilitators and barriers to PEB at work. Once all 13 studies elicited were quality assessed via an adapted mixed methods framework, wide variation in overall research quality was revealed. Additionally, as only initial evidence was noted in three areas identified, caution should be noted in interpreting findings and drawing conclusions. However, with increasing interest and research in organisational PEB factors, no research has as yet explored an overview of all factors at play. Three key factors facilitating work PEB: Green Learning, Transformational Leadership and corporate social responsibility (CSR), provided initial evidence for organisational PEB influence and effect. Of note is the Green Learning factor representing an umbrella term encapsulating sub-factors of: education, social marketing, green training and group feedback found in four intervention papers reviewed.

While this study builds on research to date in endeavouring to encapsulate organisational PEB factors, both variable study quality and only initial evidence noted in papers, indicate limitations for organisational application, however methodological improvements for future research are also offered. Finally, we noted that all studies analysed, applied varying and convoluted measures of PEB, offers opportunity for integration of one collective measure in future study and more extensive research on the specific organisational leadership behavioural interplay that may influence followers.

5.1.2 Findings from study two – empirical study

Study two examined how specific leadership behaviours influence follower PEB, with potential to develop a novel theoretical framework of this dynamic.

Findings revealed six enabling leadership PEB factors, providing greater insight to leader-follower PEB dynamics. These findings contribute to enhanced theoretical understanding through the potential to integrate existing leadership theories previously applied to PEB research, also offering opportunity to test and synthesise existing survey scales applied in combination with this study's novel outcomes for a fresh PEB scale. Moreover, rich contextual understanding of the leadership/PEB dynamic is also offered through an insightful mapping process illustrated and discussed in chapter four, where the four currently applied PEB theories' common and key characteristics namely: Transformational Leadership (TL), Green Transformational Leadership (GTFL), Ethical Leadership (EL) and Authentic Leadership (AL), were mapped against the outcomes of this thesis' study, revealing clear areas for future research opportunity. Specifically, we learnt that 'while there is clear overlap in all four key theories mapped in definition and inherent detail, there are also clear links to related sub factors within each'. Especially notable is that 'no one theory or this study's findings is seen to sufficiently capture the complexity of the leader/follower PEB dynamic.' Essentially the nine key common competencies across all four theories for the grid map, showed at best a correlation of six competencies against any one theory.

However, we note clear opportunity in combining collective findings with the aim of developing one new theory and model. We also learnt that through combining all outcomes

of this study with that of Authentic Leadership theory, all competencies were realised with entire overlap in three areas: Leader/Follower interaction focus, Positive Role Modelling and Mission Driven Driving Collective Purpose. We also noted that when we viewed these findings along-side other key qualities of authentic leadership, especially: an 'overriding focus on people and ethics over share price and profit' and 'emotional intelligence, openness to feedback, resolving conflict with honesty and behavioural consistency', there was clear overlap with this study's outcomes and the detailed examples offered through RTA. Also, while no novel theory in relation to leaders PEB is revealed, a fresh competency framework has been developed, providing clear direction and opportunity for future theoretical development and greater understanding of the leader/follower PEB dynamic.

Collective findings from this research thesis show that while workplace PEB knowledge remains a relatively new area of study at both organisational factorial level and in terms of leadership behavioural influence, there remains no one conceptual measurement for organisations, or a comprehensive theoretical construction of the leader/follower process. We also noted in chapter three, that researchers used mixed methods, scales and multiple conceptual approaches with varying quality. This finding is helpful suggesting that future work is better placed in developing more robust measures at both organisational and individual leader level.

Suffice to say, while fresh detailed insights are provided in this new research area through the granular approach of this qualitative research study also limits generalisation. Further limitations of this study are limited sample size and the singular organisation researched also inhibiting generalisability. Finally, clear indication from this study is for further research in this much under represented workplace area of leader/follower PEB, enabling greater understanding of this complex and little understood behavioural dynamic.

5.2 Implications for research and practice

5.2.1 Future research suggestions

The SLR highlighted a need for further research. A limited numbers of papers were found (13) and the challenges of depth, quality and robustness in papers reviewed limit our understanding. Interestingly, the Euro-centric nature of studies (10) and limited research elsewhere (singular South African, Russian, Vietnamese, Turkish and Chinese studies), fails to provide balanced regional findings, increasing interest domestically shows promise to improve this. While geographic range, industry breadth and research volume are also limited, we have also seen encouraging early work in the 13 studies reviewed.

As a result, broader research spread in Europe and internationally would further deepen this PEB knowledge. Both studies in this thesis clearly add to the euro-centric nature of research study to date and while only one study (Zibarras & Coan, 2019), sought to cover multiple

organisations and sectors exploring HRM practices, it remained UK centric with opportunity for wider geographic reach here.

Secondly, there is a need for more robust methodological approaches. The studies included in the SLR were limited in design, with most applying a cross-sectional one-time point approach, indicating opportunity for mixed methods, qualitative and longitudinal structure, to further enhance learning and widen the body of research. Similar methodological limitations in chapter study two were in the one organisation studied and small sample size, while offering rich data, impedes generalisation.

Similarly, only several SLR industry sectors were represented with limited and highly variable demographic data including: role, function, age, gender and profession. Also, absence of analysis on whether demographic differences mentioned may affect outcomes achieved, presents significant opportunity for research quality improvements in this area.

Thirdly, there is a need for further understanding of the role of organisational context. The SLR studies reviewed offered only limited information about organisational research contexts, creating difficulty in drawing conclusions about contextual impacts on research outcomes. Contrastingly, while study two found there is great opportunity for more extensive research from the leaders' perspective examining the multiple challenges, they

face in promoting PEB, we do have rich detail on the nature of the organisation and individual views. It seems collectively both studies offer future learning through a potential 'hybrid' research approach, where we may exploit the rich detail offered through detailed analysis of subjects as in study two, while attempting to broaden reach across countries, sectors, organisations, genders and work specialisms. Clearly this presents greater challenge for research of enhanced depth and scale, although potentially offering rich reward for theoretical and practical implementation of workplace PEB given opportunity discussed.

We learnt then that leaders have transformative capability in PEB amongst staff (Singh et al., 2020; Mittal & Dhar, 2016; Han et al., 2016; Chen & Chang, 2013), also indicated through all six competencies in study two identified and rich contextual examples, but have still limited understanding on how organisational cultures, industry sectors, nationalities, genders and ethnicity affect workplace PEB. Learning from both these studies also suggests that large scale international research addressing all these factors, would provide a richer picture of demographic differentials.

Fourthly, there is need to understand the role of ethnicity in workplace PEBs. This author's empirical study and SLR findings show significant gaps in capturing ethnicity data capture and thus potential differences here. Additionally given ethnic minority differences in PEB behavioural orientation and actions already seen in research to date, there is current absence of study in this leader-follower PEB field and limited data collection on ethnic

minority status of subjects in findings. In view of increasing widespread employee diversity across all industry sectors, there is also significant opportunity here in understanding PEB geo-cultural and ethnic differentials.

Finally, there is also significant opportunity for wider industry breadth as realised from findings in both studies. SLR studies are almost entirely within higher education, hospitality and the public sector and although this author's research offers enhanced PEB understanding in one large 3rd sector professional body, it is specialised in nature focussed on medical personnel and allied professionals, with an additional educational focus. Given this existing limited sector focus, there is clear opportunity to expand research reach across the 3rd sector and all other industry sectors.

5.2.2 Practice and policy implications

Looking at learning from both studies with regard to practice and policy implications there are interesting commonalities. Firstly, aside from behavioural and hygiene factors already discussed, study outcomes revealed a range of organisational levers that organisations can practically consider for PEB effect. These include robust assessment of fit between employees and an organisation's PEB values (Luu, 2019a), designing 'human capital' education, training, and communication for elevated environmental sustainability (Fatoki, 2019) and management training on inspirational persuasion skills to translate green strategy

into PEB and action plans (Luu, 2019b). The latter also correlates with the important influence of how managers and leaders can shape followers' PEBs noted in chapter three.

Secondly combined learning clearly rests in communicating environmental policy, strategy and CSR (Raineri & Paillé, 2016: Tian & Roberston, 2019), green training and evaluating related HRM practices (Zibarras & Coan 2015: Pinzone et al., 2019: Börner et al., 2015) and finally consideration of the perceived organisational support to act pro-environmentally friendly (Wesselink et al., 2017). Government agencies and lobbying bodies may also play a role in influence, governance and support to actively embed these PEB initiatives.

Thirdly, both studies similarly offer practical steps for leaders and organisations in enhancing employee PEB. We are increasingly seeing organisations define environmental outcome measures as part of their vision, strategy and management delivery plan enabled through leader behaviours, also viewed as key to competitive advantage and overall business performance.

5.2.3 Contribution to knowledge

Chapter three 'shone a light' on methodological improvements in transparency, robustness and replicability being the most significant opportunities for enhanced quality in this body of knowledge, with additional focus on improving granular understanding of key organisational factors enabling PEB given nuance and subtlety of respective processes at play. There remains significant opportunity for extensive research to enhance understanding of organisational PEB processes building on initial SLR evidence of three key influential factors.

This empirical study offered a contextually rich six factor PEB leadership behavioural framework providing learning and indication for further research. There is an opportunity to use the framework in work settings to enable a PEB cultural shift, especially amongst immediate followers. Additionally, mapping the new framework against existing prevalent leadership theories offered supportive contextual research understanding and opportunity to combine findings with existing theoretical leadership scales for a potential new PEB theory and model. The findings of the SLR and empirical study show leaders are key in influencing followers within the PEB dynamic supporting organisations in their environmental and sustainability endeavour. This research collectively offers new learning and research indication in understanding this concept still further.

5.2.4 Personal Learning and Reflection

As far as my personal learning and reflection is concerned, while this highly challenging study has undoubtedly brought profound personal insight and learning, I am heartened that my original passion for making a real difference to environmental degradation through attenuating workplace behaviour appears to have borne fruit. The scientific evidence for climate change discussed in detail in Chapters 1 and 2 coupled with continually emerging data and increasing concern of governments and nations to mitigate negative effects, gives me greater hope that work places and employees can make a great impact on realising change. Coming full circle back to the key PEB definitions: 'behaviours causing minimal harm to, or even benefit the environment', Fatoki (2019) and 'behaviours that can reduce the negative impact of individuals on the environment' Kollmuss and Agyeman (2002), my own conclusions from these two significant studies, indicate the triadic relationship of behavioural choice, organisational support and leadership may well be key levers for positive shift.

This appears to connect well with Robertson and Barling (2012), in examining leaders' influence on PEB found that 'environmental descriptive norms predicted their style and PEB, in turn affecting their subordinates PEB accordingly, suggesting a complex behavioural causal loop' and is suggested from both studies here, examining this relationship more fully may offer understanding for greater influence and effect. Moreover, coupling this learning with Staddon et al.'s (2016) work in evaluating behavioural change interventions, finding those

creating 'social and physical opportunities for employees to save energy are the most successful' essentially through enablement and empowerment 'including direct support and greater control to employees', correlates with overall leader PEB factors in study two. There is a timely opportunity to build on this collective contribution to advance both the theoretical models that inform PEB and practical action to mobilise leader and follower behavioural workplace change.

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Appendix 1: Reflective Assessment

Jerry Martin 27/05/23

Stage	Questions	Reflections
Scoping out your research idea	What challenges did you face and how did you overcome them?	Amazingly here I still am 3 years after major cancer surgery, one and a half years after a nine-month course of immunotherapy which reduced the cancer, but sadly no hope of cure after recurrence and growth and multiple drug trial considerations, realising they are more dangerous than curative. I mention all this health stuff to underline dear reader, the momentous and ongoing life challenge that is Stage 4 cancer while completing study and research at this level. I overcame these challenges through the realisation that my Doc. study is a wonderful distraction from the fear, horror and anguish that facing end of life brings. Forgive the poetic licence but within that maelstrom lies a simplicity of completion and hopeful imminent ending of my research. One of my life time goals, more acute now than ever is in this completion and my hope that the Gods allow me the time to do so. I remain forever grateful to my two gifted supervisors and the gift of learning.
	Did your initial idea change during this stage? If so, how and why?	My idea has built and grown and I find myself incredulous at the fact I have powered through this study despite, cancer treatments, multiple A&E visits and investigations. I feel more motivated than ever to see this journey of study to fruition and increasingly proud of the learning it has brought.
	How did this process differ from your expectations?	The size both intellectually and work wise seemed exponential at each stage, although with some seeming strangely easier than others. I especially my own empirical study and analysis. Self belief and perseverance are what got me through.
	What were your key learnings from this stage?	Consistency in approach, milestones and commitments to my supervisor and not staying away from study for too long despite my health challenges. I am a highly structured and planful individual anyway and I find these qualities stand me in good stead for this sort of challenge.
	What would you do differently if you were to go through this process again?	Not have cancer! On a learning note this health challenge has made me treasure this learning and study privilege even greater, perhaps my disease has even powered even further when I thought many times I may falter.

