



**Decoupling, Tight Coupling and Barriers to Sustained Culture Change for
Environmental Sustainability in North-East Scottish Universities**

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**Thesis Submitted in Partial Fulfilment of the Requirements of Bournemouth
University for the degree of Doctor of Philosophy.**

August 2024

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Abstract

This research focused on the policy-practice and means-ends decoupling of environmental sustainability (ES) within North-East Scottish Universities (NESU). It explores the 'tight coupling,' where ES becomes embedded and sustained in institutional members' daily routines and activities. Additionally, the research identifies context-specific barriers that hinder tight coupling efforts in NESU, providing valuable insights for policymakers and change agents. These insights can empower them to plan effective cultural transformation, thereby contributing to the practical application of the research.

Drawing on institutional theory, transformational culture change, and the Normalisation Process Theory (NPT), this study employs a critical lens to capture explicit and implicit factors contributing to the disconnect between policy and practice regarding ES. This disconnect often leads to a ceremonial treatment of sustainability initiatives. The research also explores how ES can become more tightly coupled, reproduced, and sustained over time.

This research employed case studies and grounded theory (GT) methodologies, demonstrating a thorough data collection and analysis approach. Data were collected through semi-structured interviews with 25 participants from two NESUs and analysed using Corbin and Strauss' (2008) coding process (open, axial, and selective) and constant comparative analysis. The findings reveal that NESU universities exhibit a superficial adherence to ES principles. They adopt a symbolic approach, where visible actions are taken to establish legitimacy while underlying practices remain inconsistent. Policy-practice decoupling factors include bounded rationality, internal and external fragmentation, task compartmentalisation, and outsourcing. Means-end decoupling factors include goal ambiguity, organisational culture, underestimation of resources (human and financial), limited technical infrastructure, and accidental decoupling. This thorough research process ensures the validity and reliability of the findings.

The research suggests that tightening ES within institutional culture requires building coherence, fostering cognitive participation, promoting collective action, and implementing reflective monitoring of enacted practices. NESU's pursuit of cultural transformation will encounter challenges, including individual psychological, systemic, and resource constraints, which are surmountable.

While limited to data from two universities, this research significantly contributes to theory and practice in environmental sustainability. It focuses on ES embedding rather than implementation, offering new insights for identifying decoupling manifestations. Additionally, it contributes to institutional culture change by developing a framework that comprehensively captures strategies for achieving tight coupling of ES within university culture.

This research makes an original contribution by merging institutional theory and NPT as a theoretical lens to examine ES in a university context. It confirms existing factors within each theory and sheds light on previously unreported factors. Finally, the proposed conceptual framework provides tailored strategies for NESU to effectively integrate ES into overt and covert aspects of their institutional culture.

By achieving tight coupling of ES, universities can move beyond symbolic gestures and create a culture of sustainability that permeates all aspects of institutional life. This transformation fosters long-term environmental responsibility, not only within the university but also in the broader community. The proposed framework, informed by the context of NESU, offers valuable insights and strategies applicable to universities worldwide seeking to integrate ES more deeply into their core values and operational practices.

Keywords: Barriers, Culture change, Decoupling, Environmental Sustainability, Higher Education Institutions, Means-ends decoupling, North-East Scottish Universities, policy-practice decoupling, Tight coupling, University.

Dedication

I dedicate this thesis to God almighty [Jehovah], the source of all wisdom, for His divine guidance, inspiration, and wisdom that have been the cornerstone of this academic journey. His words, “He gives wisdom generously without reproach...” [James 1:5], have been a constant source of strength and direction.

Acknowledgements

The successful completion of this doctoral thesis would not have been possible without numerous individuals' invaluable support and guidance. I am incredibly fortunate to have had Dr. Sachiko Takeda, whose steadfast support, constructive criticism, and unwavering encouragement were instrumental in navigating the complexities of this research project. Her patience and dedication throughout this journey are deeply appreciated.

I also extend my sincere gratitude to other esteemed faculty members who contributed their expertise at various stages of this research. Professor David R. Jones' belief in my potential initially sparked the pursuit of this doctoral degree. Even after he left BU, his continued mentorship is a testament to his commitment to fostering academic growth. I am further grateful to Dr. Sarah Leidner and Dr. Karen Thompson, who provided valuable guidance during their time as part of my supervisory team at BU.

My appreciation extends to the team at Robert Gordon University, where this research journey began. Dr. Abhishek Agarwal and Professor Kenneth Russell offered invaluable advice and support that significantly shaped the trajectory of this PhD work. I am particularly grateful to the examiners of this thesis, Professor Rodrigo Lozano and Dr. Shuangfa Huang, for their rigorous and insightful feedback. The critical questions and comments they raised significantly enhanced this work's final version.

On a personal note, I am eternally grateful to my husband, Mr Ayodeji Oreoluwa Kehinde, and our two beautiful children, Blossom Otitololuwa Onyiyechuwkwu Kehinde and Divine Owo-Oluwa Chukwuebuka Kehinde. Their unwavering support and the joy they have brought into my life have driven this academic journey.

I am thankful to my family, particularly my father, Chief Dr Donatus Emeka Ojiakor, for his unwavering prayers and constant reminders during our phone conversations about the culmination of my PhD studies. His gentle nudges helped me maintain focus and momentum throughout this research undertaking. I am equally grateful to my mother, Mrs. Sarah Emeka Ojiakor, for her constant love and gentle reminders to maintain a healthy work-life balance. My heartfelt gratitude goes to my siblings,

Chidi Ojiakor, Obinna Anegboka, Paul Anegboka, and Maduabuchi Anegboka, for their unwavering support and prayers.

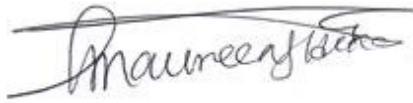
My sincere appreciation extends to my mother-in-law, Mrs. Olaitan Kehinde, for her unwavering support and prayers, which provided immense strength throughout this journey. I am also grateful to the Kehinde family for their unwavering moral support.

I am particularly indebted to Dr Zillur Rahman for his insightful guidance on data analysis, which significantly benefited this thesis. My gratitude extends to Dr Festus Adedoyin, Dr Osikhuemhe Okwilagwe, Mr Mark Ridolfo, and Dr Simon Roberts for their meticulous proofreading of this thesis, ensuring its clarity and accuracy. Special thanks go to my friends, Mrs Christy Brikinn, Dr Chisa Onyejekwe, and Dr Kunle Oke, who, in their unique ways, offered invaluable advice and moral support, motivating me to persevere and complete this thesis.

My most profound appreciation goes to the participants in this research. I sincerely appreciate their willingness to share their time and insights. Their invaluable contributions were integral to the success of this work.

Declaration

I declare that this thesis represents original work and that no material in this thesis has been used in any other submission for an academic award.



06/08/2024

Signed.....

Date.....

TABLE OF CONTENTS

Copyright Statement	2
Abstract.....	3
Dedication.....	5
Acknowledgements.....	6
Declaration.....	8
List Of Tables	13
List Of Figures.....	15
List Of Abbreviations	16
CHAPTER ONE	17
INTRODUCTION.....	17
1.1. Prelude	17
1.2. Research Background	19
1.3. Research Aim and Questions	22
1.4. Research Objectives.....	22
1.5. Research Rationale.....	23
1.6. Contributions of this research	26
1.7. Challenges.....	28
1.8. Organisation of Thesis	30
CHAPTER TWO	31
RESEARCH BACKGROUND: ENVIRONMENTAL SUSTAINABILITY IN UNIVERSITIES	31
2.0. Introduction.....	31
2.1. Environmental Sustainability- Overview of Concept	31
2.2. Environmental Sustainability and Its Adoption in Higher Education Institutions.....	37
2.3. The Scottish Higher Education Context and the State of ES Adoption and Implementation on Campus	45
2.4. The Benefits of an Environmentally Sustainable University	61
CHAPTER THREE	63
RESEARCH THEORETICAL FOUNDATION	63
3.0. Introduction.....	63
3.1. Institutional Theory.....	63
3.2. Transformational Change.....	71
3.3. Institutional Culture- Overview of Concept.....	74
3.4. Institutional Culture Change and Environmental Sustainability.....	82
3.5. Environmental Sustainability Tight Coupled Institutional Culture	86
CHAPTER FOUR.....	105
LITERATURE REVIEW	105
4.0. Introduction.....	105
4.1. Continuum of Couplings.....	105
4.2. Decoupling and Environmental Sustainability.....	106
4.3. Types of Decoupling.....	110
4.4. Factors of Policy-Practice and Means-Ends Decoupling.....	111
4.4.1. Causal Indeterminacy.....	111
4.4.2. Fragmentation of the External Environment.....	112
4.4.3. Internal Fragmentation.....	113
4.5. Process of Change for Sustainability:	116

4.5.1. Tight coupling Environmental Sustainability into Institutional Culture- The Normalisation Process Theory approach.	123
4.5.1.1. Coherence	123
4.5.1.2. Cognitive Participation	127
4.5.1.3. Collective Action	129
4.5.1.4. Reflective Monitoring	135
4.6. Barriers to Environmental Sustainability Tight Coupling into Institutional Culture	137
4.7. Summary of Literature Gaps.....	145
CHAPTER FIVE	149
RESEARCH METHODOLOGY	149
5.0. Introduction.....	149
5.1. The Philosophical Framework of The Research	149
5.2. Research Paradigm.....	152
5.2.1. Research Ontology.....	152
5.2.2. Research Epistemology	154
5.2.3. Research Axiology	155
5.2.4. Research Methodology	155
5.4. The Exploratory Design of the Research.	158
5.5. The Inductive approach of the research	160
5.6. Research Strategy.....	162
5.6.1. Case Study	162
5.6.2. Grounded Theory	165
5.7. Sampling	167
5.7.1. Criteria for the Selection of Case Studies.	168
5.7.2. Selecting Research Participants	171
5.7.3. Accessing Research Participants.....	173
5.8. Data collection	176
5.8.1. Semi-structured Interview.....	176
5.8.2. The Pilot.....	178
5.8.3. The Interview Procedure and Transcription.....	179
5.9. Data Analysis	182
5.9.1 Data Coding	182
5.9.2. Analysing Coded Data Constant Comparative Method (CCM).....	188
5.10. Research Ethics	189
5.11. Limitations of Methodology	190
5.12. Chapter Conclusion.....	196
CHAPTER SIX	197
PRESENTATION OF RESEARCH FINDINGS.....	197
6.0. Introduction.....	197
6.1. Factors Of Decoupling Between Policy And Practice Of Environmental Sustainability In NESU.....	197
6.1.1. Causal Indeterminacy-Bounded Rationality	197
6.1.2. Fragmentation of External Environment.....	200
6.1.3. Internal Fragmentation.....	202
6.1.4. Task Compartmentalisation	207
6.1.5. Outsourcing.....	208
6.2. Factors Of Means-Ends Decoupling Of Environmental Sustainability In NESU.	210
6.2.1. Goal Ambiguity.....	210
6.2.2. Culture.....	212
6.2.3. Underestimation of Resources	214

6.2.4.	Exiguous Technical Infrastructure	216
6.2.5.	Accidental Decoupling.....	217
6.3.	Tight Coupling Environmental Sustainability Into The Culture And The Daily Routine Of Institutional Members In NESU	218
6.3.1.	Coherence	218
6.3.2.	Cognitive Participation	222
6.3.3.	Collective Action	227
6.3.4.	Reflective Monitoring.....	233
6.4.	Barriers Hindering Efforts To Tight-Couple Environmental Sustainability Into The Culture Of NESU	237
6.4.1.	Individual/psychological Barriers	237
6.4.2.	Systemic barrier	239
6.4.3.	Resource Constraint Barrier.....	240
	Chapter Conclusion.....	242
CHAPTER SEVEN.....		243
DISCUSSION OF RESEARCH FINDINGS		243
7.0.	Introduction.....	243
7.1.	Factors Of Decoupling Between Policy And Practice Of Environmental Sustainability In Nesu	243
7.2.	Factors Of Means-Ends Decoupling Of Environmental Sustainability In Nesu.....	251
7.3.	Tight Coupling Environmental Sustainability Into The Culture And The Daily Routine Of Institutional Members	256
7.4.	Barriers Hindering Efforts To Tight-Couple Environmental Sustainability Into The Culture Of Nesu	266
7.5.	Research Conceptual Model.	268
CHAPTER EIGHT.....		270
CONCLUSIONS AND RECOMMENDATIONS.....		270
8.0.	Introduction.....	270
8.1.	Addressed Research Questions	270
8.1.1.	Research Question One: What Factors Contribute To The Policy-Practice Decoupling of ES In Nesu?.....	271
8.1.2.	Research Question Two: What Factors Contribute To The Means-Ends Decoupling of ES In Nesu?	272
8.1.3.	Research Question Three: How Can Nesu, by Leveraging the Perspectives of University Employees, Reverse its Current Decoupling Practices and Enable the Tight Coupling Of ES into Daily Routines and Culture?.....	273
8.1.4.	Research Question Four: What Barriers Might Hinder Nesu's Efforts as it Strives to Tighten the Coupling Of ES into its Culture?.....	274
8.2.	Research Contributions to Knowledge	275
8.2.1.	Research Contributions to Literature	275
8.2.2.	Research Contributions to Institutional Theory	276
8.2.3.	Research Contributions to NPT	278
8.3.	Research Contributions to Practice	279
8.4.	Recommendations for NESU.....	280
8.5.	Summary of the Limitations of The Research	283
8.6.	Suggestions for Further Research	285
References.....		286