Jerry Martin 1/11/22

Stage	Questions	Reflections
Scoping out your research idea	What challenges did you face and how did you overcome them?	<p>Since my last reflective document of February 2021, I was making considerable progress having completed most of my SLR, all my research interviews, as well as ethics and upgrade processes up to June 2022 and well on my way to Doctorate completion by end 2021/early 2022.</p> <p>Following several investigations, I was then challenged with an advanced form of cancer requiring major surgery as well as extensive ongoing medical treatment which led to a break in</p>
		<p>studies to Sept 2022. Fortunately, I was able to re-engage with studies and highly motivated to commit fully to completion and made very good progress in thematic analysis, methodology and overall write up. Naturally this has involved deep reflection on my career and life priorities and a re-focus on the importance of my doctoral research which is greatly embedded in my value set and a wider career ambition to reinvigorate my work as Organisational Development Consultant at the Royal College of Nursing where this research was based.</p> <p>One challenge was in reconnecting with the research process and structure, rebuilding and shaping the respective doctoral components and maintaining the energy and focus to complete key tasks while continuing ongoing medical treatment. Thankfully with much tenacity and drive in between treatments I am making considerable inroads toward first draft completion estimated late 2022 early 2023. My next challenge is writing up my methodology for my empirical study having completed analysis, with a view to start pulling my Doctorate elements together into and overall framework. I remain immensely driven to complete and grateful of increasing optimism in my prospective health outcomes to complete the task.</p>

	<p>Did your initial idea change during this stage? If so, how and why?</p>	<p>There have been multiple obstacles to overcome to at this stage of major reengagement in my Doctorate at this stage, first and foremost refreshing my knowledge of both academic material, research process and data completion material. It seemed especially challenging to progress with thematic analysis which took several drafts to reach breakthrough, but was greatly fulfilling to complete coding, themes and the final narrative summary which was enormously satisfying to reach completion on this and enormous grateful to supervisor Rachel to reach this point. Intervening 3-week periods between my medical treatments have driven me to schedule regular Zoom supervisor meets which in turn provides the structure and discipline to push through on regular pieces of Doctoral work for review to continue with sustained programme progress.</p>
	<p>How did this process differ from your expectations?</p>	<p>The process clearly differed from expectations in that I expected to continue with analysis some time prior to Autumn 2022, so I was naturally apprehensive in having pick up the process after a considerable gap. Thankfully one of my Prof. Doc. Cohort had been at a similar stage of progress so we have been able to support each other through this pivotal stage. After immersing myself academically in thematic analysis for my research stage, I was able to apply this to my effectively to my research data after several iterations.</p>
	<p>What were your key learnings from this stage?</p>	<p>Key learnings were firstly in regaining confidence and energy to reengage in the process and at the same time manage ongoing treatments and related side effects. A key reflection here is in realising my ongoing passion, drive and tenacity to continue with my research and reaffirmation of passion for the research subject. Thematic analysis brought me closer to the data and reinvigorated</p>
		<p>my interest in the RCN as well as my continued aspiration to make a difference in our climate challenges and Pro-environmental behaviour.</p>

	<p>What would you do differently if you were to go through this process again?</p>	<p>Despite the initial acutely challenging investigations that led to my diagnosis and treatment I believe I had great foresight to complete all my research video interviews for all 15 participants, the transcription process and almost all my SLR prior to surgery, rendering reengagement in my research easier once health was regained. While the challenging research process commenced with thematic analysis familiarisation before application to my data, the process proved surprisingly rewarding in simultaneously reigniting my interest in the RCN. Given the opportunity to complete this process again I would ideally have expanded my interviews to more subjects throughout the organisation with the objective of 'exhausting' the research process in reaching saturation point with data, codes and themes with the aim of the most robust data set possible.</p>
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<p>Ethical considerations and management of boundaries</p>	<p>What ethical considerations did you make and why? Has this impacted your practice outside the doctorate? Was there anything that you would do differently next time?</p>	<p>Main ethical considerations for me here have been in continuing to ensure confidentiality and anonymity in all undertakings of the research process as well as separation of the research process with employment role at the organisation. This has been quite straight forward in my experience in that I have operated with a 'Chinese wall' separation process in all work and research activities. This has helped on reflection in my work as registered coach and coach supervisor (NHS Leadership Academy) and dealings with clinical specialists. Ideally next time I would prefer to continue the research process without a significant break in the process, as familiarity and continued smooth flow clearly aids progressive completion in a Doctoral programme, however a forced unexpected break enables deep reflection in all undertakings which by contrast can be remarkably beneficial in enhancing the research process as well as deep personal learning.</p>
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Jerry Martin 13/2/21

Stage	Questions	Reflections
<p>Scoping out your research idea</p>	<p>What challenges did you face and how did you overcome them?</p>	<p>The journey has been multi-faceted at this point in the research, writing and cognitive process in progressing many different parts and requirements of the Doctorate experience. The past few months since last formal reflective record as in this format (also been keeping a regular journal of events, feelings, thinking and progress etc.) have certainly been eventful with highlights being successful progress to second year via presentation to a panel of peers and objective assessors in occupational psych field via video format, video proposal and Q & A on the day which all lead to and were part of assessment process. Fair to say that as a whole cohort we were somewhat anxious as there was much to do in preparation, most of all a comprehensive, intelligent and robust</p>

		<p>research proposal which clearly needed to pass muster with our supervisors first and foremost and secondly of course with the many stakeholders mentioned. Thankfully after many late nights and hard graft as well as considerable intellectual focus and personal commitment I was delighted to progress to second year along with the entire cohort. Personally, our cohort team comradery and mutual support we provide to each other on this journey has been second to none and I feel (forgive the expression) truly blessed to be studying such an interesting subject, alongside such kind and gifted fellow Doctorate delegates, with two exceptional supervisors in such a great learning institution! Having said that when I am very weary through work commitments, sleep deprivation (I have had challenges at this difficult time) and the juggling all aspects of life, focus and has been hard at times and the emotional roller-coaster of juggling all this very challenging. Although after a short break from study I am quickly re-ignited through my passion and interest reading a new article, gaining some new learning or sharing new and differing insights with the group. It has to be said too that juggling full time work with my MIND Non-Exec role and study is unsurprisingly hard at times, but each area of effort and endeavour cross-fertilises thinking, learning, insight, reflection and knowledge to the other. Additional challenges include multi-tasking between various parts of the Doctorate programme, which while clearly provide complimentary insights and understanding to corresponding components, also require singular focus and differentiation in completing each respective part. Many of our Doctorate cohort have shared the same insight that intellectual, knowledge and cognitive ‘separation’ and focus on one Doctorate element e.g. the SLR write-up, can be quite a challenge when you are simultaneously ‘holding’ corresponding elements requiring parallel progression and completion e.g. thesis chapters and practical research study. It seems to me at least that therein lies the multifaceted challenges of a Doctoral researcher, both complemented and further challenged by full time occupational psychology work. Other challenges have been in the practicalities of the research process in that we realised that while research in several organisations could be useful and interesting in this body of research, reality of these practicalities along with the elegance and quality of research in one organisation (RCN) would provide better quality research, practical advantages and a more realistic framework of study (see next section).</p>
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	<p>Did your initial idea change during this stage? If so, how and why?</p>	<p>My initial ideas for both SLR and research focus are in essence the same, save for thematic analysis approach in my study which lends itself much more clearly to my research question and focus (see research proposal) and focus on one organisation (RCN). After considerable reflection on the merits and challenges of multiorganisational research in three sectors (professional organisation, charity and 3rd sector it was considered both far more practical and richer in terms of research outcomes to focus on one professional body and charity organisation namely the RCN. Given my relationship with the RCN as employee I have naturally ensured complete objectivity in the research process and balanced a supportive interest in the research outcomes with the production</p>
		<p>of an executive summary report of findings (naturally entirely anonymised protecting confidentiality) given the mutual interest in these outcomes. The research outcomes of both SLR and my own practical research remain unchanged i.e. organisational factors and influences in the leader/follower relationship in relation to PEB.</p>
	<p>How did this process differ from your expectations?</p>	<p>The process largely has not differed from expectations as the stages of progression in both SLR write up and the practical research itself have always been clear, however suffice to study the quantity of work involved has always been difficult to maintain given the multiple parallel work and challenges. Despite this my passionate and interest for the subject have always driven me through. Feedback and learning for early iterations of my SLR has definitely been educational and I remain highly motivated to complete my study within the next few weeks to enable greater focus on thesis write up and practical research work including interview set up, process, transcribing, coding and analyses etc.</p>
	<p>What were your key learnings from this stage?</p>	<p>There have been many key learnings form this stage from style, approach and learning from SLR write-up drafts to, ethics committee successful sign-off and practical aspects of the research process itself within the RCN. Synthesising and analysing effectively all 17 papers in my SLR has taken longer than I imagined as well as balancing academic rigour/writing style with the portrayal of research interest with practical and meaningful results of value to this body of research and the academic community.</p>

	<p>What would you do differently if you were to go through this process again?</p>	<p>There is little I would have done differently in progressing through this phase of the Doctorate programme which is certainly not to say that I managed to get everything right first time, probably the opposite, the key has been to remain to entirely open to the learning process and maintain curiosity at every stage, while maintaining consistent intent to achieve the best at every stage. This has served me, my learning and the research process well to date, trusting in the process but while always maintaining my commitment in the job at hand, sometimes far from easy but always worth the hard work. One of the key pieces of learning overall has been balancing the regular time commitment each week for study with key insights being regular and often, a journal of key learnings and frequent self-determined deadlines ensuring key pieces of study are delivered in good time.</p>
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<p>The systematic review: Developing a protocol and write up</p>	<p>What challenges did you face and how did you overcome them?</p>	<p>Construction of the protocol was most definitely a learning process of focus, clarity, brevity coupled with insight in writing style and originality and robustness in approach. The write up has definitely been a big learning process integrating extraction data, interventions, outcomes within a comprehensive but concise narrative backcloth that presents a concise story of why and how my SLR is relevant and of value.</p>
	<p>How did this process differ from your expectations/plan?</p>	<p>The process did not seem significantly to expectations although perhaps I underestimated the time required to write up certain sections and pull together into a 'meaningful' and intelligible whole.</p>
	<p>What were your key learnings from this stage?</p>	<p>Key learnings here were a focus on concise narrative balanced within an engaging, 'funnelled' clear overall research framework. Easy to understand and say but a real skill in</p>
		<p>execution and of course one of the big challenges is simply in 'getting your head down' to do the leg work so to speak. Also, although seemingly obvious, one useful technique is imagining one is another academic reading this for the first time with the big questions being: Does it tell a clear, understandable story of the research challenge at hand covering all aspects of a professional SLR? Does it add to the body of research? Is it of research quality? Would it pass muster in peer review? Does it offer originality, insight and learning to the field? etc. With this lens of questions in mind my hope is this will refine my SLR to sufficient quality to achieve these standards.</p>

	<p>What would you do differently if you were to go about developing a protocol again and write up?</p>	<p>Believe the main reflections on what I may do differently are indicated in learnings section above, although with the addition of reading as many other SLR's in other Occ Psych fields as possible to add insight to structure, content, narrative and overall presentation. It has been enormously helpful to regularly engage with the whole cohort of delegates and I have taken to scheduling regular 2 weekly Teams calls to share learnings, insights, updates and techniques and practice talking about our research professionally.</p>
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<p>Research Study: Practical application</p>	<p>Insights, challenges, solutions?</p>	<p>Having decided to focus on one organisation of my research namely the RCN, I am intentionally selecting a variety of staff from differing roles, functions, specialisms, directorates and functional areas to ensure as much diversity in all domains is sought in order to obtain rich data for the best possible study. Having run pilot interviews with 4 staff in differing sites and roles as above to test both the semi-structured interview questions and format which proved in fine tuning the question wording and adding an additional dimension in asking subjects about their leader's influence both pre and post COVID-19 environments. The thinking was that following some pilot interviews, where subjects provided more limited data in a post COVID-19 world, when the pre-covid option was introduced to reflect on their leader relationship at that time too, the data elicited was greatly enhanced as the contact was seen to be both more frequent and with greater opportunity to discuss a range of work issues such as environmental related elements rather than the purely the operational focus, coupled with psychological and physical health in the current work climate. In other words, both opportunity and frequency were seen to be greater at that time, with feedback that once the current working lifestyle (even if continuing to be predominantly or even entirely virtual for the foreseeable future), become more settled, so in turn leader/follower relationships would also settle too with greater opportunity for discussions/influence on other issues like environmental and related issues/concerns.</p>
	<p>What were your key learnings from this stage?</p>	<p>Key learnings were essentially as above with the addition that after just completing 2 full interviews as part of the study proper the interviews progressed well with the interview structure progressing well and appearing to elicit rich amounts of quality data. Microsoft Teams transcription service will be used to generate full narrative of each interview which affords high accuracy proven to be significantly more accurate than human transcription even when</p>
		<p>double checked. Coding etc. along with comprehensive thematic analysis protocol will then be conducted. Most interestingly it appears that subjects both in pilot and research interviews appear to be reflecting on both their personal and manager's PEB as a result of the interview process. It will be fascinating to see what data is elicited overall.</p>

<p>Ethical considerations and management of boundaries</p>	<p>What ethical considerations did you make and why? Has this impacted your practice outside the doctorate? Was there anything that you would do differently next time? Looking forward to conducting to your research, is there anything that you need to keep front of mind or need support on?</p>	<p>Having mentioned in previous reflections my acute awareness of the need for data protection management protocols and the need to communicate and demonstrate these early in the process to ensure confidentiality, safety, security, professionalism and ultimately research of quality and robustness, thorough planning here and related early ethics approval supporting this approach ensures high standards in this area. Other ethical considerations have been through checking in regularly with my supervisors on regular operational research questions such as conducting appropriately comprehensive pilot interviews to effectively inform the final process, maintaining the widest subject type selection as in criteria mentioned and following strict standardised pre-briefing and interview set up to maintain the highest ethical standards. All additional ethical considerations are as per my approved application alongside use of Teams software for both recording and transcribing interviews. Ethical considerations outside my Doctorate are always paramount in all work undertakings. Being a Registered General Nurse, Organisational Development Consultant, Chartered Psychologist and Associate Fellow BPS, as well as Registered Coach and Coach Supervisor NHS Leadership Academy, high standards of ethical delivery are imperative in all forms of delivery. My Non-Exec Director role with MIND the mental health charity continues too and if anything, having survived the rigorous University ethics approval process, I am reminded again of the essential need for confidentiality and ethics underpinning all we do at MIND. Looking forward these standards are clear to me in being front of mind in all parts of the research process as I progress through all stages of my doctorate.</p>
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Jerry Martin 16/8/20

Stage	Questions	Reflections
<p>Scoping out your research idea</p>	<p>What challenges did you face and how did you overcome them?</p>	<p>Challenges include comprehensively completing Extraction sheet for my ESLR as many papers highly varied in narrative, style and approach, however learnt much from synthesising findings which added to my research thinking about potential gaps, approach and focus.</p>
	<p>Did your initial idea</p>	<p>My ideas have definitely taken an iterative approach especially</p>

	<p>change during this stage? If so, how and why?</p>	<p>preparing for meeting with Dr. Lara Zibarras (co-author of one of my shortlisted papers) having prior thoughts about one or two PEB factors to focus on. The process led me to re-calibrate in the direction of transformative leadership and relationship with employee PEB using qualitative research which was affirmed by Dr. Zabarras as being an area of focus and approach both overlooked in the PEB research field to date. Subsequently in re-drafting my research proposal, conversations and feedback with my supervisors culminated in clearer thinking in the area leading to a refreshed interest in developing a new understanding of the process, dynamics and potentially theoretical construct of leadership PEB and concomitant subordinate impacts using grounded theory from dyad and 360 data.</p>
	<p>How did this process differ from your expectations?</p>	<p>As much as the research process has taken considerable time, work and reflection which is indeed challenging working full time in Organisational Development, volunteering as Non-Exec Director at MIND and caring responsibilities, all these activities have enabled continual renewal and refresh in developmental thinking. My expectations were essentially that the process would be relatively straight-forward and linear, however I have grown to realise both the value and contribution of suspending judgement in approach, being open to and personally challenging my thinking and endeavouring to trust the process evolved thinking.</p>

	<p>What were your key learnings from this stage?</p>	<p>Key learnings have included trusting the process of research and deeply reflecting on supervisor feedback. My day-to-day organisational development applied consulting work requires development and delivery of highly practical solutions to real-world organisational challenges often to tight deadlines. This work, while requiring detailed research and diagnostics to inform design and delivery, develops thinking and a specific mindset arguably in a more rational/outputs/behavioural change focus. While this work has been a pre-requisite for this Doctoral programme and most definitely helps in considering real world application, the research methodology is highly challenging in parallel too demanding time and focus to think and work through the stages of progress. An additional key learning has been the importance of regular study, reading and reflection despite the continual challenges of all the afore mentioned life and work challenges. I have found to my frustration that if I leave my research work any longer than a two week period between sessions of focus the 'freshness' and ability to manipulate current research, theory and methodology is significantly challenging. I have since vowed to regularly commit to periods of research work focus, committing and keeping to regular milestone commitments with my supervisors to ensure I maintain on track. In addition to this as a Professional Doctorate cohort we have two-weekly scheduled Zoom calls with the group where we individually update on progress, support each other through difficulties and generally provide support and continued morale boosting through the process. This has proved to have been invaluable in guiding each other through the journey and sharing approaches proving to be an additional boost to completion.</p>
	<p>What would you do differently if you were to go through this</p>	<p>As discussed, the importance of frequent research work episodes as opposed to sporadic/less frequent but more intense periods of work and learning has been a difficult but salient learning experience.</p>
	<p>process again?</p>	<p>With that in mind, in retrospect I would both recommend and would have personally benefitted to committing to uninterrupted, scheduled and frequent episodes of study. Having said this, my potential for achieving this was far easier and greater prior to commencing my full-time role as OD Consultant at the Royal College of Nursing where I could both manage and control my time better. It is often incredible challenging to juggle a portfolio career with research and significant learning in diary management, focus and priorities. Ironically the current and continued pandemic situation has enabled more time for my external work focus as I am carrying out far less family and social activities given personal challenges.</p>

<p>The systematic review: Developing a protocol</p>	<p>What challenges did you face and how did you overcome them?</p>	<p>Challenges as above were essentially time, focus, attention and regular progress. However, I feel and see significant progress through my tenacity, energy and focus. Simple but powerful techniques that work for me are in emailing my supervisors in advance to commit to regular deadlines thereby putting myself under pressure to complete and deliver on time and in-line with course milestones. In addition, I ensure regular contact with my supervisors constantly sharing my thinking, progress and work to date while rapidly taking on their feedback to deliver ongoing results.</p>
	<p>How did this process differ from your expectations/plan?</p>	<p>My plan was always to be proactive, responsive and ensure as far as possible I would stay on track. My approach is always to stay in regular and good communication with my supervisors, carefully synthesising their commentary, feedback and learning advice to edit, refresh and deliver accordingly. This has served me well to date and so my intention is to continue with this approach to ensure the next milestones of Research Proposal and ESLR write up are both complete by early Sept.</p>
	<p>What were your key learnings from this stage?</p>	<p>As mentioned, key learnings have been personal focus, sustaining energy and interest, regular reading even if just one paper or this reflection journal for example late Sunday afternoon. The importance, value and appreciation of my peer group have also been invaluable in co-motivation, mutual morale boosting and challenging and supporting others' thinking and Doctoral journeys. Finally, the importance of personal health and well-being in sustaining the research journey amongst multiple life challenges, encompassing everything from healthy food, good sleep (where possible), fitness and psychological well-being. Life can be acutely challenging at present and I am most fortunate in working for an organisation that takes the above need seriously and also appreciate the personal role I need to play in staying well physically and mentally.</p>
	<p>What would you do differently if you were to go about developing a protocol again?</p>	<p>If I were to do this again, I would continue and maintain all my endeavour and approach above as well as potentially reach out earlier to academic(s) in the field as well as share/talk through my suggested approach with representatives from the organisations I am considering carrying out the research with. This may help yield and shape differing thinking and perhaps an earlier more practical approach to the research in question in addition to guiding the practicality of the research framework.</p>

		<p>Having said that these are extraordinary times both working and researching throughout a pandemic and wonder whether there would be sufficient space or access to said individuals prior to the development of some framework protocol to discuss. In other words, we are all acutely time challenged indicating clarity and focus may be essential before decision makers afford to access for discussion whether they be academics or organisational management for research access.</p>
<p>Research Study: Design and Proposal</p>	<p>How did you come to a decision on the study/studies you were going to undertake?</p>	<p>The decision and thinking on study I am proposing to undertake essentially stemmed from emerging gaps in the literature as per my SLR extraction sheet, namely that research to date has been almost entirely cross-sectional survey data analysis in largely private sector service industry environments, with a corresponding clear gap in the exploration and understanding of the leadership/subordinate relationship form a qualitative point of view using 360 data. My natural professional links in the 3rd sector as potential research organisations were always a possibility and given the absence of PEB research and understanding here this seems like a clear opportunity to add value, learning and contribution to the body of literature, similarly utilising a qualitative approach to enable deeper and richer understanding of how leaders' PEB behavioural factors may affect employees.</p>
	<p>Why did you decide to use the particular methodology/analytical process?</p>	<p>As mentioned, qualitative research lends itself especially well to a more comprehensive understanding of the leader/subordinate dyadic relationship and is almost entirely form research to date, 360 data are intended to add corresponding similar richness and deeper understanding to process and mechanisms at play. Grounded theory seems lime a natural choice in simply put gleaning this understanding from elicited data from the ground up. Where feasible leader/subordinate dyads additionally appear to be a natural choice for focus as although extensive literature points to the leader being key influence on PEB employee behaviour, relatively little is known about the mechanisms, dynamics and factors at play. There may even be an opportunity to develop novel theoretical thinking and corresponding process modelling on these interactive dynamics.</p>

	<p>What challenges did you face in the design process and how did you overcome them?</p>	<p>Challenges in the design process have been largely in making appropriately indicative conclusions from the body of research to date in terms of subject focus, process to be used, organisational access and application. Additionally, my conclusion that 'listening and paying attention to data sources' here in generating understanding would be an immensely more fruitful approach given the research focus, as well as far more relevant to generating the required richness of leader/subordinate dynamics. I overcame the challenges by continuing to be open to and challenging my own thinking, deeply reflecting on supervisor feedback and comment, in addition to ensuring my conclusions on the literature finding were appropriately synthesised.</p>
	<p>How did this process differ</p>	<p>The process differed from my expectations in that I expected it</p>
	<p>from your expectations/plan?</p>	<p>to far more linear, logical and pragmatic in approach overall, which while all still remain laudable qualities of effective research, also require the addition of personal challenge, suspension of judgement and deep reflection, genuine openness to feedback and learning and as well as the continual pursuit and tenacity to add significant to subject matter knowledge.</p>
	<p>What were your key learnings from this stage?</p>	<p>For fear of repetition my key learnings were continually appreciating the value of our peer group in sharing ideas, mutual support and challenge/debate of research areas which has further refined the process. Supervisor feedback on frequent drafts of submitted work while has been naturally sometimes challenging, I have come to realise the importance attending to a reflective response and ensuring deep listening and reflection on the processes. Finally, study, research and learning are always immensely challenging when working full time and while also have Executive Charity work, I also deliver against, I am also appreciative of the many benefits of my intended portfolio career approach as well as the complimentary effects of these collective endeavours on the process of research.</p>

<p>Ethical considerations and management of boundaries</p>	<p>What ethical considerations did you make and why? Has this impacted your practice outside the doctorate? Was there anything that you would do differently next time? Looking forward to conducting to your research, is there anything that you need to keep front of mind or need support on?</p>	<p>The obvious ethical considerations I have already considered in my research proposal include access to two organisations I have existing relationships with, thereby the need to demonstrate appropriate steps for sufficient 'separation' between roles of employee (RCN) and Non-Executive Director (MIND). Similarly, the need to plan in the process the nature of any reports or presentations required by the organisation(s), as well as the management of expectations early in the process. Additionally, I am also acutely aware of the need for data protection management protocols and the need to communicate and demonstrate these early in the process to ensure confidentiality, safety, security, professionalism and ultimately research of quality and robustness. Personal values within my consultancy and charity work have always had ethical approach issues as listed above high on priority and delivery, however this study has only sought to underline the importance and early planning of this approach.</p> <p>In terms of what I would differently next time, as mentioned the frequency and regularity of study to retain conceptual and knowledge 'freshness' has been a key learning tenet and enables a sustained energy and focus to work. This was significantly easier for me having much more time prior to pandemic 'lockdown' for study and starting work in this extraordinary time was never going to be easy. Fortunately, the work has immensely complimentary and while I have less overall time to apply, my focus and energy is sustained through the exciting opportunity of applied access and understanding.</p> <p>Looking forward to my research, the benefit of a third supervisor (Dr Lara Zibarras, City University) with specialist knowledge in the field as well as provision of research oversight will be</p>
		<p>especially helpful. As a team we have already discussed how we may work together for best effect, the natural conclusions drawn, at least initially and the promise that this research has to offer the field. It will be especially helpful to assimilate this good guidance and refining and improving the research process. Finally, in terms of support, the continued professional and academic support, feedback and challenge will continue to be significantly helpful in maintaining focus, timely delivery and quality work.</p>