Appendices.....	322
Appendix 1 Participant Information Sheet.....	322
Appendix 2 Consent Form.....	324
Appendix 3 Interview Guide.....	325
Appendix 4 Sample of Interview Transcript.....	326
Appendix 5 Open Codes.....	335
Appendix 6 Axial Codes.....	340

LIST OF TABLES

Table 1 Summary of Key Environmental Ideologies.....	36
Table 2 Summary of strategies used to promote ES in Higher Education Institutions	44
Table 3 Scottish Universities Profile	46
Table 4 Environmental Sustainability Targets of Scottish Universities	49
Table 5 Scottish Universities buildings & spaces statistics	53
Table 6 Green Performance of Scottish Universities 2019.....	59
Table 7 Summary of key assumptions of institutional theory and its application in this research	67
Table 8 Key differences between ES implementation and tight coupling	88
Table 9 Summary of key research studies on maturity levels of institutional sustainability	93
Table 10 Practices typical of each maturity stage of ES institutional culture.....	97
Table 11 Summary of research studies on the process of change for sustainability	117
Table 12 Summary of barriers to tight coupling of ES into institutional culture.....	140
Table 13 Summary of the nature of questions posed in qualitative research studies.....	159
Table 14 Types of Case Study Designs	164
Table 15 Details of the case studies selected for the research Figures as of the Year 2017	171
Table 16 Profile of Interview Respondents.....	175
Table 17 Summary of data collection methods.....	177
Table 18 The research interview guide and its links to the main themes of the research	181
Table 19 Example of the line-by-line coding.....	183
Table 20 Example of open codes generated for this research	184

Table 21 Examples of Axial themes created for the research	186
Table 22 Example of open codes grouping into Axial Codes.....	186
Table 23 Guidelines on ethical considerations and confidentiality.....	190
Table 24 Summary of findings for ES citizenship behaviours of University Staff.....	224
Table 25 Summary of findings on GHRM strategies for ES tight coupling into a culture	232
Table 26 Summary of research primary findings.....	242

LIST OF FIGURES

Figure 1 A critical mental shift in mindset is needed to realise ES	34
Figure 2 Scottish Universities' Energy Consumption between 2015/16-2019/20.....	54
Figure 3 Scottish Universities Renewable Energy Generation 2016/17 to 2019/20.....	55
Figure 4 Scottish Universities Carbon Emission 2016/17-2019/20.....	56
Figure 5 Herman's Iceberg Model of Culture.....	79
Figure 6 Schein's Model of Culture.....	80
Figure 7 Rousseau's (1990) Model of Culture	81
Figure 8 Sustainability Maturation Curve.....	90
Figure 9 Bertels, Papania and Papania (2010) Model of Practices for Embedding Sustainability in Organisational Culture	134
Figure 10 Summary of the main barriers to ES tight coupling into a culture	144
Figure 11 Relationship between research paradigms Ontology, Epistemology, Axiology and Methodology	152
Figure 12 Corbin and Strauss (2008) coding process	182
Figure 13 Example of the research Selective Coding	187
Figure 14 Research conceptual framework of factors of decoupling (Policy-Practice, Means-Ends), tight coupling and barriers to ES tight coupling into the culture of NESU	269

List of Abbreviations

CCM	Constant Comparative Method
ES	Environmental Sustainability
GHRM	Green Human Resource Management
GT	Grounded Theory
HR	Human Resource
NESU	North-East Scottish Universities
NPT	Normalisation Process Theory

CHAPTER ONE INTRODUCTION

1.1. Prelude

Environmental sustainability (ES) has become an imperative for ensuring humanity's future. Resource depletion threatens humanity's survival, potentially leading to ecological, social, and economic collapse. Climate experts and activists warn that the consequences of environmental degradation, already manifesting globally, could push the natural world past the point of repair. Consequently, protecting the physical environment is crucial for ensuring humanity's continued ability to meet its current and future resource needs.

This research stems from the researcher's experiences during her master's studies in Scotland. While observing the implementation of environmental initiatives at NESU, a disconnect emerged between stated commitments and daily practices. Organisational members, including staff and students, displayed a concerning level of disregard towards environmental matters. Despite readily available initiatives and schemes, engagement remained low.

Several vivid examples illustrate this gap. The communal cafeteria at the researcher's institution boasted labelled recycling bins, educational posters, and even large screens promoting ES practices. However, waste disposal habits blatantly disregarded these efforts. Many users paid little attention to sorting their waste despite the clear messaging surrounding them. The researcher observed another university struggling with traffic congestion due to high personal car usage despite readily available public transportation options and university-promoted sustainable travel initiatives. Similarly, issues with high electricity consumption at both universities were evident, with heating and lights left on in unoccupied spaces.

The researcher's passion for sustainability is not just academic but deeply practical. It stems from a combined background in education and business practice. A decade of experience delivering university courses on 'Responsible Business Practice,' 'Responsible Management,' and 'Leadership' has instilled a strong foundation in sustainability principles. Additionally, five years of professional

experience as an HR Manager exposed the researcher to corporate sustainability efforts and potential disconnects between rhetoric and reality. These experiences and scholarly publications on ES in organisations further fuelled the researcher's interest in exploring this subject.

Furthermore, the researcher's professional career revealed similar disconnects between professed commitment and actual adoption of ES in her organisation. These combined experiences solidify the researcher's identity as both an educator and a professional practitioner, fostering a natural fit with the topic of ES decoupling and tight coupling. This unique perspective, born from her dual roles, positions her to contribute meaningfully to this field.

As Strauss and Corbin (1990) suggest, personal experience is a valuable indicator for a potentially successful research endeavour (p. 35). Van Manen (2016) echoes this sentiment, emphasising the importance of research topics aligning with deep personal interests. Driven by these observations, interests, and background, the researcher designed this study to help universities cultivate a culture that respects the causes of the socio-environmental crisis. The study aims to understand and bridge the disconnects between institutional ES pronouncements and the actual integration of these practices into organisational members' daily routines and activities.

This thesis unravels the mechanisms behind reversing disconnects between environmental principles and actual behaviours. The central argument is that decoupled adoption of ES in universities represents an unsatisfactory condition that must be urgently addressed to avoid inaction on crucial climate sustainability issues.

1.2. Research Background

Environmental unsustainability remains humanity's most pressing challenge, threatening the well-being of current and future generations (Leal Filho et al. 2019b). Public discourse on ES emerged during the Industrial Revolution, highlighting growing concerns about human impact on the natural world (Lorenzoni and Pidgeon 2006). Decades later, ES continues to garner significant media attention due to intensifying environmental issues (Khan and Terason, 2022). For instance, the BBC documentary "Climate Catastrophe" by Sir David Attenborough serves as a stark reminder of the urgency of climate action (McGrath, 2019). The documentary highlights the alarming rate of ice loss in Greenland, with the region having lost four trillion tons of ice and experiencing a daily loss rate five times greater than 25 years ago (McGrath, 2019).

Furthermore, the documentary links extreme weather events like droughts and wildfires to climate change impacts. Attenborough emphasises the critical need for drastic action within the next decade to prevent global temperatures from exceeding a 1.5°C rise by the end of the century, a scenario that could lead to irreversible damage to ecosystems and societal collapse (McGrath, 2019, para. 6). As Attenborough aptly states,

"It may sound frightening, but the scientific evidence is that if we have not taken dramatic action within the next decade, we could face irreversible damage to the natural world and the collapse of our societies".

This research focuses on the university context due to the immense potential universities hold in tackling the ES challenges of this decade. Like other organisations, universities can play a critical role in preventing environmental degradation (Shattock, 2010; Rashe & Gilbert, 2015). Beyond their ecological footprint, universities can significantly contribute to global and national efforts to foster a society that prioritises ecological values. Their educational programs, research activities, and operational practices serve as powerful tools for disseminating knowledge, accelerating the integration of ES principles into business practices (Jabbour et al., 2013; Porter & Kramer, 2011; Leal Filho,

2011), influencing stakeholder behaviours, and developing sustainability competencies (Leal Filho, 2011; Thomas & Cornuel, 2012; Roos et al., 2020).

Universities began responding to sustainability concerns on a global scale following the landmark 1972 Stockholm Conference. Many institutions initiated efforts to reduce their environmental impact by implementing practices that promote the planet's long-term health, such as energy and water efficiency measures, sustainable transportation initiatives, improved waste management, and environmentally responsible procurement strategies (further details in Section 2.2). However, the primary focus has often been on techno-structural solutions.

Despite initial efforts, some universities struggle to achieve sustained effectiveness after implementing ES practices. A key challenge lies in maintaining momentum and ensuring the integration of ES programs and initiatives across the entire institution (see Section 2.3). Specifically, fostering a lasting cultural shift where ES principles become embedded into daily university operations remains a significant hurdle. This research explores strategies to enhance and sustain the embeddedness of ES within institutional culture.

Universities may face difficulties transitioning from initial ES implementation to a state of "tight coupling," where these practices become seamlessly integrated into routine operations. Decoupling, conversely, refers to a fragmented or inconsistent approach to ES, where implemented practices are not fully integrated into daily activities (further details in Section 4.2). This research explores the reasons behind the disconnect between adopting ES practices and their integration into daily operations at NESU (see Section 4.2).

Achieving "tight coupling" is critical for advancing ES beyond mere implementation. This concept emphasises the routinisation and deep integration of successful ES practices into everyday university operations. Ideally, pursuing ES becomes a core value shared throughout the institution. All parts of the university work harmoniously to ensure these principles are embedded across all systems, processes, and within new generations of organisational members (see Section 4.5.1).

Embeddedness is achieved through the long-term persistence of structures and practices that transcend individual members and generations. Building upon the insights from Sections 4.3 and 4.4, this research emphasises the need for universities to undergo a sustained transformation to bridge the gap between environmental policy and practice. Such transformation also requires reversing disconnects between "means" and "ends" in sustainability initiatives. Tight coupling of ES principles within the university culture is essential. Tight coupling fosters the routinisation of ES activities, ensuring that the actions of all institutional members align with the university's environmental policies and messaging. However, strategies to drive tight coupling of ES may vary depending on the specific context. Therefore, this research seeks to identify the critical solutions that will effectively promote tight coupling within the context of NESU.

Universities can encounter various barriers that hinder effective cultural transformation for ES implementation (see Section 4.6). These barriers act as obstacles that impede or prevent progress towards a more sustainable culture. While a vast body of literature explores the challenges of achieving sustainability in universities, the existing research primarily focuses on barriers to initial ES implementation, not specifically on tight coupling. Additionally, existing research often investigates these challenges within diverse contexts with a limited focus on the specific location of this study. By uncovering the obstacles to achieving tight coupling of ES within NESU, this research contributes valuable new knowledge to the field. This knowledge can inform policymakers of the challenges they might encounter as they strive to embed ES principles into the university culture.

University employees are crucial stakeholders who can offer unique perspectives on the transformational efforts needed to achieve tight coupling of ES. They are the ones who translate policy into action, and their insights are essential in establishing practical pathways towards effective implementation. The existing literature offers limited research that specifically explores the views of university employees regarding integrating ES practices within institutional culture. Furthermore, existing studies often focus on universities in contexts outside of NESU. Therefore, this research seeks to achieve the following aims and objectives.

1.3. Research Aim and Questions

To investigate the challenges and opportunities for achieving tight coupling of ES within the daily routines and culture of NESU by leveraging university employee perspectives through the constant comparative Grounded Theory (CCGT) methodology. The following research questions are addressed within this research.

1. What factors contribute to the policy-practice decoupling of ES in NESU?
2. What factors contribute to the means-ends decoupling of ES in NESU?
3. How can NESU, by leveraging the perspectives of university employees, reverse its current decoupling practices and enable the tight coupling of ES into daily routines and culture?
4. What barriers might hinder NESU's efforts as it strives to tighten the coupling of ES into its culture?

1.4. Research Objectives

1. To identify factors contributing to the policy-practice decoupling of ES in NESU.
2. To identify factors contributing to ES's means-ends decoupling in NESU.
3. To develop recommendations, informed by the perspectives of university employees, for reversing current policy-practice and means-ends decoupling practices and enabling the tight coupling of ES into daily routines and culture at NESU.
4. To identify potential barriers that might hinder NESU's efforts as it strives to tighten the coupling of ES into its culture.

1.5. Research Rationale

This research delves into the complexities of realising cultural change towards ES within universities. Universities, by nature, generate significant environmental impacts. Yet, a concerning discrepancy persists between policy pronouncements and adopting sustainable practices (Amaral et al., 2020). This research agenda addresses this critical gap by advancing knowledge through actionable solutions that can cultivate lasting institutional and behavioural change. While acknowledging the multifaceted nature of sustainability, this study focuses specifically on ES to achieve a deeper understanding and ensure feasibility within a doctoral timeframe.

Furthermore, limited research explores the institutional conditions leading to ES decoupling (the disconnect between policy and practice) from the perspective of university employees (Sammalisto et al., 2015; Elken & Vukasovic, 2019). This research actively contributes by uncovering the overt and subtle factors exacerbating this disconnect between policy and everyday practices. These findings will enrich academic literature and practical applications by shedding light on how ceremonial approaches to ES may manifest on university campuses (Snelson-Powell et al., 2016; Graafland & Smid, 2016).

Our understanding of the micro-level processes fostering tight coupling and the integration of ES practices into employee routines remains incomplete (Cai & Mehari, 2015; Ugbaja & Bakoglu, 2017; Snelson-Powell et al., 2020; Khan & Terason, 2022). This research aims to illuminate the intricacies of embedding ES practices within institutional culture, a crucial step in reversing decoupling. By detailing practical strategies for universities to bolster employee engagement with ES initiatives, this research empowers institutions to avoid jeopardising intended environmental benefits and potential stakeholder backlash (Rasche & Gilbert, 2015).

External rankings often serve as a rudimentary tool for assessing university sustainability performance (Soysal et al., 2020). However, some studies rely heavily on self-reported and unevaluated content found on university websites (Amaral et al., 2022). This over-reliance on external rankings and website

content presents a challenge as it fails to capture the on-the-ground realities of ES implementation. As González-Gaudio et al. (2015) aptly point out:

"protocols used to develop rankings of ES fail to demonstrate and probably cannot demonstrate at all - whether those universities at the top have developed in their university community and the social environment a truly alternative culture with respect to the causes of the socio-environmental crisis or if they have simply introduced some more or less superficial changes in areas that may be important (waste management, energy conservation, awareness-raising on mobility, etc.), but that do not really involve a transformation of the university in regard to the key elements of sustainability culture" (p. 80).

Similarly, Alba-Hidalgo et al. (2018) highlight the potential for universities to "appear sustainable" through rankings and accreditation systems without enacting meaningful changes that improve sustainability within their communities and the broader world. Beyond green-ranking league tables and website content, this research employs primary inquiry methods to investigate the realities of ES at NESU. This case study approach is particularly valuable due to the limited research in this context. Existing green rankings provide conflicting assessments of NESU's sustainability performance. For example, NESU ranks within the top fifty universities globally in The Complete University Guide (2019) yet falls within the lowest category in the UK-based People & Planet League Table. This stark disparity underscores the need for a more nuanced understanding of NESU's environmental practices through an empirical investigation.

Furthermore, NESU presents a unique research opportunity due to the context-specific nature of existing research on embedding ES (James & Card, 2012; Levy & Marans, 2012; Berchin et al., 2017). NESU has moved beyond the initial implementation stage of sustainability initiatives; the challenge now lies in achieving a lasting cultural transformation where ES becomes seamlessly integrated into daily routines. This research investigates the specific context of NESU to identify and tailor solutions

for that institution. These solutions can be adapted for other universities facing similar challenges, offering a broader impact.

The benefits of this research extend far beyond the university walls. Universities' unique position empowers them to serve as powerful agents of change. Not only do they have a significant environmental footprint themselves, but they also educate and inspire future generations. By serving as models of environmental responsibility, universities can inspire positive change within local communities, organisations, government agencies, and even individual behaviour. At its core, this research empowers universities to minimise their environmental impact and emerge as sustainability champions, thereby playing a vital role in the international movement towards a more sustainable future for our planet.

1.6. Contributions of this research

Chapter eight (sections 8.2 and 8.3) discusses this research's contributions in detail. Overall, this research contributes knowledge in three key areas: contribution to knowledge of ES within universities, contribution to theories (institutional theory and Normalisation Process Theory—NPT), and contribution to institutional practice.

1. Contributions to Knowledge of ES in Universities:

- **Moving Beyond Implementation to Tight Coupling:** This research moves beyond existing studies that primarily focus on implementing ES initiatives. It delves deeper by investigating "tight coupling," a state where ES becomes embedded within the fabric of university culture, influencing daily routines and activities. This approach provides a richer understanding of how ES is embedded within universities, moving beyond a superficial implementation focus.
- **Unveiling Organizational Dynamics of Decoupling and Tight Coupling:** Previous research often lacks a nuanced understanding of the organisational factors that influence the success or failure of ES initiatives. Many studies on ES initiatives fail to capture the subtle organisational dynamics that impact their effectiveness. This study fills this gap by examining policy-practice decoupling, means-ends decoupling, and tight coupling of ES in the context of NESU. The empirical findings offer fresh perspectives on these dynamics, illuminating how institutional structures and processes interplay with ES outcomes. This knowledge empowers universities to make informed decisions to achieve tight coupling.
- **Developing a Cohesive Theoretical Lens:** While institutional theory and NPT are utilised in the field of ES, their combined application has been limited. This research utilises these frameworks in tandem, creating a comprehensive lens for examining ES in the university context. By integrating these theories, the research offers a robust understanding of the complex dynamics at play in achieving tight coupling.

2. Contributions to Theory:

- **Institutional Theory:** This research strengthens institutional theory's explanatory power in ES within universities by addressing two crucial aspects of decoupling: policy-practice decoupling and means-ends decoupling. It offers a deeper understanding of decoupling by identifying how internal factors such as centralisation, outsourcing, and task compartmentalisation can significantly impact the effectiveness of implemented ES practices. Additionally, it demonstrates how technology limitations and unexpected events can contribute to means-ends decoupling. The study sheds light on universities' intricate difficulties in bridging the gap between ES policies and long-term actions.
- **NPT:** The research validates the core constructs of NPT (coherence, cognitive participation, collective action, and reflective monitoring) for understanding ES tight coupling within universities. It provides valuable empirical evidence for the continued relevance of NPT in research on practice embedding and normalisation within organisational settings. Furthermore, it identifies "environmental sustainability citizenship behaviours" as a new sub-factor contributing to cognitive participation and GHRM as a sub-factor contributing to collective action. This highlights the importance of fostering a shared understanding and commitment to ES beyond formal initiatives, encouraging a more holistic cultural shift.

3. Contribution to Practice:

- **Practical Roadmap for Tightly Coupled ES:** This research offers a valuable roadmap for universities to achieve tight coupling and the deep integration of ES principles into their culture. By pinpointing specific causes of policy-practice gaps and delivering tailored solutions like robust communication, contractor oversight, and financial planning, the research empowers universities to cultivate genuine commitment to ES. Furthermore, it highlights the importance of leveraging GHRM practices, strategic alignment, and external collaboration to create an "environmental citizenship" culture and accelerate progress towards shared sustainability goals. Ultimately, this research equips universities

with the knowledge and tools to bridge the gap between ES policy and practice, fostering a transformative journey towards a sustainable future.

This research goes beyond merely addressing knowledge gaps; it offers a valuable contribution to the practical and theoretical understanding of ES within universities. The findings provide actionable insights for universities seeking to cultivate a culture of sustainability and strengthen the theoretical foundation for future research in this domain.

This research equips policymakers and change agents with the knowledge and strategies necessary to achieve a more comprehensive integration of ES within universities, leading to a more sustainable future for higher education. It is anticipated that this research contributes to NESU's capacity to respond to pressures of (1) managing their campus and activities in a manner that fosters the long-term environmental health of the planet (Velazquez et al., 2006; Lukeman and Glavic, 2007; Jones et al., 2010; Grecu and Ipina 2014; Alghamdi, Heijer and Jonge 2017), (2) upholding a positive reputation and image of ES within established green ranking systems (Alba-Hidalgo et al. 2018), and (3) maintaining a steadfast commitment to addressing the root causes of environmental impacts through continued support for and adherence to established ES charters and agendas (Ragazzi and Ghidini 2017).

1.7. Challenges

Conducting doctoral research is inherently challenging, and this project was no different. Several unforeseen circumstances impacted the research timeline and overall process. The initial supervisory team for this project changed due to faculty departures, necessitating the establishment of new working relationships and requiring additional time for familiarisation with the research project. Transferring to another university during the research project led to further delays. Adapting to a new research environment and securing necessary approvals at the new institution demanded additional effort.

As a researcher using English as a second language, I dedicated myself to ensuring clear and concise communication of the research objectives and findings. Unexpected changes in my personal life, such

as family matters, also impacted the research timeline. Balancing these commitments with the demands of doctoral research required careful time management and prioritisation. Beyond the unforeseen circumstances, specific academic challenges arose during the research process. Obtaining access to suitable participants and case studies for the research proved to be a significant hurdle. This required exploring various recruitment strategies and refining research protocols to attract relevant participants.

The vast literature on ES and organisational change also presented a challenge. Sorting through this complex information required a systematic approach. Adopting the GT open, axial, and selective coding analysis process proved to be an effective tool. This iterative process, while time-consuming, allowed me to navigate the information effectively and organise data in a way that addressed the research questions while maintaining a clear focus on the central message.

1.8. Organisation of the Thesis

This thesis is composed of eight themed chapters. The remainder of the thesis is organised as follows. Chapter Two presents the context of this research in more depth. This chapter discusses the conceptualisations around ES and its adoption in universities. It presents a review of the practice of ES in Scottish universities. This chapter justifies the benefits of embedding ES into universities' systems, processes, and culture.

Chapter three lays out the theoretical foundation of this research. It critically reviews institutional theory, transformational change, culture change, and NPT and discusses the criticisms and justifications for adopting these theoretical frameworks. Chapter Four reviews relevant literature on decoupling, tight coupling, and barriers to culture change. In conclusion, this chapter highlights areas where further scholarly inquiry is necessary to advance the current understanding (literature gaps).

Chapter Five is concerned with the methodology used for this study. This chapter begins with presenting the philosophical framework and paradigm of the research. It explains and justifies the research exploratory design strategy, the inductive case study, the GT research approach, the sampling strategy, data collection techniques, and data analysis procedures. It then addresses the chosen methodology's ethical considerations and potential limitations. The sixth chapter of this thesis presents the research findings, focusing on the four integrated themes of the research: policy-practice decoupling, means-ends decoupling, tight coupling and barriers to ES tight coupling to culture.

Chapter seven critically discusses the primary findings of this research, presented according to its themes. This chapter concludes with a presentation of the research conceptual model. Finally, chapter eight contains the conclusion of this thesis. This section details the contributions, recommendations, and limitations of the research.

CHAPTER TWO

RESEARCH BACKGROUND: ENVIRONMENTAL SUSTAINABILITY IN UNIVERSITIES

2.0. Introduction

This chapter presents the background context of this research in more depth. It also provides an overview of ES and its adoption in universities. Furthermore, it reviews the NESU context and discusses the progress in implementing and sustaining ES. This chapter also justifies the benefits of embedding ES into universities' systems, processes, and culture.

2.1. Environmental Sustainability- Overview of Concept

ES was first coined in 1992 as “environmentally responsible development” by scientists at the World Bank (Moldan et al., 2012). Progressively, by 1995, the term was rephrased to ES (Moldan et al., 2012). The existing literature provides various definitions of the term ES. Below are illustrative examples of the multiple definitions available for this terminology.

- *“A condition of balanced, resilience and interconnectedness that allows human society to meet their current and future resource and services needs while neither diminishing biological diversity nor compromising the health of the ecosystem that provides them”* Morelli (2011, p.6)
- *“The ability to maintain the qualities that are valued in the physical environment”* Sutton (2004 P.i)
- *ES aims to minimise the use of hazardous or toxic substances, resources and energy with arranged control and preventive strategies such as “renewable resources, resource minimisation, source reduction (dematerialisation), recycling, reuse, repair, regeneration, recovery, remanufacturing, purification, and degradation”* (Glavič, and Lukman 2007, p.1876).

- *ES seeks to improve human welfare by protecting the sources of raw materials used for human needs and ensuring that the sinks for human wastes are not exceeded to prevent harm to humans* (Goodland, 1995, p.3).

In this thesis, Sutton's (2004) definition of ES is adopted as the preferred definition for ES. According to Sutton, ES is the ability to maintain the qualities that are valued in the physical environment”, such as sustaining ecosystem services (e.g., water cycle, clean air, climate moderation, soil protection, etc.), high-quality urban environment, areas of natural beauty, species, ecological communities, and values flowing from physical resources (e.g., minerals, energy, renewable resources, and water). This definition is preferred because it provides a framework that identifies strategies, innovations and opportunities needed to maintain the so-called ‘quality of the physical environment.’

ES is based on the natural justice argument (Leal Filho et al., 2019b). Nature justice makes the case for climate change mitigation, emphasising the need to protect the natural environment and biodiversity from centuries of exploitation (Van Marrewijk and Werre 2003). The 18th-century advent of the Industrial Revolution resulted in a population explosion, leading to dwindling resources that now require changes in ways of living and consumption (Mebratu 2000). By the 19th century, the surge in demand for petroleum-based non-renewables and the 20th-century industrial revolution of the agriculture sector also compounded the climate challenges, which led humanity to face further threats from an accumulation of greenhouse gases (Lorenzoni and Pidgeon 2006, Laasch and Conway 2015). According to Dunlap and Brulle (2015, p.1), climate change consequences include “increase in natural disasters, adverse weather conditions, threats to the availability of potable water, food and shelter, the prevalence of diseases, species extinction and destabilisation of ecosystems which humans depend on”.