Jerry Martin 3/5/20

Stage	Questions	Reflections
Scoping out your research idea	What challenges did you face and how did you overcome them?	Much has clearly changed since my last reflective assessment and this summary will reflect the changing world environment since pandemic outbreak, my research thinking as well as personal reflections in this unprecedented on the journey to my professional Doctorate. Much harder to engage fully with fellow students and supervisors personally as we and the world adjust to communicating and working online.
	Did your initial idea change during this stage? If so, how and why?	Having progressed through an evolutionary process and thinking in my Doctoral research during this period, as outlined in 10 versions of my ESLR and working closely with my supervisors, I was able to refine and develop my thinking in research area of focus, leading to both a clearer focus and more evidenced based endeavour of study. It became clear in progressing through key existing SLR's in the field and reviewing exhaustive related literature, that both organisational mechanisms 'at play' in the area of PEB and summative barriers and facilitators had yet to be explored and defined with the potential to be of significant value in turn to organisational application for positive change. An additional personal endeavour in my research was enabling 'real world' application and potentially making a real difference to employers, employees as well as environmental outcomes, all concomitant with my personal value set and thereby further facilitating greater motivation to my research endeavour. This research work now shows real promise in both adding value to the Occupational Psychology research field as well as addressing the practical challenge of human generated climate change.
	How did this process differ from your expectations?	This phase of the Doctorate programme I felt was always going to be challenging, specifically in progressing from the stage of identifying a renewed research area of real promise in both study interest and practical outcome, to robust development of academic ESLR protocol sufficient to pass academic rigour. However challenging this process was, the learning and iterative process throughout further informed my understanding, research focus and clarity of fit to next steps.
	What were your key	Key learnings covered a number of areas in successfully achieving
	learnings from this stage?	supervisor 'sign-off' of my ESLR ranging from greater confidence in analysis, interpretation and communication of the academic body of work identified to delivering a finally accepted ESLR proposal of brevity, focus, unique value and academic rigour.

	<p>What would you do differently if you were to go through this process again?</p>	<p>In my most recent reflection summary, a key point of learning was to trust the process in working closely and diligently with my supervisors to reach a successful outcome. I was acutely aware and informed my supervisors as such, that I had 'a window' of valuable time before starting my new full-time position with the Royal College of Nursing (RCN) as Organisational Development (OD) Consultant, which I also knew would be, initially allconsuming. My complimentary roles of Non-Exec Director of MIND (the mental health charity) and General Nurse would continue but also be acutely challenging given the pandemic environment and impacting factors affecting both areas of work endeavour. Fortunately, my timing was fortuitous in completing sign-off of my ESLR shortly before 'lock-down' and the imminent start of my new position. Having successfully immersed myself in my new job role for nearly a month now, I am delivering across a range of OD project work streams including coaching, psychological well-being and Board development which is proving highly interesting and challenging exploiting my complete skills and experience set. I now find myself re-invigorated and energised to push on with my doctorate research and see this new role as entirely complimentary to my research endeavour. Fortunately, the RCN as an organisation is also of course experiencing the highest profile in its long and distinguished history, being both front and centre of supporting clinicians battling to resolve this pandemic on all fronts. As a result, I feel privileged to be in turn playing a pivotal role in serving the organisation on both staff development and organisational transformation fronts in my role, while continuing to pursue my important research endeavour in PEB. Having said all that, the current journey is somewhat of a life and emotional 'roller coaster' as we all do our best to continue our essential activities, including work and study, in the most challenging and unique circumstances. Nonetheless I remain grateful for stimulating, challenging and meaningful research and work endeavours coupled with good health and well-being to make a significant difference and contribution in both areas of spirited endeavour.</p>
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Reflection Assessment 2 - 9th Feb 2020

Stage	Questions	Reflections
<p>Scoping out your research idea</p>	<p>What challenges did you face and how did you overcome them?</p>	<p>Challenges were focus and concentration while juggling professional and charitable positions, as well as allocating to dedicated reading. Coming back to study after decades of professional life which although highly technical and intellectually demanding, now required a renewed set of skills in studying academic material at pace.</p>

	<p>Did your initial idea change during this stage? If so, how and why?</p>	<p>Original research thinking and proposal in phase 1 and on entry to the Doctorate programme was exploring coaching process model research and establishing new thinking on a process model for transformational coaching eventually focussing on the emerging use of Embodied Conversational Agents (ECA's) and their unique contribution to coaching interventions. After deep reflection and extensive reading, additionally reflecting on significant personal values and interest, my focus shifted to organisational climate change strategy evaluation and more specifically the connecting effect of employee behaviours (commonly now known in the literature as PEB – pro-environmental behaviour). Research here is at early stages with one significant SLR in place (Staddon et. al. 2016) with a narrow focus on saving energy, although with useful suggestions on gaps and further research indications in the literature.</p>
	<p>How did this process differ from your expectations?</p>	<p>Although unexpected, this new topic resonates far more deeply with personal interest and values, coupled with extensive academic and grey literature reading this represents a unique and important area for further research.</p>
	<p>What were your key learnings from this stage?</p>	<p>Having missed session 2 workshop due to illness and keen to catch up on content, my key learnings have been the importance of reading widely to gain clarity in the subject area of interest. My passion, interest and motivation to pursue the Doctorate has been renewed through selecting a research area of focus that has limited research content to date and will be of significant value to both organisational literature and organisational learning.</p>
	<p>What would you do differently if you were to go through this process again?</p>	<p>Trust the process. Emotionally the journey on searching for, identifying and researching an area of real interest is an undulating one with corresponding feelings of uncertainty, lack of clarity, frustration and the balance between a sense of urgency to progress at pace and a thorough, considered literature review to establish my chosen topic. Having experienced a 'force measure' of time out through temporary illness to slow the reflection process, this enabled a deep review of personal passion, interest and curiosity which would be vital to sustain an extensive research endeavour in this important area.</p>

Jerry Martin 30/11/19

Stage	Questions	Reflections
Scoping out your research idea	What challenges did you face and how did you overcome them?	Challenges were focus and concentration while juggling professional and charitable positions, as well as allocating to dedicated reading. Coming back to study after decades of professional life which although highly technical and intellectually demanding, now required a renewed set of skills in studying academic material at pace.
	Did your initial idea change during this stage? If so, how and why?	Initial research terms: Coaching model, framework, transformation, measure, systematic review, coaching and meditation. Still reading extensively/expansively as per initial brief to stimulate thinking, focus, interest and further identify unique area.
	How did this process differ from your expectations?	Frustrating and empowering at the same time in that research possibilities seem 'cavernous' and therefore anxiety inducing in view of need to focus on one specific field of endeavour. Continuing to read broadly, suspend judgement and urge to 'jump' to early topic without sufficient broad reading and understanding of the initial research topic and related areas of concern.
	What were your key learnings from this stage?	Reflection on urge/need to focus and the importance of recognising and manage associated feelings of concern/anxiety to make progress while progressing through a comprehensive research endeavour of quality and uniqueness. Being employed as Tutor in the School of Organisational Psychology afforded opportunities to immerse in learning/reflection with Masters students in related areas, conversing/facilitating in depth on broader topic fields such as Professional Development and Learning ranging from Learning Styles and Self Awareness to Teams and Change hence further informing my lines of thinking, reflection and learning.

	<p>What would you do differently if you were to go through this process again?</p>	<p>Launching into the Tutor role at Birkbeck while challenging time and energy wise has been invaluable into re-assimilating early into academic endeavour, enhancing discipline in reading extensively and preparing course materials thereby providing familiarity with academic facilities and research sources/materials. Having attended several workshops at Birkbeck in potential support of my learning e.g. How to Manage your Doctorate, Introduction to Lecturing, Project Manage Your Doctorate amongst others; it seems several were clearly unproductive and my immediate awareness was of current implicit learning and skills which I will speedily put to effective use in my doctorate launch phase.</p> <p>In short, while helpful for departmental/academic familiarisation, this time would have been better used in reading more extensively which now progressing. Finally becoming more familiar with search portal/sites early in the process affords real confidence in seeking out material from multiple related topic areas, having said that this reflection process in itself, especially at this early stage elicits, for me at least multiple emotions ranging from excitement, privilege (to be learning/contributing to an esteemed academic Institution), frustration, futility, uncertainty, confidence variation and more. What gives me considerable reassurance, clarity and hope is the most helpful structure in segmentation/phasing of the overall doctorate process by supervisors, providing a clear sense of 'bite sized chunks' of project planning, cohort progress thereby gaining peer support and clear goals to aim for. My extensive reading continues, although challenging but stimulating journey back to academic endeavour.</p>
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Appendix 2: Quality Assurance

METHOD QUALITY	CONCEPTUAL QUALITY <i>(Extent to</i>		REPORTING QUALITY		TOTAL QUALITY SCORE		
					Red = 0 - 3.5 (low quality) Amber = 3.6 - 6.9 (sufficient quality) Green = 7 - 9 (high quality)		
Author(s)	Trustworthy (0 = Not trustworthy 1 = Low level 2 = Fairly good level 3 = High level	Insightful (0 = No insight at all 1 = Fairly low level of insight 2 = Good level of insight 3 = Excellent level of insight)	Transparency (0 = Not transparent at all 1 = Low level of transparency 2 = Fairly transparent 3 = High level of transparency)	Accuracy - (0 = Incomplete and/inaccurate 1 = Some inaccuracies 2 = Most info included/accurate 3 = Fully complete and accurate)	Completeness - (0 = Insufficient information meaning can't un 1 = Information provided enables some understanding 2 = good level of understanding 3 = excellent understanding and replication of study)	Overall Reporting Quality (max = 3)	Total



<p>Börner, D., Kalz, M. & Specht M (2015)</p>	<p>Score 2 - Robust design, questionnaire structure stats analysis, enhanced through wider samples in differing industry sectors while further limitations in cross-sectional approach.</p>	<p>Score 2 - Clear simple design illustrated with clarity for ease of replication. Underlying concepts environmental learning and proenvironmental behaviour elaborated on existing models e.g. PEB presented by Kollmuss and Agyeman (2002).</p>	<p>Score 2 - Although succinct structure, reasonable level of detail, esp. survey construction. Expanding limitations reasoning, adding profession/function to improve transparency.</p>	<p>Score 2 - Clearly structure/hypotheses, method results and analysis, especially comprehensive methodology and results sections.</p>	<p>Score 2 - Sufficient information for understanding/replication, good discussion on implications for research and practical application, absence crosssector, profession, department, function consideration.</p>	<p>Score 2</p>	<p>Score 6</p>
<p>Fatoki, O. (2019).</p>	<p>Score 2 - Pretested pilot study (partial least squares - PLS - path modelling). Convenience sampling method, limited sample and employee focus only all limit wider population.</p>	<p>Score 3 - Clear conceptual illustration: leadership, institutional support and workplace spirituality on employee PEB in SA hotels, showing significant positive relationships. Theoretical implications show linkage of spirituality to employees' PEB.</p>	<p>Score 2 - Good level of transparency especially methodology, limited discussion on shortcomings sampling and opportunity for method to enhance granular understanding given nuanced concepts.</p>	<p>Score 2 - All sections covered- accuracy/ clear illustration and implications for greater discussion on alternate method for greater insight.</p>	<p>Score 2 - Comprehensive completeness/full presentation of survey structure/robustness, study details and outcomes. Some implications for education, training, comms., no specific recommendations given the nuanced concepts.</p>	<p>Score 2</p>	<p>Score 7</p>