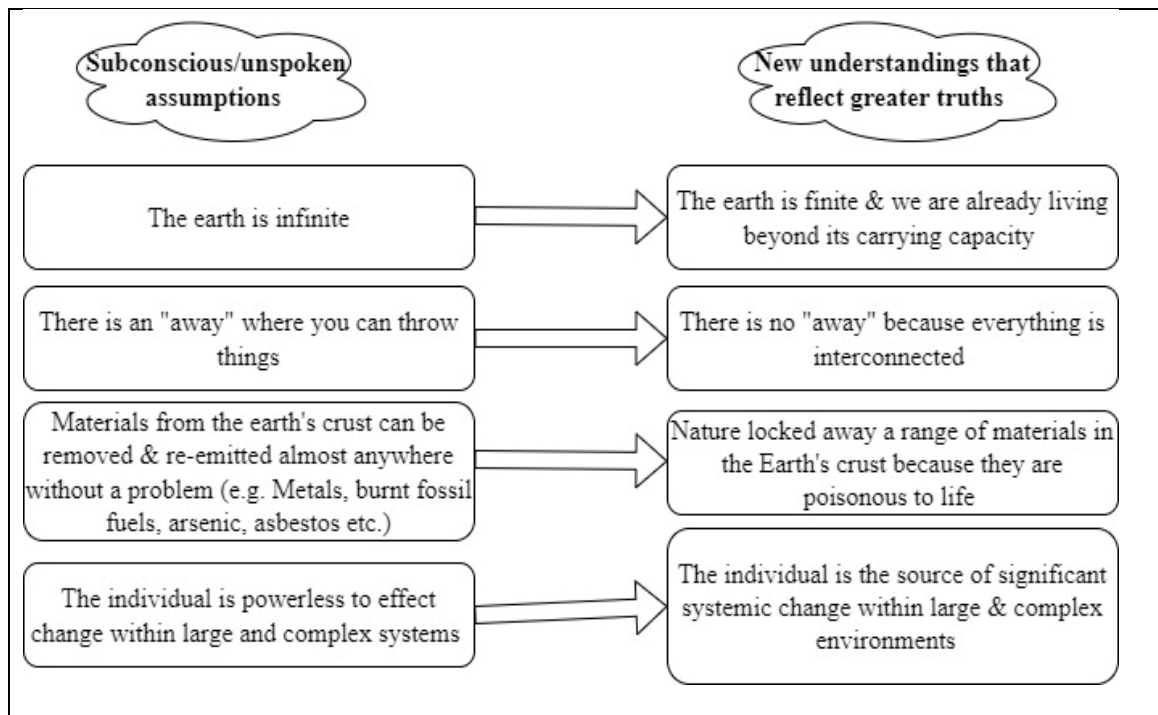
Thus, ES is focused on driving change or, at the very least, minimising the direct effects of climate change on the food and water crisis. Its impact on health includes an increase in heat-related deaths, problems related to greenhouse gases (e.g., respiratory disorders) and mental health disorders linked with natural disasters (Leal Filho et al., 2019b). Some researchers’ opinion that ES is concerned with

responsible and limiting use of natural resources, including environmental management and development, non-exploiting of natural resources for short-term goals and zero impact of organisational and human activities on the planet (Van Marrewijk and Werre 2003, Hansmann, Mieg and Frischknecht 2012). Sharp (2002) states that ES calls for understanding the whole planetary life support system, which entails a critical mental shift in the mindset of people everywhere (Figure 1). Moldan et al. (2012, p.6) established four criteria for ES, including:

- **Regeneration** (involving efficient use of renewable resources and their use not permitted to exceed their long-term rates of natural regeneration)
- **Substitutability** (involving efficient use of non-renewable resources and their use limited to levels which can be offset by substitution with renewable resources or other forms of capital),
- **Assimilation** (where the releases of hazardous or polluting substances into the environment does not exceed the assimilative capacity) and,
- **Avoiding** irreversibility.

Morelli (2011) further explains ES, arguing that (1) ES is foundational to ensure access to clean air, water, and clean and productive land. (2) Without a sustainable productive environment to provide services (e.g., food, fibre, genetic resources, biochemicals, natural medicines, pharmaceuticals, ornamental resources, fresh water, and all forms of energy resources) and regulate ecosystem processes (e.g. soil formation, photosynthesis, air quality regulation, water purification and waste treatment, pest regulation, disease regulation, climate regulation, water regulation, erosion regulation, pollination, natural hazard regulation, nutrient and water cycling etc.) it would be difficult or impossible to have a sustainable society. (3) Economic systems will fail without sustainable flow of material, energy, and environmental resources (Morelli 2011, p.4).

Figure 1: A critical mental shift in mindset is needed to realise ES



Source: Sharp (2002, p.134)

ES relates to whether the four sustainability capitals (natural, human, human-made and social) can be substituted to realise sustainable environmental development. Goodland (1995) offered three broad categorisations of ES degrees: weak, strong, and absurdly strong ES. Weak ES argues that the various forms of capital are substitutes within the boundaries of economic activity (Goodland 1995). In other words, natural capital can be substituted for different forms of capital (Pearce and Turner 1990, Rennings and Wiggering 1997, Neumayer 2011).

For instance, one form of capital can compensate for the degradation of another. Knight (2007) believes weak sustainability holds that economic and technological efficiencies, for example, can slow down environmental and social degradation. As noted by Goodland, 'weak sustainability is not a sufficient condition for ES as it clamours that society will be well off after converting all forms of capital into human-made capital or artefacts. This is problematic since human-made capital is finite and non-generative.

Strong sustainability argues that natural and human-made capital are not perfect substitutes. This perspective demands maintaining separate forms of capital (Goodland 1995). In other words, strong sustainability argues against substitutability, as natural capital cannot be substituted (Kuhlman and Farrington 2010). According to Dong, Lehmann, and Mackee (2010), strong sustainability emphasises that each dimension of capital should be maintained in its rights and not compensated for by investing in other forms, such as human-made capital.

Kuhlman and Farrington (2010) believe that the strong sustainability perspective holds that life exists by the grace of nature, which provides essential services to other forms of activities. Finally, absurdly strong ES or super strong sustainability opposes any form of depletion. This view argues for the complete eradication of non-renewable resources. It strongly emphasises that materials remain in the ground and that renewables are only to be harvested incrementally as an overmature portion of stock (Goodland 1995).

Mebratu (2000) established four main environmental ideologies with distinctive views shaping the epistemological foundations, thinking and solution frameworks suggested for tackling ES. These ideologies include Eco-Feminism, Eco-socialism, Eco Theology and Disciplinary version ideologies (Table 1). Mebratu argued that a significant flaw posed by these differing ideologies is that they present a cosmic (Mis) perception of the environment and foster a reductionist epistemological trap which limits the view of the natural interactions between the parts of ES (Mebratu 1998). The author identified what he believes are the primary conceptual flaws (misconceptions) within the environmental debate, including 1) The misconception that the terms 'environment' and 'ecology' mean the same thing and 2) The misunderstanding that the natural, economic, and social systems are independent.

Table 1: Summary of key environmental ideologies

Ideologies				
	Eco-Feminism	Eco-socialism	Eco-Theology	Disciplinary version,
Liberation Theory	Radical Feminism	Marxism	Liberation theology	<ul style="list-style-type: none"> • Environmental Economics (Economic Reductionism) • Ecological sustainability (Ecological Reductionism) • Social ecology (Social holism)
Source of environmental crisis	Male-centred (Androcentric) epistemology	Capitalism	Disrespect for divine providence	<ul style="list-style-type: none"> • Undervaluing of ecological goods • Human domination over nature • Domination of people and nature
Solution Epicentre	Gynocentric value hierarchy	Social egalitarianism	Spiritual revival	<ul style="list-style-type: none"> • Internalization of externalities • Reverence & respect for nature. • Co-evolution of nature & humanity
Leadership Centre (mechanisms for solutions)	Women's movement	Labour movement	Churches & congregations	<ul style="list-style-type: none"> • Price instruments • Bio-centric egalitarianism • Re-thinking of the social hierarchy
Summary of key arguments	<p>Points to the interconnections between feminist & ecological concerns</p> <p>Argues overpopulation & the destruction. Natural resources are the two most immediate threats to our survival.</p> <p>Believes there is a critical correlation. Between the domination of nature & the domination of women</p> <p>Thus, the only way would be women's destruction of "The male system," which is the source of the threats.</p>	<p>Believes that sustainable, ecologically sound capitalist dev. is a contradiction that can never be realised.</p> <p>It rejects bioethics & mystification of nature & any anti-humanistic sentiment but does attach importance to human spirituality.</p> <p>It argues that humans are not a pollutant or "guilty" of hubris, greed, aggression, over-competitiveness, or other savageries.</p> <p>They believe humans are not like other animals, but neither is non-human nature external to society. The nature that we perceive is socially perceived & produced.</p>	<p>Eco-theologians reinterpret old traditions by finding & stressing passages in classic texts to help us face the current crisis.</p> <p>The question is whether & in what ways religious energies can be connected to secular environmental philosophy & ecological activism.</p> <p>It is based fundamentally on the belief that humanity has ignored the wealth of ecologically relevant material in the religious tradition.</p> <p>Argues that "the primary source of our predicament is simply, human greed, & the solution lies in a renewed commitment to humility, to the virtue of detachment & to the central religious posture of gratitude by which we accept the</p>	<p>The economist's conception argues that the environment is frequently undervalued because it is often used free of charge. Therefore, it tends to be overused and degraded.</p> <p>It would be highly protected if the environment is correctly valued in economic decision-making.</p> <p>Resolve environmental crisis requires first determining the price of environmental commodities through different valuation techniques (e.g., supply and demand curves) and then imputing identified prices into real-life prices such as 1) changing the prices of existing market activities by taxing environmental damage, 2) subsidising environmental improvement, 3) creating markets for environmental goods & 4) by issuing tradable permits.</p> <p>Ecologists believe that nature, left alone, is a self-organising system that changes, responds, and evolves through a highly variable set of quasi-stable conditions.</p> <p>The two domains of the ecologist disciplinary version exist, namely, Shallow ecology & deep ecology.</p>

		<p>Alienation from nature is separation from a part of us. We are to re-appropriate collective control over our relationship with nature via common ownership of the means of production because production is at the centre of our relationship with nature, though not the whole relationship.</p> <p>We should not dominate or exploit nature in the sense of trying to transcend natural limits & laws. Still, we should collectively 'dominate' (i.e., plan and control) our relationship with it for the collective good.</p>	<p>natural world as God's gift & treat it accordingly.</p> <p>Insists that if we allow our lives to be shaped by genuine religious virtue, our relation to nature will attain the appropriate balance & we may avert the disaster that looms before us</p>	<p>Shallow ecology refers to treating environmental problems without tackling their underlying causes or confronting the philosophical assumptions that underlie current political and economic thinking.</p> <p>Deep ecology believes that reforms of social & economic systems are not a viable solution to offset the accelerating destruction of the environment. Instead, addressing the root of the crisis, i.e., Western culture & cultural values legitimising the domination of nature, is vital. This version proposes to replace anthropocentric hierarchies with biocentric egalitarianism, where humanity is viewed as no more, but also no less, important than all other things on earth.</p>
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Source: Mebratu (2000, p.32-37)

2.2. Environmental Sustainability and Its Adoption in Higher Education Institutions

ES can be studied in different dimensions of higher education, including teaching, research, campus operations, and outreach (Leal Filho, 2011; Thomas and Cornuel, 2012; Roos et al., 2020). Universities are the hub of activity for innovation and ideas, which is ideal for creating broader societal awareness and instilling in the minds of future leaders how ES can be integrated into day-to-day life (Jain and Pant 2010). To survive and maintain legitimacy in the eyes of stakeholders, universities must transform their operating models from 'business as usual' and consider stakeholders' demands that environmental considerations become integral to institutional activities and practices (Dillard, Rigsby and Goodman 2004).

According to Amaral et al. (2020), universities have four primary responsibilities in sustainability. 1)

To Prepare future leaders and citizens to be more conscious and active in disseminating sustainable

principles (such as ES). 2) As owners of physical structures that consume energy and other resources, universities can implement actions to decrease costs and impacts associated with campus operations. 3) As administrative structures, universities must manage people from diverse socio-cultural backgrounds and seek an engagement between staff, academia, and the community (to tackle environmental challenges). 4) universities have the social responsibility of acting by example (in tackling ES issues) (Amaral et al. 2020, p.2),

According to the United Nations Principles of Responsible Management (UNPRME) and Globally Responsible Leadership Initiative (GRLI), universities have three significant roles to play in fostering the global sustainability agenda including:

1. Educational role:

- Develop students' capabilities to be future (environmental) sustainable value generators for business and society (GRLI 2022).
- Incorporate the values of global environmental responsibility into academic activities and curricula (UNPRME 2022).
- Create educational frameworks, materials, processes, and environments that enable practical learning experiences for responsible (environmental) leadership (GRLI 2022).
- Pioneer and prototype new methods for (ES) learning and community building (UNPRME 2022)

2. Research role:

- Engage in conceptual and empirical research that advances our understanding of corporations' role, dynamics, and impact in creating sustainable social, environmental, and economic value (UNPRME 2022).

3. Partnership role:

- Interact and partner with managers of business corporations to extend knowledge of challenges in meeting social and environmental responsibilities.
- To explore jointly practical approaches to meeting these challenges (GRLI 2022)

- Facilitate and support dialogue and debate among educators, students, business, government, consumers, media, civil society organisations and other interested groups and stakeholders on critical issues relating to the realisation of the UN Sustainable Development Goals (UNPRME 2022).

The movement towards sustainability in higher education institutions began in the late 19th century following the 1972 Stockholm conference on the human environment (Cotton et al., 2009; Ragazzi and Ghidini, 2017). Universities globally began action towards sustainability following various declarations outlining guidance for fostering environmental, social, and economic sustainability (Leal Filho 2011). For example, the 1990 Talloires Declaration emerged as the first international declaration outlining descriptions for sustainability in higher education institutions (Wright 2002, Hoover and Harder 2015). Many declarations have since come into existence after the Talloires Declaration. Alghamdi, Heijer and Jonge (2017) have compiled a list of these sustainability treaties. In the UK, the sustainability movement began for universities in 1993 (Cotton et al. 2009), when universities began implementing sustainability, concentrating on reducing environmental impacts (Alghamdi, Heijer and Jonge 2017).

This research pays attention to campus operations since campus sustainability is the primary way universities show their support for ES (Townsend and Barrett 2015). Universities can implement ES by seeking to manage their campuses and activities in ways that promote the planet's long-term health (Savelyeva and McKenna 2011). This is known as 'campus greening' (Townsend and Barrett 2015) or sustainable university (Velazquez et al., 2006; Lozano and Garcia 2020). However, the term green campus is adopted as the preferred terminology as this strongly emphasises the ecological dimension of sustainability.

The green campus has many interpretations, which range from general to specific (Moganadas, Corral-Verdugo and Ramanathan, 2013). A green campus can be defined as "*infusing environmentally friendly practices in all dimensions of university operations and infrastructure*" (Savelyeva and McKenna 2011, p.56). Also, it has been defined as; "*A healthy campus environment, with a prosperous economy*

through energy and resource conservation, waste reduction and an effective environmental management, and promotes equity and social justice its affairs and exports these values at the community, national and global levels” (Alshuwaikhat and Abubakar 2008 p.1778). However, in this research, green campus means implementing ES principles on a university campus in ways that simultaneously yield economic, social, and ecological outcomes.

Despite ES becoming a mainstream agenda in UK universities for over twenty-five years now, existing evidence suggests that a profound transformation of culture has yet to take place, whereby a university community and social environment holds a truly alternative culture that respects the causes of the socio-environmental crisis (Dahle and Neumayer 2001, Fisher 2003, Hopkinson, Hughes, and Layer 2008, Grecu and Ipina 2014, and Lozano et al. 2015, Sule and Greig 2017, Lozano and Garcia 2020). A truly green campus in the UK higher education sector is still challenging, and practice is yet to be attained.

For example, the UK Government, in a bid to enforce compliance on universities, launched various national-level policies such as the Higher Education Funding Council for England (HEFCE) requirement that capital funding be linked to carbon management (Howlett, Ferreira and Blomfield 2016, Ross, and Jones 2016). This agency has a directive from the government to withhold 40% of financing if a university does not produce a credible ES plan (Broadbent, Laughlin, and Alwani-Starr, 2010). In the more recent decade, international accreditation bodies such as the European Foundation for Management Development (EFMD), the Association to Advance Collegiate School of Business (AACSB) and the Aspen Institute’s Business and Society Program include ES as a core criterion for institutional accreditation (Yang et al., 2021).

Thus, although ES has been on the university agenda since the 1992 Rio Earth Summit, and despite many international and national directives and strategies offering implementation suggestions, progress in trying to reduce environmental impacts on campuses is still slow (Leal Filho et al. 2019, Jnr et al. 2019). Growing pressures emanate from various groups, including government and non-governmental stakeholders, demanding more significant integration of campus green practices (JNR 2019). Leal Filho

et al. (2019) report that ES incorporation into universities' operations, activities and practices is still fragmented. According to Amaral et al. (2020), even when the implementation has taken place, there remains a substantial number of failures in sustaining implemented sustainability initiatives on university campuses. Thus, a shift is needed in organisational culture to fully deliver on ES practices (Leal Filho et al. 2019).

A university can adopt formal and informal strategies to operationalise ES on its campus (Price 2005, Von Oelreich 2004, Clarke and Kouri 2009). Formally, a university can choose to adopt strategies elucidated within legitimisation measures such as ISO 14001; EMAS (Eco-Management and Audit Scheme); Auditing Instrument for Sustainability in Higher Education (AISHE); Sustainable School Models' etc. (Alghamdi, den Heijer and de Jonge 2017). Within this, a university will seek certification for formal implementation efforts (Clarke and Kouri 2009).

Informally, a university may choose to perform suggestions from certified frameworks without seeking or obtaining certifications for these actions (Clarke and Kouri 2009). For example, Savely, Carson and Delclos's (2007) survey study investigating campus greening in 275 United States universities revealed that though universities are knowledgeable about environmental management certifications, only a few campuses formally obtained this accreditation. The study by Clarke and Kouri (2009) also found that European, US and Canadian universities mostly implemented environmental management on campus informally and voluntarily, except for Sweden, where the law mandates the compulsory implementation of environmental management.

Various proposed models suggest strategies or initiatives universities can adopt to reduce their environmental impacts (Velazquez et al., 2006; Alshuwaikhat and Abubakar, 2008). Velazquez et al. (2006) revealed that sustainable university research has revealed nine green initiatives that promote ES in higher education institutions. These include energy efficiency, water efficiency, transportation and commuting, non-hazardous waste management, pest management, global climate, hazardous waste management, dining services, and environmental procurement. Alshuwaikhat and Abubakar (2008)

proposed three integrated strategies for a green campus: 1) Environmental Management System (EMS) Implementation, 2) Public Participation and Social Responsibility, and 3) Sustainability Teaching and Research.

Choi et al. (2017) studied ecological campus strategies at Portland University. They found twelve multilateral categories of campus sustainability: administration, energy, water, climate action, green buildings, green purchasing, waste reduction and recycling, food and dining services, transportation, land use, action, education, and student activity. Also, Ribeiro et al. (2017) analysed leading sustainability practices on campus. They identified six campus sustainability areas from their case-study research in Brazil: renewable energy, energy efficiency, hydro efficiency, transport efficiency, waste management, and education.

In addition, Marans et al. (2015) and Sinnett et al. (2017) uncovered a socio-cultural aspect of ES on campus. These can include cultural initiatives such as a) bringing nature into the built environment, including planting trees on campus, creating parks, green spaces and forests (Sinnett et al., 2017); b) green infrastructures (e.g. community gardens and greenery) (Marans, Callewaert and Shriberg 2015, Sinnett, et al., 2017); c), Psychological and mental health services such as self-esteem, well-being, life-satisfaction, restoration and relaxation, mental health and counselling support services (Sinnett et al., 2017); and d) improve physical activity and physical health through; diet and nutrition on campus, green spaces for walking, running and cycling.

Also, campuses can become emergency relief centres for natural disasters. For example, Kantabutra and Saratun (2013) found from an investigation in Thailand that the layout of a campus served the responsible purpose of meeting community social and environmental needs during a flood disaster, where the campus was used as a shelter and centre for dispensing necessities to flood victims in the local community.

While a university can implement any or multiple ES initiatives mentioned already, some scholars argue that some initiatives can bring the most value in realising environmentally sustainable outcomes. For

example, Ribeiro et al. (2017) reported that initiatives that bring the most value to campus greening are energy, water use, transport, waste, and environmental education. In contrast, zero paper programmes have the lowest value. Choi et al. (2017) found that focusing on educating staff and students positively affects green campus projects.

These research findings show that ES can be operationalised under six broad categories of strategies, as shown in Table 2 (Berchin et al., 2017). Thus, to be considered truly environmentally sustainable, Scottish universities will have to adopt green campus strategies that address 1) Waste Management and recycling (reduce, reuse, recycle); 2) Water Management (avoid, reduce, recycle and capture); 3) Energy Management (Avoid, reduce, produce); 4) Sustainable Campus which includes, Purchasing (paper, green IT, energy-efficient products and equipment) and Transport (private vehicles, bicycles, public transport, university fleet, air miles); 5) Cooperative and Creative Environments and 6) Shared Learning.

Table 2: Summary of strategies used to promote ES in Higher Education Institutions

Definitions and Examples		
<p style="text-align: center;"><u>Waste reduction and recycling.</u></p> <p>Definition: Higher education institutions reduce the amount of waste produced by implementing recycling programs to cut their environmental impact and stimulate the replication of sustainable practices beyond the institution.</p> <p>Examples: Plan for reducing the number of printed papers; Plan for selective waste collection; Plan to make people aware of the importance of waste management; Plan to increase activities and e-learning, aiming to promote sustainable waste management</p>	<p style="text-align: center;"><u>Water management</u></p> <p>Definition: higher education institutions might implement sustainable management of water, reducing its water consumption and its environmental impact</p> <p>Examples: Plan to store and reuse rainwater; Installation of more efficient mechanisms to reduce water consumption and avoid waste; Plan to make people aware of the importance of the sustainable use of water</p>	<p style="text-align: center;"><u>Energy management</u></p> <p>Definition: higher education institutions might implement energy efficiency to reduce their energy consumption, increase their renewable energy share and reduce their environmental impacts</p> <p>Examples: Plan to improve energy efficiency in all buildings and campuses; Plan to generate renewable energy; Plan to make people aware of the importance of energy efficiency and renewable energies</p>
<p style="text-align: center;"><u>Sustainable Campus</u></p> <p>Definition: Higher education institutions with sustainable campuses are models for replicating sustainable practices, integrating people (e.g., students, professors, and other staff) in a sustainable environment, being socially inclusive, economically viable, and environmentally responsible, and reducing the institution's environmental impacts.</p> <p>Examples: Plan for a sustainable transport system with lower environmental impact (e.g., bicycles, carpooling, and public transportation); Plan to implement green roofs and green walls; Plan to build more efficient and sustainable buildings, also remodelling existing buildings</p>	<p style="text-align: center;"><u>Cooperative and creative environments:</u></p> <p>Definition: Aesthetic interventions in institutions can contribute to developing more creative and cooperative environments, promote changes in institutional routines and culture, and stimulate conscious learning.</p> <p>Examples: Plan to promote socio-cultural inclusion; Plan to promote aesthetics reforms and to build sustainable environments that immerse students in a sustainable atmosphere; Plan for training and to promote awareness of professors, students and other institutional staff about environmental issues and how to change their daily processes; Organisation of seminars and conferences to cooperate and encourage awareness; Plan to implement interdisciplinary and multidisciplinary learning systems and debates</p>	<p style="text-align: center;"><u>Shared learning</u></p> <p>Definition: Higher education institutions might share knowledge, research, methods, and experiences to disseminate and promote sustainable practices, stimulate environmental awareness among the community, students, professors, and other staff, and foster shared learning and cooperation with stakeholders.</p> <p>Examples: Plan to cooperate with other institutions; Plan to create online platforms to collaborate and share knowledge; Plan to promote socio-environmental awareness to the community, the students, the professors, and other staff</p>

Source: Berchin et al., (2017, p.1021-1022)

2.3. The Scottish Higher Education Context and the State of ES Adoption and Implementation on Campus

Scotland's robust network of universities plays a pivotal role in the nation's economic and social development. The fifteen institutions, catering to a combined student body of over 221,500 (Higher Education Statistics Agency [HESA], 2018), represent a significant engine for growth and progress. A 2019 report by Universities Scotland highlights the substantial economic impact of these institutions, estimating that Scottish universities generated 144,549 jobs, contributing £1.5 billion in income and a surplus of £7.1 million to the UK economy.

The geographical distribution of universities across Scotland, as depicted in Table 3, ensures a broad reach and accessibility of higher education opportunities. These institutions boast a rich tapestry of history, ranging from the venerable University of St Andrews, founded in 1413, to the more recent establishments. For organisational purposes, Scottish universities are typically categorised into three distinct groups:

- **Ancient Universities:** These institutions were established before 1800 and include St Andrews, the University of Glasgow, the University of Aberdeen, and the University of Edinburgh.
- **Modern Universities:** Formerly known as polytechnics or central institutions, these universities achieved university status in 1992. Examples include Glasgow Caledonian University and Edinburgh Napier University.
- **Chartered Universities:** This category encompasses universities established by a royal charter. Heriot-Watt University is a prime example of a chartered university in Scotland.

By fostering a highly skilled workforce, advancing research and development, and promoting innovation and entrepreneurship, Scottish universities serve as a cornerstone for Scotland's economic and social prosperity.

Table 3: Scottish Universities profile

Region	Universities	Age @2020	Grouping	World Ranking (2019)	UK National Ranking (2019)	scottish Ranking (2019)
Eastern Scotland	University of Edinburgh	438	Ancient	29	6	1
	Edinburgh Napier University	56	Modern	601-800	65	10
	University of Sterling	53	Chartered	351-400	43	7
	Heriot-Watt University	54	Chartered	301-350	40	6
	University of Dundee	139	Chartered	201-250	30	5
	University of Abertay Dundee	26	Modern	-	99	-
	Queen Margaret University	145	Modern	-	75	-
	University of St Andrews	607	Ancient	165	24	4
South-Western Scotland	University of Glasgow	563	Ancient	93	11	2
	Glasgow Caledonian University	27	Modern	601-800	65	10
	The University of the West of Scotland	28	Modern	401-500	48	8
	University of Strathclyde	56	Chartered	401-500	48	8
North-Eastern Scotland	University of Aberdeen	525	Ancient	158	22	3
	The Robert Gordon University	28	Modern	801-1000	18	12
Highlands and Islands	University of the Highlands and Islands	9	Modern	-	-	-

Source: Compiled by the Researcher from Audit Scotland (2016), The Complete University Guide (2020), and World University Ranking (2019)

Beyond their well-documented economic impact, Scottish universities hold a position of remarkable prestige within the global academic landscape. Universities Scotland's (2019) report highlights their competitive edge, with Scotland boasting more universities ranked in the top 200 worldwide than the rest of the UK combined. Three institutions, the University of Edinburgh, the University of Glasgow, and the University of St Andrews, command positions within the top 100, while two others, the University of Aberdeen and the University of Dundee, fall within the top 200 (Audit Scotland, 2016; HESA, 2018). This translates to an impressive 8 out of 15 Scottish universities ranking among the world's top 500 (Audit Scotland, 2016).