Foster, D., Linehan, C., & Lawson, S. (2014).	Score 1 -2 interventions 4 stages, low sample (n=16) findings contrary to	Score 1 - Clear conceptual background on energy interventions, group feedback and motivating behaviour	Score 1 - Experimental structure, method is clear, survey content/ questions	Score 1 -All sections present, detail and content discussion on	Score 1 - Good level of understanding and opportunity for replication, limited	Score 1	Score 3
	hypotheses, interventions confound findings, sample limits outcomes restriction to one department/one industry.	change and transferrable, although limited sample in both survey and interviews.	absent & post intervention interview structure and detail inhibiting robustness and credibility.	design challenges, practical implications - all highly limited	samples, detail in several sections (method/appendix) & discussions limits robustness.		
Gkorezis, P., & Petridou, E. (2017).	Score 2 - Method limited by snowballing distortion and non-identification of organisation or industry sector. Questionnaire absent and one-time cross-sectional survey small sample.	Score 3 - Comprehensive conceptual background (linkage of CSR and environmental sustainability) leading to clear hypotheses testing against conceptual model (CSR - OI - PEB).	Score 2 - Analysis and statistical presentation against hypotheses clear, well-structured with logical flow and inductive reasoning, small sample and absent questionnaire inhibit overall transparency.	Score 2 - Good completion in all sections and clear illustration of limitations/practical org. implications. Questionnaire omission - accuracy.	Score 2 - While all sections complete, omission of survey prevents replicability. As mentioned overall accuracy and completeness well presented.	Score 2	Score 7



Graves, L. M., Sarkis, J., & Gold, N. (2019).	Score 1 - Single source, cross-sectional survey, 'self-selected' small sample Managerial focus limiting understanding	Score 2 - Conceptual model and corresponding hypotheses testing/questionnaire construction clearly illustrated, although leading to limited sample and managerial specific	Score 2 - Clear structure and presentation of all sections - it would be valuable to study lowerlevel employees, co-	Score 2 - Survey construction, appendix, hypotheses against conceptual model all clearly illustrated for	Score 2 - Clearly presented - more data on managers/coworkers PEBs. Good practical and research implications e.g. understanding employee	Score 2	Score 6
	coupled with nonidentification of industry background.	research focus restricting generalisation.	workers and corresponding relationships.	potential replicability. Professional/managers, limits generalisation.	motivation in facilitating PEBs and leaders encouraging PEBs appealing to values and goals.		



<p>Gregory-Smith, D., Manika, D., Wells, V. K., & Veitch, T. (2017).</p>	<p>Score 2 - Questionnaire not designed for purpose: validated scales not used in constructs - study treated as exploratory.</p> <p>Small sample one place. Clear results and analysis sections with supporting questionnaire.</p>	<p>Score 2 - Insightful as part of Global Action Plan energy saving intervention with standard survey measures embellished with proven additional constructs and open-ended questions with consideration of varying job roles in one University. Hypotheses tested against clear theoretical model - standard existing questionnaire base.</p>	<p>Score 3 - Lots of detail in all sections especially method and results with full survey construction breakdown and corresponding appendices. Clear combination of tables and narrative.</p>	<p>Score 2 - Clear in all sections. 2 separate SEM run for each dataset (pre- & post) good model fit for pre- and acceptable model fit for the post- with clear illustration.</p>	<p>Score 3- All sections - high standard, good presentation of method, analysis and results full discussion on practical implications (policy & barrier reduction strategies) limits - (observational study indicated) with full survey appendices for potential replication.</p>	<p>Score 2.6</p>	<p>Score 6.6</p>
<p>Islam, T., Ali, G., & Asad, H. (2019)</p>	<p>Score 3 - Good sample supervisor/ subordinate dyads (201) although cross sectional at one point in time.</p> <p>Preponderance of male supervisors (180) limiting</p>	<p>Score 2- Shows good levels of insight and originality in dyad structure of research approaching a range exploring the moderating role of empathy in CSR and PEB outcomes using established survey scale construction. Limited to hospitality</p>	<p>Score 3 - Comprehensive detail provided to get a good sense of the study including full questionnaire construction, appendices, results, openness in limitations and practical</p>	<p>Score 2 - Most information expected throughout paper included, with sufficient detail provided in method and results sections.</p>	<p>Score 3 - Paper sections all comprehensively completed with good detail including questionnaire structure and detailed method for replicability.</p>	<p>Score 2.6</p>	<p>Score 7.6</p>



	generalisation and researchers instructing survey directly, potential influence bias.	sector.	implications.				
Luu, T. T. (2018).	Score 2 - Combined new, adapted and existing scales in survey construction, although no validity and reliability data and absence of questionnaire despite good samples. Data analysis conducted through SEM and bootstrapping with good evidence for outcomes.	Score 3 - Concept clearly articulated with novel take on existing research namely - Environmentally specific servant leadership association with employee OCBE through employee env. engagement as mediator. Two moderation mechanisms org. support for green behaviours and person-group fit with good sample sizes - over 1350 in pre and post- test.	Score 2 - As no validity and reliability data and absence of questionnaire as appendix to attempt to replicate study, opaque methodology structure despite thorough results, tables and supporting narrative throughout paper against hypotheses.	Score 2 - All paper sections comprehensive with full discussion of practical implications, although absence of openness to scale generation, would expect to see survey, paper let down by opaque methodology.	Score 2 - Although paper well laid out, difficult to replicate without questionnaire and absence of survey structure/evidence of reliability and validity.	Score 2	Score 7



<p>Luu, T. T. (2019).</p>	<p>Score 3 - Two-wave data collection process was implemented. Good final sample (974 employee–direct manager dyads) formed after leaving out nonresponse from managers and departments with less than five employees.</p>	<p>Score 3 - Clear conceptual construction and interesting take on assessing the role of environmentally specific charismatic leadership in fostering employees’ organizational citizenship behaviour for the environment (employee OCBE) using good final sample of 974 employee–direct manager dyads with control variables and existing scales in new questionnaire in two time periods.</p>	<p>Score 2 - Reasonably transparent although helpful to view the survey designed and final items used included in an appendix. Survey apart, very detailed paper with clear narrative/structure.</p>	<p>Score 2 - Information presented particularly in results section enables easy viewing on significance which appear true and reliable.</p>	<p>Score 2 - Clearly well laid out paper with full narrative in all parts, even though questionnaire missing as appendix research replicable as existing measures fully referenced.</p>	<p>Score 2</p>	<p>Score 8</p>
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<p>Pinzone, M., Guerci, M., Lettieri, E., & Huisingh, D. (2019).</p>	<p>Score 2- 260sample one time cross- sectional survey by 4 different groups at 4 different times periods in 4 different hospital departments (one hospital site) 81% female</p>	<p>Score 3 - Conceptual enrichment to fast growing literature on 'green training' influence PEB showing relationship mediated through sense of 'employee challenge' which motivates engagement in green-oriented discretionary effort, while employees</p>	<p>Score 3 - Clear and full detail in introduction and background carefully building conceptual model of PEB mediators - OCBE, job satisfaction and organisational support with full survey construction</p>	<p>Score 3 - Equally comprehensive results section, clearly illustrated including principal component analysis, Cronbach's alpha to confirm good internal correlation</p>	<p>Score 3 - All paper sections fully complete with broad referencing throughout, extensive discussion on limitations, research and organisational implications with ease of replication as full appendices despite brevity of</p>	<p>Score 3</p>	<p>Score 8</p>
	<p>sample both limiting generalised findings.</p>	<p>more satisfied with their jobs; this relationship and perception that green training as a form of perceived employer support.</p>	<p>transparency and corresponding tables.</p>	<p>and finally linear regression analyses to test hypotheses which all appear satisfactory.</p>	<p>paper.</p>		



Raineri, N., & Paillé, P. (2016).	Score 2 – Existing/new survey scale elements to test multiple concepts however sample distortion through female, educational, managerial, age, organisation size.	Score 2 - Small sample (531) of degree/masters' students and French business school thereby potential demographic bias of specific professional group, novel conceptual construction testing interplay between policy, belief, personal behaviours and environmental citizenship behaviours limited by one-time cross-sectional survey sample.	Score 3 - High level of transparency fulfilled by full of detail in all sections with clear tables and appendices.	Score 2 - High level of accuracy afforded systematic and full conceptual construction, survey build, stats lay out and robustness and limitations. Let down by poor discussion on organisational implications.	Score 3 - Comprehensive paper with especially full introduction, background, and concept construction with stats clearly illustrated and questionnaire details for ease of replication.	Score 2.6	Score 6.6
Temminck, E., Mearns, K., & Fruhen, L. (2015).	Score 2 - Reasonable methodology robustness - small sample, female dominance (318/229) and	Score 2 - Concern/effort/commitment against OCBE with small sample, existing proven survey sub-scale survey measures	Score 2 - Good level of transparency through clear method, model, stats layout and survey	Score 2 - All sections, info. and materials, structure complete with apparent	Score 3 - Full paper sections intro, conceptual build, method, model and stats layout with survey appendices	Score 2.6	Score 6.6



	cross-sectional survey limiting generalisation (CMB). Only 2 public sector organisations.		appendices.	clear/accurate stats. Presentation.	and construction transparency enabling ease of replication. Comprehensive practical and research implications.		
Tezel, E., & Giritli, H. (2019).	Score 1 - Higher Education -University limitation, very small sample (95 respondents, 49 female and 44 male participants) although balanced, cross-sectional self report (CMB) and one country/2 organisations.	Score 2 - VBN used as guiding framework to understand antecedents of PEBs in workplace with factors: environmental values, beliefs and awareness. Also endeavours to determine predictors of PEBs and interaction between building's sustainability aspects and PEBs - two groups of occupants from both noncertified and sustainable offices.	Score 1 - Reasonable - given survey detail, implications, application, methodology and sampling.	Score 2 - Reasonable - although in absence of survey scales (although referenced with good apparent clear stats layout) and limitations outlined, overall accuracy wanting.	Score 1 - Reasonable completion and although used existing sub-scales, no survey appendices and very limited implications for further research or organisational implications, disappointing given methodological limitations outlined.	Score 1.3	Score 2.8



<p>Tian, Q., & Robertson, J. L. (2019).</p>	<p>Score 2 - Reasonable for sample in dyadic research although cross-sectional self report (Common Method Bias - CMB) and</p>	<p>Score 2 - Reasonably novel - approach - Dyads measure CSR & antecedents: 600 administered questionnaires (300 supervisors, 300 subordinates) - 366 usable Q's returned, yielding response</p>	<p>Score 2 - Comprehensive completion and transparency, although referenced sub-scales - absence of survey</p>	<p>Score 2 - Full account of research approach in all sections suggesting good transparency although</p>	<p>Score 2 - All sections completed to good standard with comprehensive presentation of method, analysis and results and full</p>	<p>Score 2</p>	<p>Score 6</p>
	<p>one country/2 organisations. Clear stats layout although survey appendices absent.</p>	<p>rate of 61% - assessing empathy, identity, responsibility on PEB.</p>	<p>appendices for potential replication.</p>	<p>no survey materials.</p>	<p>discussion on both practical implications limitations but absent survey appendices for potential replication.</p>		



<p>Wesselink, R., Blok, V., & Ringersma, J. (2017).</p>	<p>Score 2 - Cross sectional survey (CMB), 4 housing associations, Netherlands - limitations by country, sample (540 started - 479 responded) and industry.</p>	<p>Score 2 – Novel: leadership behaviour is studied in conjunction with POS-E (Perceived organisational support e environment) and leadership support. POS-E and leadership support studied both in an integrated (combined labelled as institutional support) and separate fashion in relation to PEB to unravel the relationship between both concepts. Also exploring TPB in private setting to explain PEB.</p>	<p>Score 3 - Fully transparent background, conceptual build, methodology, analysis, results and full discussion of outcomes given concise nature of paper. Limitations are openly discussed especially opportunity to broaden by level (managers), sector and sample.</p>	<p>Score 2 - Good level of accuracy, full conceptual construction, survey build, stats lay out and limitations. Good discussion on organisational implications, shortcomings and conclusions.</p>	<p>Score 3 - Concise but comprehensive paper with all sections complete with appendices for replication and transparent survey construction and analysis. Good discussion of application, limitations and implications.</p>	<p>Score 2.6</p>	<p>Score 6.6</p>
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<p>Yang, L., Manika, D., & Athanasopoulou, A. (2019).</p>	<p>Score 1 -Academic and administrative staff in education sector - limited applicability beyond, midsenior level focus with employee focus only in one University institution. Questionable sample mix - 14 sustainability managers (role bias) and 19 f/t - apparent thorough structured interviews.</p>	<p>Score 3 - Highly novel at time of research - multi-level investigation of hypocritical PEB at both organisational and individual (workplace context only) levels, based on grounded theory approach (33 interviews) contribute to hypocrisy, corporate social responsibility, and PEB literature streams by presenting model of hypocritical PEB across levels.</p>	<p>Score 2 - Fully transparent throughout with clear structure and detail in all areas especially in methodology and applications/implications, would expect to see full interview structure given significance of format driving outcomes.</p>	<p>Score 2 - Glaser and Strauss's (1967) grounded theory method for data analysis. New constructs helped explain how employees and organisational levels are interconnected with PEB.</p>	<p>Score 1 - While Sustainability Managers and f/t employee rich semi-structured interview data analysed through the grounded theory elicits new and insightful understanding to research, transferability is limited, as per primary findings and moderators and mediators, significant data relevance is indicated. Absent interview structure impeding ease of replication.</p>	<p>Score 1 .6</p>	<p>Score 3.6</p>
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Zibarras, L. D., & Coan, P. (2015).	Score 3 - One time, crosssectional (CMB) limited to one country (UK), nonmanagerial staff not researched nor likelihood to engage in PEB - overall	Score 3 - Highly novel - expansive and unresearched at time - survey investigating current HRM practices used to promote pro-environmental behaviour in a sample of 214 UK organizations representing different	Score 2 - Entirely transparent and easy to understand with clear layout throughout, especially method and stats analysis - as mentioned	Score 3 - As per other QA narrative, thorough, clear, relevant detailed stats analysis well laid out with clear implications	Score 2 - Although all paper sections thoroughly completed with high level of detail especially in introduction and existing survey subscales referenced, expected to see	Score 2.3	Score 8.3
	nuaance of criteria aspects researched and interrelationship complexity remains opaque, however well - structured .	sizes and industry sectors, random selection - Chamber of Commerce - 5000 members.	actual survey detail absent - would like to see appendix.	for further research, practical application and limitations as in trustworthiness.	full scale as appendix and while summarised in illustrative tables - difficult to replicate.		