The Complete University Guide reinforces this national strength by ranking UK universities based on four key areas: entry standards, student satisfaction, research quality, and graduate prospects. Here, too, Scottish universities perform admirably, with St Andrews claiming the highest national ranking (5th) and the University of the West of Scotland occupying the lowest spot (114th). These results position

Scottish universities favourably against their counterparts in Ireland and Wales (The Complete University Guide, 2019). This strong reputation undoubtedly strengthens Scotland's potential to contribute meaningfully to the global agenda for ES.

However, like any organisation, Scottish universities are not immune to external influences. Audit Scotland (2016) and Universities Scotland (2019) identify three key vulnerability areas: government spending fluctuations, immigration policy decisions, and global market shifts. Additionally, governing bodies such as the Scottish and UK governments, corporate entities, charities and foundations, international governments, and even other universities exert influence (Audit Scotland, 2016). Like corporations, Scottish universities face challenges of diminishing human and financial resources, including shrinking budgets and declining student recruitment. These demanding conditions necessitate a strategic rethinking of business models to ensure sustainable operations (cost savings) and enhance reputation – both crucial for a competitive edge in the contemporary climate.

The global landscape of green campus initiatives paints a diverse picture. Universities in some regions, such as Australia, Canada, and Europe, have emerged as leaders in adopting best practices (Too & Bajracharya, 2015; Clarke & Kouri, 2009; Vaughter et al., 2016; Sipra, Tappeser & Meyer, 2013; Hoque, Clarke, & Sultana, 2017; Kang & Xu, 2018). In contrast, progress in other areas has been slower, as evidenced in China, Hong Kong, India, Pakistan, New Guinea, and Kenya (Lo, 2015; Hoque et al., 2017; Langat & Kawasira, 2016; Tairu, 2018). Some countries, like Bangladesh and Nigeria, reportedly lack green campus initiatives altogether (Hoque et al., 2017; Aderogba, 2017).

The UK presents a more encouraging picture, with universities like the University of Glamorgan (Wales), Plymouth University (England), and the University of Leeds (England) showcasing significant transformations towards green campuses (Sipra et al., 2013; Hoque et al., 2017). Evidence suggests a focus on green transportation initiatives, with universities prioritising measures such as promoting walking and cycling, providing dedicated infrastructure (pavements, public spaces, safe crossings, cycling paths), car-sharing schemes, secure parking facilities, and shower rooms for cyclists (Barnes &

Jerman, 2002; Corcoran et al., 2002; Viebahn, 2002; Shriberg, 2002; Sharp, 2002; Cortese, 2003; Desha & Hargroves, 2011; Isa, 2017).

The government took a decisive step towards environmental action in Scotland by declaring a global climate emergency in April 2019. This move, coupled with the existing Climate Change (Scotland) Act 2009, legally obliges universities and other public bodies to actively contribute to reducing greenhouse gas emission targets, 42% by 2020 and 80% by 2050, compared to 1990 baseline levels (Universities Scotland, 2019).

The Act further mandates that all Scottish organisations assess and improve the energy performance of large, non-domestic buildings before selling or leasing them (Heriot-Watt University, 2020). This legislative framework has spurred widespread adoption of ES initiatives across Scottish universities. By 2016, all Scottish universities and colleges had signed the Universities and Colleges Climate Commitment for Scotland (UCCfS), a testament to their commitment to supporting the government's ambitious emissions reduction targets (Jones, 2012). Furthermore, each university established its own personalised ES targets in alignment with UCCfS (Table 4). It is essential to acknowledge, however, that some institutional sustainability policy documents appeared outdated at the time of this research, suggesting a need for improved data accessibility and transparency.

Table 4: Environmental Sustainability targets of Scottish Universities

University	Carbon emission targets	Waste Targets	Energy Targets	Water Targets	Travel Targets
University of Edinburgh	-To become zero carbon by 2040. To achieve this, the university will reduce CO2 emission per £million turnovers by 50% from a 2007/08 baseline.	- To end landfilling of biodegradable municipal waste by January 2021 and reduce the percentage of all waste sent to landfills to 5% by 2025. - By 2025, food waste will be reduced by 33%, and 70% of all waste will be recycled. - By 2035, the aim is to deliver emissions reductions through a circular economy approach.	- To improve relative energy efficiency by 20% against the 1990 base year – in line with UK targets - To cut absolute CO2 emissions by 40% against the 1990 base year. - To invest at least 5% of the Energy Budget – and will re-invest cumulative savings achieved up to a maximum of 10% of Energy spent.	To reduce water consumption on campus by a further 20% in the year 2000 with the assistance of Scottish Water.	-
Edinburgh Napier University	To become net-zero carbon by 2030.	-	-To save £3.2m and 16,521.44t CO2e by reducing electricity and gas use.	-	-
University of Sterling	To reduce CO2 emission by 40% by 2021 based on the 2007/08 baseline of over 16,651 tonnes.	-To reduce the level of residual waste in landfills to 10% by December 2016 -To reduce the overall volume of waste produced to < 900 tonnes per annum by December 2016.	-	To reduce the consumption of bottled water by staff and students, the university provides free water fountains throughout the campus. Bottled water coolers have been replaced with mains-fed water where possible.	-
Heriot-Watt University	15% target reduction in absolute emissions between 2014/15 and 2019/20, an equivalent of 3.2% reduction annually.	-	To reduce energy consumption by 10% between 2014/15 and 2019/20.	-	-
University of Dundee	To reduce CO2 emission by 20% by 2015/16, using the year 2008/09 as a baseline and to achieve a 2% reduction year on year from 2010/11.	-From 2008, recycling has increased by 5% per annum. -To recycle all food waste by the end of 2013. - Use 100% recycled paper for all normal printing purposes. - Reduce paper purchases by 10% by the end of July 2013.	To reduce the energy usage of the University by 10% by 2015/16 and 2% per annum year on year.	To reduce water usage by 2% per annum.	By 2020, the University seek: -For less than one-third of staff commute by sole occupancy car (down from 39% in 2014). -For less than one-tenth of students commute by sole occupancy car (down from 12% in 2014).

					<p>-For Business Travel and Operational Transport: -To reduce the number of business miles driven by staff by 10% in comparison with a 2015 baseline. -To reduce carbon emissions from business and operational transport by 33% in comparison with a 2015 baseline.</p>
University	Carbon Emission Targets	Waste Targets	Energy Targets	Water Targets	Travel Targets
University of Abertay Dundee	To achieve: -at least a 30% reduction in overall carbon emissions by the end of the calendar year 2016 (based on the baseline year of 2008). This equates to a reduction of around 1,200 tonnes CO ₂ and a cost saving of around £775,000 over the end of 2016.	To increase % of waste to recycling by 20% of 2012 levels by July 2015.	-	Reduce water consumption by 50% from 2004.	-To increase the car share scheme uptake by 15% by December 2015. - Increase cycle equipment storage provision by 20 places by December 2015.
Queen Margaret University	To reduce total carbon emissions by 12% between 2017-2022.	Educate to increase recycling rates.	Execute large and small projects to reduce emissions.	To improve data collection and reduce water usage.	QMU has committed to reducing its carbon footprint by adopting the UCCCfS and producing a Climate Change Action Plan (CCAP).
University of St Andrews	To be Net Zero by 2035	The University aims to produce zero waste in landfill by 2022.	To power down the University estate by 60% by reducing our energy consumption and power up the remaining 40% with clean energy through renewable technologies before 2035.	To upgrade 160 teaching and residential buildings to become highly water-efficient before 2035.	-
University of Glasgow	We aim to reduce the University's footprint by 20% concerning the 15/16 figure, with a target of 55,500 tonnes CO ₂ e per annum by 20/21.	Reduce waste to landfill and maximise "dry mixed recycling" segregation to achieve a 50% recycling rate by 2020.	Our mission is to deliver 6000 tonnes of CO ₂ in emissions savings per annum from improved energy management.	-	-Reduce the proportion of staff travelling by car alone to the Gilmorehill Campus to 15% by 2025. -Reduce the proportion of students travelling alone by car to university

					premises on all campuses to 5% by 2025, etc.
Glasgow Caledonian university	Reduce CO2 emission by 20% of 2008/09 baseline (10,952 tonnes) by 2014.	-To further reduce the amount of waste produced at the University (from the 454 tonnes generated in 2015-2016). - Increase the proportion of waste recycled (from 17% in 2015-2016). - Lower waste management costs (from approximately £54,000 in 2015-2016), etc.	Reduce the energy consumption of the University by 10% by 2011.	Reduce the water consumption of the University by 5% by 2011.	To deliver continual reduction, at least until 2020, of greenhouse gas emissions and costs associated with travel to and from GCU.
The University of the West of Scotland	To reduce carbon emissions by 42% by 2020. The interim target is set at a 20% reduction by 2014 based on a baseline of 11,499 tonnes of CO2.	Recycle or reuse 40% of our waste. To be achieved by 2019/20.	-	-	Reduce grey fleet business travel carbon emissions by 10%. To be achieved by 2019/20.
University of Strathclyde	At the end of the target period in August 2020, the University aims to achieve an absolute emission level of 21,623 tonnes CO2e by the end of the 2019/2020 academic year. This equates to a 28% reduction from the 2009/10 baseline.	A target is to remove single-use plastics from catering outlets by the end of 2020. To introduce from 2018/19 Vegware and compostable catering supplies and initiatives around keep-cups to phase out the use of non-compostables. The university is also installing more drinking water fountains to help with this specific aim.	-	The university's water uses in its baseline year for carbon reporting, 2009/10, was 307 million litres. The five years following this saw a consistent reduction to a minimum of 156 million litres in 2014/15. The goal is to reduce water consumption to 2014/15 levels by 2022.	The university's strategic plan from 2015 to 2020 commits the University to a 25% reduction in carbon emissions by 2020 against a baseline figure of 30,000 tonnes. -Reduce staff single occupancy vehicle (SOV) use from 19% to <15% by 2020. -Reduce student single occupancy vehicle (SOV) use from 6% to <4% by 2020. -Increase covered cycle parking capacity from 190 to 500 spaces by 2020.
University of Aberdeen	To achieve net-zero carbon emissions before 2040.	-Improve recycling and reuse rates annually. -70% recycling by 2025 with a maximum of 5% to landfill	Work towards carbon emissions targets established in Carbon Management Plan 2016-2021 -Increase the use of energy efficiency technologies to reduce energy consumption.	-Reduce water consumption by 2% year on year. -Embed measures to reduce water use in all new and refurbishment projects.	-Reduce carbon emissions from commuting by 25% from 2016 levels before 2022. -Have most commuter journeys of less than 5 miles made via active travel by 2022.

			<ul style="list-style-type: none"> -Raise staff awareness of the need to reduce energy consumption. -Heat occupied areas to a maximum of 20°C in the heating season. -Investigate the installation of basic energy efficiency, renewable and low-carbon technologies on and off-site. <p>Implement projects where appropriate with the aim of reducing carbon emissions arising from energy use.</p>		<ul style="list-style-type: none"> -Monitor business travel and establish reduction targets for emissions that continue to increase. -Reduce University vehicle emissions by 20% from 2016 levels before 2022.
The Robert Gordon University	Further, reduce emissions by over 50% by 2030 and achieve net zero by 2045 (or earlier).	<ul style="list-style-type: none"> -supports the Scottish Government’s target to reduce waste and increase recycling by 2025. -In the past four years, total waste has been reduced by over 50%, and the amount of waste sent to landfills has been reduced by 91% to 25 tonnes. 	Use 100% green electricity across the campus by 2025	working with Business Stream (water provider) to install Smart Water Meters. In 2019/20-year, RGU consumed and disposed of around 45 million litres of water, which contributed to almost 46 tonnes of CO2 emissions	<ul style="list-style-type: none"> -Incentivise the use of car-sharing and low-carbon transport by 2025. -Improve uptake in the use of active travel (walking & cycling) by 2025. -Reduce the need and impact of business travel by 2025.
University of the Highlands and Islands	To deliver a 10% reduction in the university's CO2 emission by 2015	-	-	-	-

Source: Compiled by the Researcher from Individual Universities Websites and Sustainable Scotland Network (2021)

While Scottish universities have demonstrably committed to ES through policy and pledges, some evidence suggests a gap between these commitments and their actual environmental performance. This discrepancy can be partially attributed to the logistical complexities of managing sprawling campuses. HESA data (2018) reveals that only four 15 Scottish universities operate from a single campus site.

In contrast, over a third (33.3%) manage well over one hundred buildings dispersed across various locations. The University of Edinburgh exemplifies this, with 458 buildings spread across seven sites, while the University of Glasgow boasts a similarly extensive footprint of 319 buildings across thirteen locations. The multifaceted activities undertaken within these numerous buildings undoubtedly generate significant environmental impacts, primarily through high energy consumption, waste generation, and associated carbon emissions. Addressing these challenges necessitates a multifaceted approach that considers policy pronouncements and the practical realities of managing a geographically dispersed university infrastructure.

Table 5: Scottish Universities buildings & spaces statistics

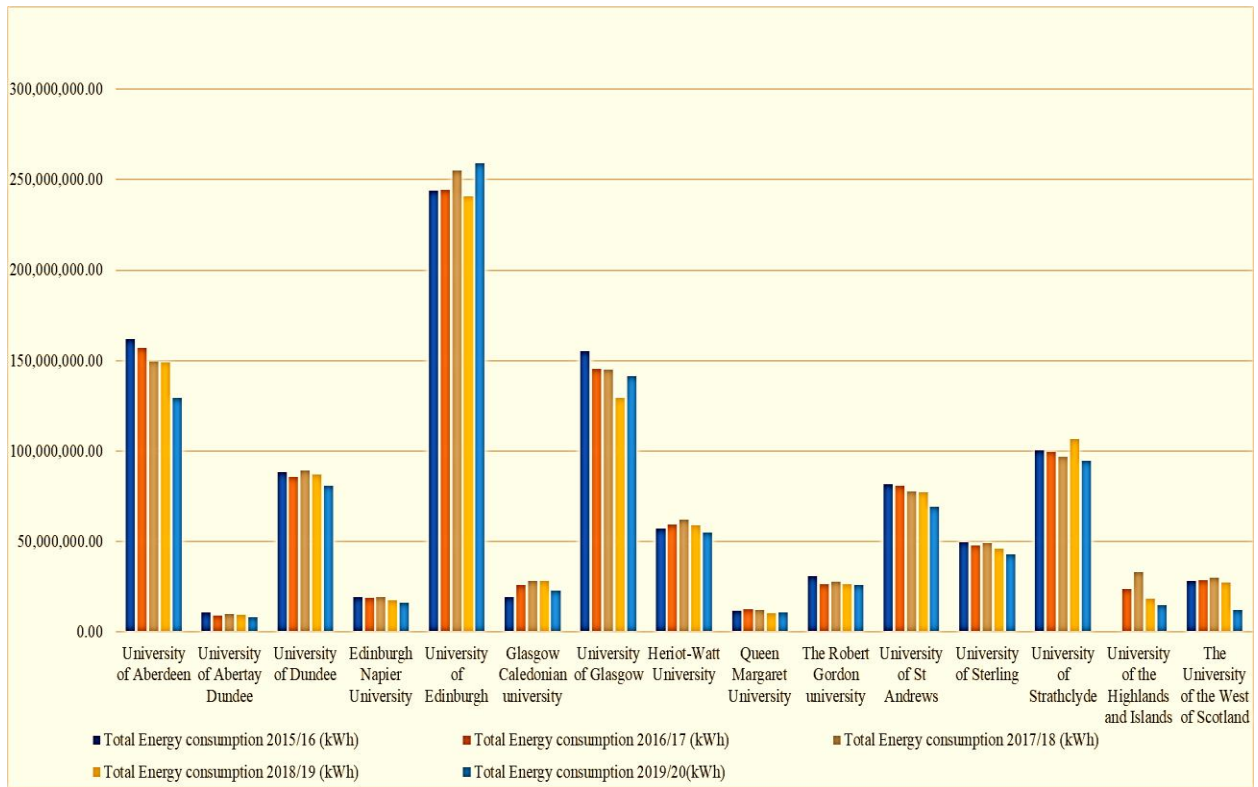
Buildings & Spaces		
University	Total sites	Total Buildings
University of Aberdeen	4	116
University of Abertay Dundee	1	10
University of Dundee	3	79
Edinburgh Napier University	11	17
University of Edinburgh	7	458
Glasgow Caledonian university	2	23
University of Glasgow	18	319
Heriot-Watt University	4	90
Queen Margaret University	1	14
The Robert Gordon University	2	28
University of St Andrews	1	152
University of Sterling	1	43
University of Strathclyde	6	54
University of the Highlands and Islands	63	117
The University of the West of Scotland	6	57

Source: HESA (2022)

An examination of Higher Education Statistics Agency (HESA) data for the academic years 2015/16 to 2019/20 paints a mixed picture regarding energy consumption across Scottish universities (Figure 2). While all but two institutions reported reductions in energy use during this period, the degree of improvement varied considerably. The University of the West of Scotland stands out as a leader in

energy conservation, achieving a remarkable 57% reduction in energy consumption between 2015/16 and 2019/20. Twelve other universities exhibited progress, albeit with more modest cuts of less than 25% over the same timeframe. However, two universities show a cause for concern, with energy consumption rising by 19% and 6%, respectively.

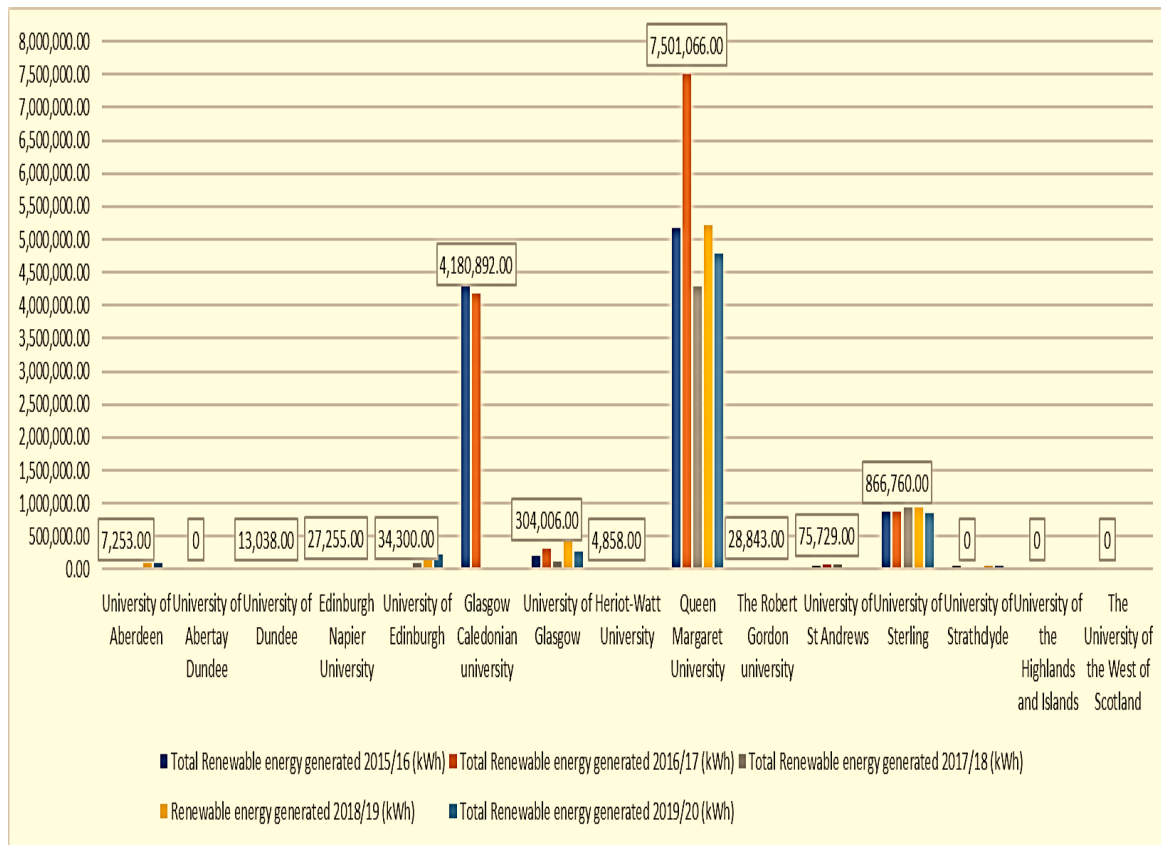
Figure 2: Scottish Universities’ Energy Consumption between 2015/16-2019/20



Source: HESA (2022)

Examining HESA data for renewable energy generation between 2015/16 and 2019/20 (Figure 3) reveals a significant disparity among Scottish universities (HESA, 2018). A concerning 20% of institutions reported no renewable energy production over these five years. Furthermore, 60% of universities generated less than 1% of their energy consumption from renewable sources. These figures indicate a clear need for broader adoption of renewable energy solutions across Scottish universities. However, Queen Margaret University stands out as a leader in on-site renewable energy generation, producing 46.69% of its consumed energy from renewable sources. Glasgow Caledonian University also demonstrates a commitment to sustainability by generating 6.89% of its energy needs through renewable means.

Figure 3: Scottish Universities Renewable Energy Generation 2016/17 to 2019/20



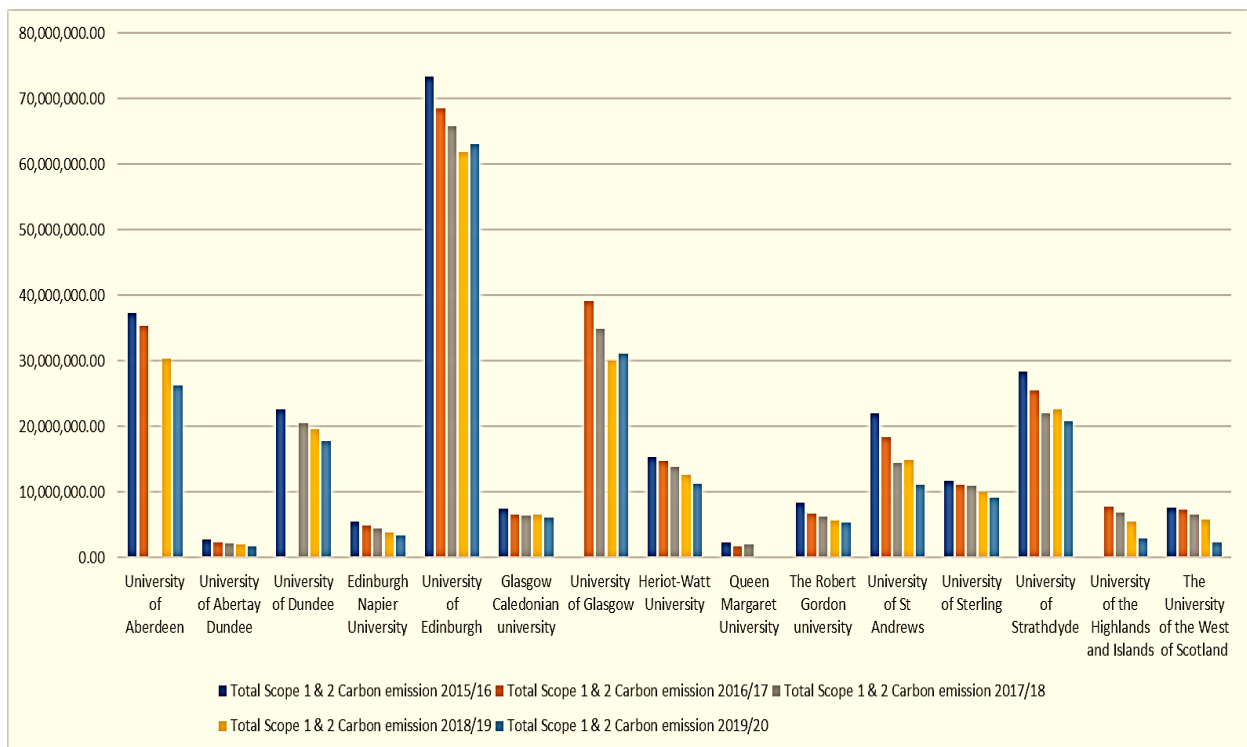
Source: HESA (2022)

Transportation data reveals an emerging focus on cycling infrastructure across Scottish universities. While only five (33.3%) universities have dedicated 50% or more parking spaces to bicycles, the remaining 66.6% allocate some space for cycling, suggesting a gradual shift towards greener transportation options. However, the data needs more information on provisions for electric vehicles, an area requiring further investigation.

HESA data offers encouraging insights into water waste reduction. Ten (66.67%) Scottish universities have significantly reduced water waste. Five universities stand out for achieving reductions exceeding 30% between 2016/17 and 2019/20, while the remaining five reported more modest cuts of less than 20%. However, one university exhibited a 3.5% increase in water waste, highlighting the need for targeted interventions. Furthermore, data is lacking for four universities, hindering a comprehensive understanding of waste management practices across the sector.

Scottish universities generate significant carbon emissions (Figure 4). The University of Edinburgh, University of Aberdeen, University of Glasgow, University of Strathclyde, and University of St Andrews are among the higher emitters. However, the data reveals a positive trend, with all universities demonstrating some progress in reducing emissions over time. Between 2016/17 and 2019/20, nine universities (60%) achieved reductions of less than 30%, while six universities (40%) managed to reduce emissions by more than 30%. The University of the Highlands and Islands and the University of the West of Scotland stand out for their exceptional reductions of 63% and 70%, respectively.

Figure 4: Scottish Universities Carbon Emission 2016/17-2019/20



Source: HESA (2022).

The analysis of HESA data presented above reveals promising progress and significant opportunities for improvement in Scottish universities' ES performance. As Lo-Iacono-Ferreira et al. (2018) and Leal Filho et al. (2019b) highlight, universities can enhance their mitigation efforts by adopting a more comprehensive and holistic approach that addresses all aspects of their operations impacting the environment. This research, investigating the integration of ES into university culture, aims to inform strategies for propelling Scottish universities towards improving their performance.

Furthermore, external rankings are valuable when seeking information about a university's ES performance (Soysal, Baltaru and Cebolla-Boado, 2020). There are mixed reports about Scottish universities' performance on ES in the ranking tables. For example, the People and Planet (P&P), an independent UK student-led network of over 20,000 student members, assesses universities' ethical and environmental performance through its Green League ranking report. Despite criticisms for their methodology and accuracy, P&P remains the most extensive database, which publishes yearly information about UK universities' performance on ES (Jones 2012).