Appendix 3: Participant information sheet for study 2

INFORMATION SHEET FOR PARTICIPANTS

The the role of leadership behaviour on employee pro-environmental behaviour (PEB).

I would like to invite you to participate in this research project, which is part of my Professional Doctorate in Organisational Psychology at Birkbeck, University of London. This project has received ethical approval. To make an informed decision on whether you want to take part in this study, please take a few minutes to read this information sheet.

Who is conducting this research?

The research is conducted by Jerry Martin under the guidance of supervisors Rachel Lewis and Jo Yarker, both from Birkbeck, University of London.

What is the purpose of the study?

The aim of the study is to fully understand the role of leadership behaviour on employee's proenvironmental behaviour PEB. This will help deepen our understanding of what factors enable and impede behavioural change in the workplace and therefore how organisations can support employees in this endeavour.

Why have I been invited to take part?

You have been invited to take part in this study as you either work in the Charity or 3rd Sector and have a close day-to-day working relationship with your manager.

What are the procedures of taking part?

If you decide to participate in this study, you will be asked to participate in a one-to-one interview. Due to Covid19 restrictions, interviews will take place via Microsoft Teams and will take 60 minutes and the interview has two parts. The following link explains how Microsoft protect your privacy: [Microsoft Privacy Statement – Microsoft privacy](#) The first part will cover your personal views and behaviours in engaging in pro-environmental behaviour in the workplace while the second part will explore how/if your manager influences this and how they may do so. At interview completion I will summarise next steps and you will be offered access to a summary of the findings, once analysed, by contacting the research team (details below).

What are my participation rights?

Participation in this research guarantees the right to withdraw, to ask questions about how your data will be handled and about the study itself, the right to confidentiality and anonymity (unless otherwise agreed), the right to refuse to answer questions, to have recording turned-off (in the case of recorded interviews) and to be given access to a summary of the findings.

What if I want to withdraw my information?

If you wish to withdraw responses or any personal data gathered during the study you may do so this without any consequences and you may also request that your data be removed up to the point of analysis (approximately 1st March 2021). If you would like to withdraw your data please contact Jerry Martin (details below).

What will happen to my responses to the study?

Data collected in this study will be analysed and used for research student Doctorate thesis and may also be used for academic publications, books, trade press and professional corporate summary documentation, while no identifying information would be released.

Will my responses and information be kept confidential?

All information will be treated with the strictest confidence throughout the study and stored for 3 years as per best practice guidelines. All information will also be stored in password protected secure folders on a computer, or if hard copy in a secure filing cabinet. Access to such information will only be permitted by this researcher and research supervisors. During the marking process, external examiners of my project may also have access.

What are the possible risks to taking part?

The risks in this study are minimal. The main risk is in sharing your experiences and views in response to specific questions you may feel some negative emotions and potentially require further support. In this event the researcher will signpost you to further appropriate support. In the event you decide to participate and become distressed by any issue or theme arising either before or after the interview, please contact any of the following agencies for support:

1. Mind: [Home - Mind](#) 0300 123 3393, Mon-Fri 9-6pm, email: info@mind.org.uk
2. Samaritans: [Contact Us | Samaritans](#) 116 123, Anytime, email: jo@samaritans.org
3. Supportline: [SupportLine - Confidential Emotional Support for Children, Young Adults and Adults](#) 01708 765200 Email: info@supportline.org.uk

As this study involves a small number of participants there is potential risk of identity recognition. I will be anonymising participant information in my thesis and subsequent research papers, using identifiers such as Person A, Business A etc. to minimise this risk.

Any further questions?

If you have any questions or require more information about this study before or during your participation, please contact:

Research student: Jerry Martin jerryexcel@hotmail.com

Research Supervisors: Rachel Lewis and Jo Yarker op-pdop@bbk.ac.uk
Department of Organizational Psychology,
Birkbeck, University of London,

Clore Management Building,
Malet Street, Bloomsbury,
London.
WC1E 7HX

For information about Birkbeck's data protection policy please
visit: <http://www.bbk.ac.uk/about-us/policies/privacy#7>

If you have concerns about this study, please contact the School's Ethics Officer at: BEI-ethics@bbk.ac.uk. School Ethics Officer, School of Business, Economics and Informatics.
Birkbeck, University of London, London WC1E 7HX

You also have the right to submit a complaint to the Information Commissioner's
Office <https://ico.org.uk/>

Appendix 4: Consent form for study 2

INFORMED CONSENT FORM – PARTICIPANT COPY

Employee pro-environmental behavioural motivation - an exploration of employee proenvironmental behaviour (PEB) and corresponding motivational factors associated with 'engaging in' and enabling PEB in the 3rd sector workplace.

The aim of the study is to fully understand how leaders' behaviour influences employee behaviour. This will help deepen our understanding of what factors enable and impede behavioural change in the workplace and therefore how organisations can support employees in this endeavour.

The study involves a 60-minute online interview via Microsoft Teams. All identifying information will be anonymised to protect the identity of each participant.

Please read the following items and tick the appropriate boxes to indicate whether you agree to take part in this study. Please email your completed and signed form to jerryexcel@hotmail.com before the date of your interview.

- I have read the information sheet in full, any questions I had have been answered, and I understand I may ask further questions at any time.
- I understand what is involved in participating, that it is voluntary, and that I may withdraw and you can ask for your data to be removed up until the point of analysis, which will take place on approximately 1st March 2021. If you would like to withdraw your data please contact Jerry Martin: jerryexcel@hotmail.com
- I agree to take part in this study under the conditions set out in the information sheet.
- I agree/do not agree to the interview being recorded (*full video recording*)
- I understand that I have the right to ask for the recording to be stopped at any time during the interview

- I understand there is minimal risk in sharing my experiences and views in response to specific questions during interview may elicit negative emotions and have been offered details of agencies where I may seek further support.

Name _____

Signed _____

Dated: _____

INFORMED CONSENT FORM – RESEARCHER COPY

Employee pro-environmental behavioural motivation - an exploration of employee proenvironmental behaviour (PEB) and corresponding motivational factors associated with 'engaging in' and enabling PEB in the 3rd sector workplace.

The aim of the study is to fully understand how leaders' behaviour influences employee behaviour. This will help deepen our understanding of what factors enable and impede behavioural change in the workplace and therefore how organisations can support employees in this endeavour.

The study involves a 60-minute online interview via Microsoft Teams. All identifying information will be anonymised to protect the identity of each participant.

Please read the following items and tick the appropriate boxes to indicate whether you agree to take part in this study. Please email your completed and signed form to jerryexcel@hotmail.com before the date of your interview.

- I have read the information sheet in full, any questions I had have been answered, and I understand I may ask further questions at any time.
- I understand what is involved in participating, that it is voluntary, and that I may withdraw and you can ask for your data to be removed up until the point of analysis, which will take place on approximately 1st March 2021. If you would like to withdraw your data please contact Jerry Martin: jerryexcel@hotmail.com
- I agree to take part in this study under the conditions set out in the information sheet.
- I agree/do not agree to the interview being recorded (*full video recording*)
- I understand that I have the right to ask for the recording to be stopped at any time during the interview
- I understand there is a minimal risk in sharing my experiences and views in response to specific questions during interview may elicit potential negative emotions and have been offered details of agencies where I may seek further support.

Name _____

Signed _____

Dated: _____

Appendix 5: Interview proforma for study 2

RESEARCH PROJECT SEMI-STRUCTURED INTERVIEW GUIDE

Employee pro-environmental behavioural motivation - an exploration of employee proenvironmental behaviour (PEB) and corresponding motivational factors associated with 'engaging in' and enabling PEB in the 3rd sector workplace.

Thank you for participating in this project. As explained, I am researching employee proenvironmental behaviour (PEB) and corresponding motivational factors associated with 'engaging in' and enabling PEB in the 3rd sector workplace

I sent you a consent form for you to sign for research purposes. I can confirm I have received this. May I confirm that re you still happy to proceed with the interview?

Please be reassured that you and your organisation are anonymised in my Doctorate thesis.

We have 60 minutes allocated for interview and as there is much to discuss I intend to digitally record this interview. Please confirm that you are happy for me to record.

This interview will be in three sections. The first part will cover the nature and quality of your relationship with your manager at work while the second part of the interview will explore your personal views on environmental behaviour at work The final part of the interview will focus on those behaviours and actions of your manager that you feel either encourages or inhibits your display of pro-environmental behaviours at work.

Working Definition: Pro-environmental behaviour is **behaviour that reduces one's negative impact and/or increases one's positive impact on the environment** or "behavior that consciously seeks to minimize the negative impact of one's actions on the natural and built world" (Kollmuss & Agyeman, 2002).

Part one: Quality and frequency of communication with your manager

Q1. I'd like you to tell me about the frequency of contact with your manager...

- *How would you describe the frequency of contact?*

- *How does this meet your needs in this role?*

Q2. I'd now like you to reflect on the quality of contact with manager...

- *How would you describe the quality of contact?*
- *How does this meet your needs in this role?*

Part two: Your pro-environmental behaviour related values and actions at work

Q1. I'd like you to consider your own environmentally related behaviours at work

(Examples/prompts: reduced travel, printing, switching-off lights/PC's, recycling etc.)

- *How would you describe your views on workplace pro-environmental behaviour?*
- *What actions do you take at work to demonstrate these views?*

Part three: Your manager's influence on your pro-environmental behaviour at work

Q1. Finally, I'd like you to reflect on how your manager may influence your proenvironmental behaviour at work?

- *Describe what your manager says or does that you feel influences your proenvironmental behaviour at work ?*
- *Describe any additional communication or actions or your manager does that you feel influences your pro-environmental behaviour at work ?*

Agee, J. (2009) Developing qualitative research questions: a reflective process, *International Journal of Qualitative Studies in Education*, 22:4, 431-447, DOI:

10.1080/09518390902736512 To link to this article:

<https://doi.org/10.1080/09518390902736512>

Kollmuss, A. & Agyeman, J. (2002) Mind the Gap: Why do people act environmentally and what are the barriers to pro-environmental behavior?, *Environmental Education Research*, 8:3, 239-260, DOI: [10.1080/13504620220145401](https://doi.org/10.1080/13504620220145401)

Appendix 6: Debrief for Participants Study 2

Employee pro-environmental behavioural motivation - an exploration of employee proenvironmental behaviour (PEB) and corresponding motivational factors associated with 'engaging in' and enabling PEB in the 3rd sector workplace.

Thank you for taking part in this research project, which is exploring employee proenvironmental behavioural motivation - an exploration of employee pro-environmental behaviour (PEB) and corresponding motivational factors associated with 'engaging in' and enabling PEB in the 3rd sector workplace. This research is part of my dissertation for the Professional Doctorate in Organisational Psychology at Birkbeck, University of London.

The main question of my research is to fully understand the role of leadership behaviour on employee PEB and more sepcifically:

1. What are the PEB leadership characteristics enabling employee PEB?
2. What are the PEB leadership characteristics inhibiting employee PEB?
3. Are there specific PEB leadership characteristics more salient in effecting employee PEB?
4. Is there a process model/theory emerging to explain the nuanced leader/employee relationship on PEB?

Resulting aims and objectives are therefore:

- To provide a deeper understanding of the leadership behaviour effects (process, mechanisms and factors at play) on PEB in the workplace with implications for enhancing employee behavioural change
- Contribute to existing literature through development of deeper insights into the leader/follower relationship with respect to PEB and modular and/or theoretical development
- Identify related practical activities, processes and procedures organisations can apply to enhance PEB in the workplace at leader and follower level

I would like to thank you, and affirm that your data will be treated confidentially and your name/personal details will be anonymised.

Finally, I'd like to reiterate that while it is not the intention of the research to cause distress, if you have become distressed or upset as a result of discussing any of your experiences, please contact any of the following agencies for support:

1. Mind: [Home - Mind](#) 0300 123 3393, Mon-Fri 9-6pm, email: info@mind.org.uk
2. Samaritans: [Contact Us | Samaritans](#) 116 123, Anytime, email: jo@samaritans.org
3. Supportline: [SupportLine - Confidential Emotional Support for Children, Young Adults and Adults](#) 01708 765200 Email: info@supportline.org.uk

If you have any concerns about the way that this study was conducted, please do not hesitate to contact the research supervisors Rachel Lewis rachel.lewis@bbk.ac.uk or Jo Yarker j.yarker@bbk.ac.uk

If you would like to find out the outcome of this research, please do not hesitate to keep in touch with me and I will send you a summary of the results. Thank you.

Doctorate Research student: Jerry Martin: jerryexcel@hotmail.com

For information about Birkbeck's data protection policy please visit:
<http://www.bbk.ac.uk/about-us/policies/privacy#7>

If you have concerns about this study, please contact the School's Ethics Officer at:
BEethics@bbk.ac.uk.

School Ethics Officer
School of Business, Economics and Informatics
Birkbeck, University of London
London WC1E 7HX

You also have the right to submit a complaint to the Information Commissioner's Office
<https://ico.org.uk/>

Appendix 7: Ethics Approval

Organizational Psychology Ethics Application Form Proposal to Conduct Research Involving Human Participants

Before completing this form make sure you have familiarised yourself with BPS Core of Human Research Ethics

If you are conducting internet research please read the AoIR recommendations for ethical decision making before completing this form

Section A:

Name(s) of Investigator:	Jerry Martin
Date of application:	27 th September 2020
Proposed start date:	1 st December 2020
Contact details: Email	jerryexcel@hotmail.com
Status (e.g. Lecturer, PhD student, BSc/MSc student)	Professional Doctorate in Organizational Psychology candidate
Supervisor (name and email) (if applicable):	Rachel Lewis and Jo Yarker
Funding source (if applicable)	Not applicable
Project Title (15 words max)	Employee pro-environmental behavioural motivation - an exploration of employee pro-environmental behaviour (PEB) and corresponding motivational factors associated with 'engaging in' and enabling PEB in the 3 rd sector workplace.

Are any committees other than this one evaluating whether your proposed research is ethical?

NO

If yes, include the proposal you made to them and (if available) their decision

Section B: Supporting Documentation

Listed below are the materials you need to include with the ethics submission. Please place an X in each box when you have ensured that this material is included with your submission.

Note that if you are seeking ethical approval for a survey you only need to submit the questionnaire if you are using your own questions. If you are using existing, published questionnaires, you do not have to attach the questionnaire but you do need to explain which questionnaire(s) you are using (and provide references) in Section D.

Under the “Other” option you may specify (and attach) any other documents that you consider relevant to your application. For example you can include an ethics application form that has been submitted to a different committee. If you are debriefing the participants you need to include the relevant documents here. Note that debriefing is not compulsory unless you are actively misleading or deceiving the participants as to the purpose of the study.

For projects that will run over multiple years and may involve multiple data sources it is recommended to include a data management plan. This is also required if you are applying for ethical approval for a funding application or a funded project.

Information Sheet	X
Consent Form	X
Materials used <ul style="list-style-type: none"> • For Quantitative studies provide details of the validated scales and any other questions to be asked. • For Qualitative studies provide a list of key themes and questions to be asked (inc. clarification and probe questions), depending on the nature of the interview (e.g. structured, unstructured, focus group). 	X
Debrief	<u>X</u> applicable
Other (please specify):	X – Recruitment brief

Section C: Checklist

Will the participants be required to experience unpleasant stimuli or unpleasant situations? (this also include unpleasant experiences that may result from deprivation or restriction, e.g. Food, water, sleep deprivation)	NO
Will any information about the nature, process or outcome of the experiment or study be withheld from participants? (if information is withheld, the participants will need to be debriefed after the data collection. In addition, a second informed consent to use the data should be obtained after debriefing the participants)	NO
Will participants be actively misled or deceived as to the purpose of the study? (if the participants are actively misled or deceived, they need to be debriefed after the data collection. In addition, a second informed consent to use the data should be obtained after debriefing the participants)	NO
Will participants receive any inducement or payment to take part in the study?	NO
Does the research involve identifiable participants or the possibility that anonymised individuals may become identifiable? (see “Additional Ethics Advice for Qualitative Research” on Moodle for advice)	NO
Will any participants be unable to provide informed consent? (e.g. minors, people who may lack capacity to do so, people in an unequal relationship forced to participate, etc)	NO
Might the study carry a risk of being harmful to the physical or mental well-being of the researcher in carrying out the study? (any risk above the normal risk expected in everyday life should be reported here)	NO
Might the study carry a risk of being harmful to the physical or mental well-being of participants? (any risk above the normal risk expected in everyday life should be reported here)	NO
Might the study carry a risk of being harmful to the College in any way? (e.g. reputation damage, security sensitive research such as military research or on extremist or terrorist groups, research requiring illegal/extreme/dangerous materials)	NO
Will the research involve any conflict of interest? (e.g. between your role at work and your role as a researcher? will you want to use data/colleagues that you have access/contact with in your job but as a researcher they would not normally be available to you) For advice see Guidance note: Researching within your own institution	NO
Is there any possibility of a participant disclosing any issues of concern? (e.g. legal, emotional, psychological, health) (see “Additional Ethics Advice for Qualitative Research” on Moodle for advice)	DON'T KNOW
Is there any possibility of the researcher identifying any issues of concern? (see “Additional Ethics Advice for Qualitative Research” on Moodle for advice)	DON'T KNOW

Are there any other ethical concerns that you are aware of?	NO
Will you recruit Birkbeck staff (inc ex staff)/students as participants? (for restrictions to questions you can ask Birkbeck staff/students)	NO

please see "A Guide to Research Ethics in Organizational Psychology"
on Moodle

If you answered 'YES' or 'DON'T KNOW' to any of the above; provide further details here; being specific about how you will address ethical concerns in the study protocol: *(you can expand the area below to use as much space as needed)*

As this study intends to explore employee pro-environmental behaviour (PEB) and corresponding motivational factors associated with 'engaging in' and enabling PEB in the 3rd sector workplace, there is a minor possibility that participants may disclose issues of concern and/or conflict. Examples might be where interview questions and related discussion with respondents elicits acute value compromise as well as conflict with their immediate manager, team or organisation and perhaps even related stress, depression or anxiety as a result of this conflict. As a Chartered Psychologist and Associate Fellow (BPS), Registered General Nurse (NMC) and Non-Executive Director MIND mental health charity, I remain fully aware of my responsibilities regarding client welfare and participation and am committed to uphold the HCPC standards of professional conduct and the BPS standards of ethical conduct.

However unlikely the possibility of this occurring, for example a respondent sharing feelings of acute stress or signs of related psychological ill-health, in the first instance I would have to hand resources to direct the individual to, including the Mind support channels *, and I always discuss this with my supervisors. The overall intentions here are firstly to clarify/mitigate potential risks, secondly (pending supervisor approval) take appropriate action where necessary e.g. signpost respondent to relevant support such as counselling/human resources and finally meeting the BPS ethics code of competence on clarity of issue escalation.

*The links to the following two non-profit mental support organisations will be provided:

www.mind.org.uk

www.samaritans.org.uk

Section D: Project description

(you can expand the areas below to use as much space as needed)

Description and rationale for proposed project (in accessible terms – what is the research question, how can people benefit, what are potential risks, and how are they mitigated?)

Aims and objectives

To fully understand the role of leadership behaviour on employee PEB, we propose to examine the relevant behaviours through in depth, semi structured interviews with employees.

Resulting aims and objectives are therefore:

- To provide a deeper understanding of the leadership behaviour effects (process, mechanisms and factors at play) on PEB in the workplace with implications for enhancing employee behavioural change
- Contribute to existing literature through development of deeper insights into the leader/follower relationship with respect to PEB and modular and/or theoretical development
- Identify related practical activities, processes and procedures organisations can apply to enhance PEB in the workplace at leader and follower level

Research questions

3. What are the PEB leadership characteristics enabling employee PEB?
4. What are the PEB leadership characteristics inhibiting employee PEB?
5. Are there specific PEB leadership characteristics more salient in effecting employee PEB?
6. Is there a process model/theory emerging to explain the nuanced leader/employee relationship on PEB?

Benefits and uses of this research

Climate change is an urgent global issue with demands for personal, collective, and national action. While much has been researched and written on this pressing topic especially over the past decade, our understanding of pro-environmental behaviour in workplace settings is limited. With 55% of an individual's time spent at work (Collewet and Sauermann, 2017), not only do employees have an opportunity to demonstrate pro-environmental behaviour at work, but attitudes and behaviours changed in the workplace may impact beyond the work in to home environments, thus benefiting the overall effort to take action.

PEB methodological research endeavour has to date spanned from cross-sectional survey analysis approach at the macro organisational level with concomitant challenges in granularity (Pinzone et al., 2019), to manager/supervisor dyads (Robertson and Barling, 2012) and a singular qualitative grounded theory approach with inherent generalisation limitations (Yang et al., 2019). While Glaser and Strauss's (1967) grounded theory approach used by Yang et al. (2019) enabled deeper insight relationship between hypocritical and substantive PEB with employee motivational implications, little practical recommendation is offered by way of organisational learning and application. Therefore, we are now presented with a timely opportunity to further enrich the still limited body of qualitative research endeavour, enhance our understanding of PEB processes at this level, as well as contribute to greater organisational application.

Thus far, the reflections of wider leadership research, that is has been dominated by the disciplines of management and psychology 'relying upon the quantitative analysis of data, as a result, the

quantitative analysis of quantitative data has dominated leadership research method' (Parry, 1998), are being borne out in our study of the leadership of PEB.

Our understanding of the leader/follower PEB dynamic is also hampered by a number of methodological limitations in the research as outlined, mainly the overriding cross-sectional focus, with findings based on various measure of leadership, none of which have specifically been designed to examine leadership in the context of PEB (Homberg and Stolberg, (2006) - low survey reliability, Wesselink et al. (2017) - overlooking managers' views, Greaves et al. (2013) - overlooking specific behaviours). Convincing arguments have recently been levelled against this concentration on quantitative methodology in the wider leadership research (Alvesson, 1996), and apply in this specific area also. Two significant views of shortcomings amongst PEB research remain, specifically exploring the leadership/follower aspect, firstly that still fractured understanding of the dynamics at play and secondly the opportunity for qualitative research to add richness, nuance, clarity and insight to an area that remains to a great extent opaque (Luu, 2019; Pinzone et al., 2019; Tian and Robertson 2019; Wesselink et al., 2017; Yang et al. 2019).

In positioning qualitative research to understand leadership influence generally, Parry (1998), offers a convincing case through several cogent arguments. Firstly, a psychological approach using quantitative methods has not as yet led to an integrated theory of leadership, secondly leadership as a theme is by nature complex and longitudinal, indicating alternate methodology. Thirdly leadership can be seen as a social influence process thereby requiring richer investigation of mechanisms at play and an appropriate research methodology and finally the methodology must reflect the breadth, depth and range of complex leadership variables that impact the social influence process. With only one qualitative research paper noted in this proposal's corresponding systematic literature review exploring leadership/follower PEB coupled with a body of researchers recommending this methodology to understand the relationship more fully, this research endeavour intends to bridge this gap through the selection of thematic analysis (TA) methodology in semi-structured interview format in contributing both to the body of literature on leader/follower PEB and organisational application.

While current research is multi industry, albeit a predominance of Higher Education and Hospitality, there is an opportunity to expand reach further to both the 3rd sector (Charity) and Professional/Educational Bodies for corresponding greater cultural insights. While this researcher is employed as Organisational Development Consultant (Royal College of Nursing - RCN) and voluntarily as Non- Executive Director (NED) MIND (mental health charity), these two organisations will be approached for subjects within strict Birkbeck ethics guidelines (see separate application) along with approaches to multiple 3rd sector organisations.

Leadership/Employee PEB Research Opportunity

Conclusively with these reflections and insights in mind, this research seeks to explore the detailed relationship between leadership behaviour in the work setting and PEB amongst followers or team members, focussing on the follower perspective for research and data collection, given the gap of knowledge in this specific organisational area and deeper understanding amongst this population. As BPS Chartered Psychologist and Associate Fellow this researcher has extensive experience of

advanced interview technique, rigour and standards ensuring a robust and professional level of research endeavour, data collection and synthesis in line with BPS guidelines.

Risks of this research

Potential risks to participant wellbeing in conducting this research are minimal. Section C has already identified that participants may reveal stress, conflict or psychological ill-health issues and how these will be managed. All participation is voluntary and participants will be reminded at interview commencement that they may withdraw from the process at any stage and my supervisors will be contacted for any additional issues.

Description of participants (How will participants be selected? What are the inclusion/exclusion criteria? How many? How will they be identified and recruited?) Please highlight if you may want to use Birkbeck staff or students in your research and ensure that you adhere to the restrictions outlined in “A Guide to Research Ethics in Organizational Psychology”

This research intends to use homogenous and purposive sampling to identify specific insights in respondents that have regular and frequent contact with immediate managers as research focus is specifically exploring the perceived relationship of PEB amongst these individuals and within the industries highlighted. To this end multiple charity and 3rd sector organisations will be approached to identify potential participants via the professional network LinkedIn and direct email.

Interviews will be with a sample size of up to 15 participants yielding sufficient data to a point where saturation is reached and new insights are unlikely to be uncovered with additional participants (Braun and Clarke (2013)).

Sampling and Stages of Data Collection

1. Research focus in the charity and 3rd sector given absence of study to date with initial approaches to Human Resources and Executive functions within these organisations by way of invitation to this research. With extensive experience in both industry sectors this researcher has access to and good knowledge of key networks to maximise this access to the widest feasible sample group while at all times adhering to strict ethical guidelines to ensure objectivity and methodological rigour. Indeed Rynes & McNatt (2001) note that the key to enabling best possible broad scale access is thorough planning and communication.
2. Focus on sampled team members (followers) through thorough exploratory interviews and given the often somewhat remote contact of followers with leaders on a day to day basis, the intention is to access professional groups where followers have significant day-to-day closer contact than with other groups. For example, this researcher is aware that within the MIND charity, therapists and counsellors have by the very nature of their job more frequent daily and weekly contact with managers, similarly at the RCN, Membership Service Representatives have contact frequency to deliver against their role. This positioning to organisations in sampling will be made clear at the outset in communication and invitation to participating organisations.

3. Organisational PEB related cultural frameworks, processes and systems will be considered to collect a 'back cloth' of 'follower' shaping mechanisms affecting behaviours e.g. recycling policy, incentives and training.
4. Varied tenure, level, experience and role will be sampled to enable broadest conceptual understanding.

Description of Methods (What are the procedures used for data collection? What will the participants be asked to do? Where will the study be conducted? How do you intend to analyse the data?)

Semi-structured interviews will be used to gather personal views and perspectives of respondents' PEB related to their leader relationship and as mentioned above participants will be intentionally selected accordingly. The semi-structured interview will provide sufficient framework data to explore perceptions, experiences while gather data related to personal behaviours while offering sufficient flexibility compared to structured interview to explore additional topics and themes in more depth if needed. Each interview is expected planned for 60 minutes duration including introduction, questions/discussion, closing remarks and explanation of next research steps.

Covid 19 Restrictions - Research and Interview **Contingency Planning**

Given Covid 19 restrictions all interviews will take place via Microsoft Teams (offering encryption facility for additional security) from my personal home office thereby ensuring personal safety of both participant and researcher as well as offering speedy access to more widely dispersed UK locations. Recording of all interviews will also enable more accurate and comprehensive data transcription (consent requested at start of each interview) while all participants will be informed of their right to stop recording at any point during the interview process.

By using thematic analysis (TA) methodology to interrogate my data this will help identify, analyse, and report patterns (themes) within my data, minimally organises and describe data sets in rich detail and interpret various aspects of the research topic (Boyatzis, 1998) thus enabling a systematic approach to analyse data elicited in this qualitative research. Clear benefits of TA over other forms of qualitative analysis include flexibility and as Braun & Clarke (2013) emphasise: 'used to develop a critical, constructionist analysis which can identify the concepts and ideas that underpin the explicit data content, or the assumptions and meanings of data'. This researcher will be both transcribing all interviews via comprehensive spreadsheet data capture and analysing the data personally, thereby foregoing use of transcription software used by some researchers in the thematic analysis process. Boyatzis (1998) amongst others describe the distinct advantages of researchers directly transcribing interview data enabling deep familiarity, understanding and sense-making contributing to the richness of findings and while the process is painstaking and time consuming, the results are often viewed as highly beneficial.

What arrangements are to be made to protect participants' anonymity?

In order to protect participants' anonymity, I will use pseudonyms (alphabetical coding e.g.

participant A, participant B etc.) to replace personal identification data on the interview transcripts and throughout the process of coding. Braun and Clarke (2013) amply illustrate effective use while viewed as best practice in protecting participant anonymity.

Additionally, respondent locations, department/business name and any other individual identifiers will also be altered to similar anonymised codes e.g. business x or y etc and location

On a separate password protected file the names of participants and identifiers will be stored up the time of data analysis commencement (see time plan) so that should participants wish to withdraw their data from the study, their data can be easily located and confirmed as removed.

What arrangements are to be made to ensure that the data you collect is held securely and confidentially? (both electronic and hard copies)

All electronic files will be password protected and stored on the university N drive. All hard copy files, such as notes, will be stored in a locked filing cabinet in my private office at home.

Limits to confidentiality also need to be highlighted as follows. Firstly, although unlikely in this research endeavour, data and procedure can be legally requested by specific agencies e.g. Her Majesty's Revenue and Customs (HMRC). Additionally, if during the research process participants disclose intention to self-harm or harm others, as researcher I have professional obligation to report this to relevant authorities. These issues will be made clear to participants as part of informed consent and pre-briefing stages prior to interview commencement. In line with best practice guidelines all research data will be retained for three years on completion.

What arrangements are to be made to obtain the free and informed consent of the participants?

All participants will receive information sheet and consent form by email in advance of the virtual interview. Participants can then provide electronic signature by reply, or print to scan and return.

Each interview will commence by reaffirming research aims, objectives and intended outcomes and before the interview starts, I will give participants ample opportunity to ask any questions.

If you are conducting internet research, please explain how you have addressed the following issues:

- a. Does your internet research involve human participation?
- b. Does your internet research take place in a private or public internet space?
- c. Is it appropriate to obtain informed consent from those whose data you are using?
- d. Is it appropriate to anonymise or attribute your internet data?

(Please see the AoIR recommendations and BPS Ethics Guidance on Internet-mediated Research for a definition of internet research and more details on these issues)

This study will not conduct internet research.

References used in Section D

Boyatzis, R. E. (1998). Transforming qualitative information: Thematic analysis and code development. Thousand Oaks, CA: Sage.

Braun, V., & Clarke, V. (2013). Successful qualitative research: A practical guide for beginners. London: SAGE. ISBN 1847875815, 9781847875815.

Collewet, M. & Suherman, J. (2017) Labour Economics, 47:96-106, DOI: [10.1016/j.labeco.2017.03.006](https://doi.org/10.1016/j.labeco.2017.03.006)

Maguire, M., & Delahunt B. (2017). Doing a Thematic Analysis: A Practical, Step-by-Step Guide for Learning and Teaching Scholars. All Ireland Journal of Teaching and Learning in Higher Education, 3, 3357-33514. Section E: Declarations

Please confirm each of the statements below by placing an 'X' in the appropriate space

I certify that to the best of my knowledge the information given above, together with accompanying information, is complete and correct.	X
I accept the responsibility for the conduct of the procedures set out in the attached application.	X
I have attempted to identify all risks related to the research that may arise in conducting the project.	X
I understand that no research work involving human participants or data can commence until ethical approval has been given.	X

Suggested Classification of project by the applicant (please highlight):

Routine

Signed by the applicant:		Date	
<i>J. Martin</i>		11.10.20	

If you have answered with “Yes” or “Don’t know” to any of the questions in Section C, your project should be classified as either “Sensitive” or “Extremely Sensitive”. However note that your project may be “Sensitive” or “Extremely Sensitive” even if you have responded with “No” to all section C questions.

Section F: Classification

FOR USE BY SUPERVISORS OR THE DEPARTMENTAL RESEARCH OFFICER

Classification of project (please highlight):

ROUTINE based on OPEA-19/20-10.

Signed by the Supervisor (if applicable)	Rachel Lewis	Date	19.10.20
Signed by the Departmental Research Ethics Officer		Date	

Appendix 8: Full Codes & Themes for Study 2

Theme	Code
Enabling conversations	<ul style="list-style-type: none"> • Manager enabling conversations about green issues • Bringing recycling considerations into social conversations • Office conversations triggered by media documentary, affecting own thinking and behaviour change • Manager conversations influencing behaviour outside work such as shopping choices • Frequent daily conversations on 'eco' issues aided by physical proximity • Manager instilling 'mindfulness of our communal spaces and recycling and getting rid of waste.' • Manager discussions on recycling options available for rubbish disposal, printing and disposable cups use • Manager positive influencing 'follower' recycling decisions through regular conversations • Manager conversations influencing 'soft copy' storage of notes/documents and printing use
Job co-creation	<ul style="list-style-type: none"> • Manager allowing co-creation of job (such as organising 'patch' in different ways) to facilitate reduction in energy usage • Covering each others' work to avoid doubling up on travel/time/energy
Shaping behavioural choices	<ul style="list-style-type: none"> • Supporting behaviour/reinforcing choices • Conversations about best choices to make

<p>Role modelling</p>	<ul style="list-style-type: none"> • Role modelling from the manager • Proactive about recycling/choices • Role-modelling manager's 'exemplar' behaviour • Realisation that manager is role model and 'look up to her' (exemplar/paragon) • 'Noticing' manager bringing and refilling own cups and storage containers and choosing similar behaviour • Leading by example (mugs use) e.g. "I've got my own mug with me" - encouraging others to feel ok about what they do in changing habits • Manager leading by example such as 'turning off lights before we go home' • Manager role modelling/reinforcing reduction of physical files/paper use in favour of IT files • Manager role modelling and supporting environmentally related behaviours (reusable cups and glasses). • Noticing manager making choices about printing off documents and being influenced by that • Noticing manager using real cups, knives and forks instead of plastic, instils sense of 'he's doing the right thing' – influencing behaviour
	<ul style="list-style-type: none"> • Seeing what manager does behaviourally affects 'follower' behaviour • Supportive in departmental agenda to use less paper by 'saying it and role modelling it'
<p>Challenging behaviour to do things differently</p>	<ul style="list-style-type: none"> • Challenging my behaviour to do things differently • Manager 'pushing' on behaviour like printing to reinforce behavioural change • Challenging my preconceptions on prior behaviours e.g. writing/communicating via laptop rather than paper/pen/pad use. • Manager challenging the need/obligation to travel from region(s) offices to HQ (concomitant effects on travel/environment) • Reinforcing 'return on investment' decision making by staff such as car travel (concomitant effects on travel/environment). • Manager encouraging alternatives to face-to-face meets via driving such as phone use (concomitant effects on travel/environment) • Manager 'prompting' follower action on environmentally related workplace issues, signposting to collaborate with others. • Manager influencing my behaviour in challenging need to travel for meetings in favour of virtual alternatives

<p>Validating behavioural choices</p>	<ul style="list-style-type: none"> • Remembering and acting-out 'eco' related instructions Putting environmental considerations within risk assessments/process decisions • Highlighting the bigger impact of small behaviours • Validating/supporting PE choices • Manager supporting staff to decide where/when they can work best (concomitant effects on travel/environment) • Endorsing/reinforcing existing environmental behavioural choices and the 'ask' of others (like unplugging laptops)
<p>Advocating change</p>	<ul style="list-style-type: none"> • Sense of office presenteeism comes 'from the very top' at Chief Executive level which challenged/changed by local manager (concomitant effects on travel/environment) • Eco-consideration as part of office reconfiguration (collaborative team discussion) • Manager co-shaping 'eco-initiative review' of member 'freebies' to sustainable alternatives • Manager advocating change through conversations from organisational 'green strategy' and union activity involvement