The P&P 2019 ES figures for Scottish universities (Table 6) show only one Scottish university in 1st class category in this ranking (Edinburgh Napier University). Two universities held the 2:1 category (Glasgow Caledonian University and University of Edinburgh), and two in the 2:2 class (the University of St Andrews and the University of the West of Scotland). However, seven Scottish universities held the 3rd class award (University of Sterling, Heriot-Watt University, University of Dundee, University of Abertay Dundee, University of Strathclyde, University of Aberdeen, and Queen Margaret University), while three universities were in the failed category (the University of Glasgow, The Robert Gordon University and University of the Highlands and Islands). This report shows that many Scottish universities (10 out of 15) have weak performance on ES.

The Complete University Guide (2020) also measures the performance of universities globally against the 11 United Nations sustainable development goals. This ranking shows that out of more than 450 institutions that participated globally, only 4 Scottish universities (University of Aberdeen, Glasgow Caledonian University, University of Dundee, and University of Strathclyde) took part in showcasing their contribution to sustainability. This global ranking underscores the need for more widespread engagement, as it shows the SDGs contributions of Scottish universities in 2019 as follows: the University of Dundee is 20th in the world, the University of Aberdeen 31st in the world, Glasgow Caledonian University 44th in the world and the University of Strathclyde 50th in the world (Universities Scotland 2019).

These ranking reports suggest gaps between the levels at which UK institutions talk green and at which they act green (Fisher, 2003; Grecu and Ipina, 2014; Lozano et al., 2015; Sule and Greig, 2017). For instance, according to Posner and Stuart (2013), some universities may develop programs for specific issues like recycling, transportation, etc, but fail to maintain the intensity of these programs across the entire university. A problem may be that universities still focus on economic framings and decision-making at the expense of other sustainability elements, thus failing to embed actual sustainability values into their culture (Leal Filho et al., 2019a).

Table 6: Green performance of Scottish Universities 2019

Region	Universities	Ranking	Categories/ areas of sustainability													
			Env. policy	HR for sus/ sus staff	Env. Auditing and Mgt. system	Ethical investment policy	Carbon mgt.	Workers right	Sustainable food	Staff and student engagement	Education and learning	Energy sources	Waste and recycling	Carbon reduction	Water reduction	
Eastern Scotland	University of Edinburgh	2.1 class	Scores per sustainability area	70	90	30	40	45	55	65	40	100	69.2	37.5	42.5	16.8
	Edinburgh Napier University	1 st class		80	65	85	10	85	55	25	60	30	82.5	37.5	60	67
	University of Sterling	3 rd class		0	35	0	30	0	40	10	45	20	86.7	62.5	35	0
	Heriot-Watt University	3 rd class		0	20	25	0	60	40	35	0	20	82.5	50	42.5	0
	University of Dundee	3 rd class		70	40	10	0	50	40	0	20	30	69.2	50	25	16.8
	University of Abertay Dundee	3 rd class		50	0	0	50	0	40	20	10	0	0	100	55	67
	Queen Margaret University	3 rd class		0	0	5	40	0	65	35	25	0	35	37.5	100	16.8
	University of St Andrews	2.2 class		80	45	30	30	5	55	55	30	40	62.5	37.5	10	11
South-Western Scotland	University of Glasgow	Fail		0	25	10	40	5	65	35	5	10	62.5	0	0	33.5
	Glasgow Caledonian university	2.1 class		50	30	100	0	65	65	0	25	65	80	62.5	37.5	50.3
	The University of the West of Scotland	2.2 class		80	35	0	0	5	40	15	75	30	6.7	50	55	50.3
	University of Strathclyde	3 rd class		0	15	15	0	5	80	15	20	30	17.5	100	12.5	33.5
North-Eastern Scotland	University of Aberdeen	3 rd class		80	20	25	15	5	65	5	40	10	62.5	0	0	27.8
	The Robert Gordon University	Fail		0	0	0	0	50	40	20	20	10	17.5	62.5	60	0
Highlands and Islands	University of the Highlands and Islands	Fail		0	0	0	0	45	40	0	0	10	0	0	0	0

Source: People and Planet (2021)

Dahle and Neumayer's (2001) survey of six London-based universities reported that although universities are not ground zero with greening, environmental quality is poor, especially around recycling. They claimed that:

“Typically, efforts are carried out in one part of a university, while other operational units of the same university lag behind...few colleges or universities, if any, have taken a comprehensive, across-the-board, environmental stewardship within educational and operational areas...in Europe and UK, some institutions, efforts have started but faded away, at others a greening process has yet to begin” (Dahle and Neumayer 2001, p.143).

Hopkinson, Hughes, and Layer (2008) support Dahle and Neumayer's (2001) findings, as they found that campus greening in some UK universities is nothing more than access to recycling bins or a few cyclists' stands. Other studies also suggested that some UK universities actively work against ES, such as overheating rooms, generating unnecessary waste, and having weak non-car transport provisions (Sule and Greig 2017).

In other words, some universities in the UK may have failed to respond effectively to environmental challenges and continue to concede disparities between claims and actual engagement with green practices (Rasche and Gilbert 2015, Akrivou and Bradbury-Huang 2015). Thus, this research pays attention to tight coupling rather than the implementation of ES. As the ranking records indicate, Scottish universities may need a more robust ES performance. For instance, the P&P records still need to be clarified about whether Scottish universities are involved in the genuine transformation of university culture, such as embedding ES into the everyday routine of organisational members, which is critical. Thus, this research takes a step beyond existing rankings by investigating the tight coupling of ES into institutional culture. This endeavour will help establish the actual contributions of Scottish universities in tackling and embedding ES principles (Sammalisto, Sundström and Holm, 2015).

2.4. The Benefits of an Environmentally Sustainable University

Universities are critical in ensuring our environment's long-term health (Creighton, 1998; Cavico and Mujtaba, 2009; Shriberg, 2004; Roos et al., 2020). This responsibility extends beyond mere self-interest; it is a social and ethical duty (Shriberg, 2004). Universities can serve as powerful change agents, social models for students, trendsetters for their nations, and living laboratories for ES practices. Through their commitment to responsible behaviour, universities can significantly influence future generations. By embedding sustainability principles into their operations and teaching practices, universities can empower graduates to become environmentally accountable leaders, ultimately contributing to a more sustainable society (Thomas and Cornuel 2012).

However, universities themselves also have a significant environmental footprint. Their bustling campuses, with the constant movement of people and goods, create substantial environmental impacts (Ragazzi and Ghidini 2017; Freidenfelds et al. 2018; Lo-Iacono-Ferreira et al. 2018). Universities often resemble small cities, housing complex buildings with high energy consumption, waste generation, and resource utilisation across educational, social, and scientific activities (Ragazzi and Ghidini 2017, Lo-Iacono-Ferreira et al. 2018). Thus, by actively pursuing ES initiatives, universities can reap numerous benefits. These include:

- **Reduced Operational Costs and Improved Efficiency:** Universities can optimise resource utilisation (materials, energy), leading to cost savings and a more efficient operational footprint (Savely et al. 2007).
- **Enhanced Reputation and Market Recognition:** A solid commitment to ES translates to a positive public image, attracting students, staff, and potential donors (Nicolino and Barros, 2016; Miller, 2005).
- **Compliance with Regulations and Risk Mitigation:** Proactive sustainability practices can help universities comply with evolving environmental regulations and minimise the risk of government legal penalties (Terkla and Pagano 1993, Bezbatchenko 2010).

- **Improved Staff Morale and Work Environment:** Sustainability efforts can foster a positive and environmentally conscious work culture, boosting staff morale and engagement (Blackburn 2007).

Furthermore, universities that prioritise ES contribute directly to the well-being of their stakeholders. Research by Tiyyarattanachai and Hollmann (2016) demonstrates that stakeholders at green universities experience a significantly higher quality of life than non-green campuses. Additionally, studies by Hipp et al. (2016) reveal that students perceive a connection between campus greenness and their overall well-being. Green campuses provide stress-reducing environments, foster feelings of safety, and create opportunities for social interaction and leisure activities (Hipp et al. 2016). This research suggests that green campuses can enhance all three dimensions of quality of life: psychological, social, and environmental.

The benefits extend beyond well-being. Jones (2016) highlights the potential of "restorative counter-spaces" on campuses, positively impacting staff and students' physical and emotional well-being. Similarly, Oludeyi et al. (2018) found a significant correlation between a positive campus environment and increased job commitment among non-academic staff.

Universities can also integrate sustainability principles into their academic curriculum (Savelieva and McKenna, 2011), which can foster an "ecologically sensitive" learning environment and provide students with opportunities to innovate and contribute to advancements in sustainability technologies. The focus on ES can further enhance a university's reputation and image, leading to a competitive advantage in attracting talent and funding (Faghihi et al. 2015, Dagiliūtė and Liobikienė 2015).

In conclusion, universities have a profound impact on the world around them. By embracing ES, universities can reduce their environmental footprint and become powerful change agents, inspiring future generations and contributing to a more sustainable and well-being-centered future for all.

CHAPTER THREE

RESEARCH THEORETICAL FOUNDATION

3.0. Introduction

This chapter presents the theoretical foundation of this study. The section begins by providing an overview of institutional theory, transformational change, institutional culture and NPT while linking ES. These frameworks, including their strengths, limitations, and criticisms, are explained while justifying their adoption in this research.

3.1. Institutional Theory

Institutional theory is a theory of organisation that informs how organisations function and change internally in response to demands from their environment (Boons and Strannegård 2000). An overview of this theoretical foundation is provided in the writings of Tolbert and Zucker (1996), Meyer (2008) and Cai and Mehari (2015). Institutional theory has a long history in organisational science and sociology (Fernando and Lawrence 2014), traceable to early works on industrial order by Max Weber (Tolbert and Zucker 1996). The overarching focus of this theory is on the dynamics of social change, including how structures are created, diffused, adopted, and adapted over space and time (Meyer 2008).

A diverse set of assumptions is upheld within this theory about ways in which organisations function and change. Meyer (2008) identified two types of institutional theory categories, namely, old institutionalism and new institutionalism. These two strands of the institutional theory hold four broad assumptions, including a) realist institutionalism, b) compromises with realism (old institutionalism)' c) sociological institutionalism I (social, organisational versions), and d) sociological institutionalism II, (phenomenological versions - new institutionalism).

While there are varieties of institutional theory, the versions share several similarities but differ in analytical focus (Cai and Mehari 2015). As Meyer (2008, p.790) puts it, "The many different varieties

of institutional theory have one main element in common; they all have come to terms with one or another version of the idea that society is made up of interested, purposive, and often rational actors”.

The first assumption within the old institutionalism theory is realist institutionalism, which emerged in the late 1940s and early 1950s and focused on analysing organisational contexts, such as the politics between organisations (Cai and Mehari 2015). This version of institutional theory holds a decisive view of society as having some fundamental institutional principles which must be in place before systems or actors can effectively operate (Meyer 2008). Thus, the research focus in this area is understanding how organisations can change to be congruent with relevant interests within their local business context.

The researcher draws on the assumption of realist institutionalism to underpin objective three of this research. Informed by this perspective, the researcher argues that fundamental cultural understanding exists about what is socially constructed as proper to do and not do to support the effective tight coupling of ES. Thus, universities are morally obligated to meet or comply with these fundamental institutional expectations embedding ES principles into their culture.

The second assumption within old institutionalism theory is ‘compromises with realism,’ which holds that institutions have cultural and structural or organisational dimensions or norms that have binding authority over actors. Norms remain binding if actors continue to support them (Meyer 2008). According to Dillard, Rigsby and Goodman (2004 p.509), “institutional environments are characterised by the elaboration of rules and requirements including, values, norms, beliefs’ and taken-for-granted assumptions, which individual organisations must conform if they are to receive support and legitimacy”.

This research argues that by tight coupling ES as an institutional norm, a university will receive support and legitimacy from stakeholders (Bellantuono et al., 2016; Rasche and Gilbert, 2015). Internal and external stakeholders, without coercion, will support their university through sustainable

behaviours, actions, and activities if they perceive the university conforms to the rules and requirements of ES.

‘Sociological institutionalism I (social, organisational versions) is the third assumption which falls into the ‘new institutionalism’ perspective of institutional theory. New institutionalism versions of institutional theory emerged between the late 1970s and early 1980s (Cai and Mehari 2015). This perspective emphasises the concept of the ‘organisational field’ with a proposition that organisational stability results from a fostered relationship that considers legitimacy imperatives (Mason, Kirkbride and Bryde 2007, Tempel and Walgenbach 2007). Legitimacy is “a generalised perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definition (Mason, Kirkbride and Bryde, 2007, p.295).

According to Meyer (2008), this version holds that actors are empowered and controlled by their institutional contexts, far beyond a few norms or networks of structures. This version of institutional theory argues that the social environment of organisations affects their behaviours, practices, and ideas as such organisations would need to remain isomorphic with their environment to attain and maintain legitimacy and resources required for survival (DiMaggio 1988, Tolbert and Zucker 1994, Cai and Mehari 2015). In institutional theory, isomorphism is defined as an organisation's adaptation of institutional practice to conform to the expectations of their environment (Dillard, Rigsby and Goodman 2004).

Three types of isomorphism drive institutional practices, namely, normative, mimetic, and coercive isomorphism (DiMaggio and Powell 1983, Powell and DiMaggio 1991, de la luz Fernández-Alles, and Valle-Cabrera 2006). Normative isomorphism refers to the pressures emanating from a collective struggle by members of occupational groups defining conditions and methods of work with which an organisation must comply (DiMaggio 1988, DiMaggio and Powell 2004).

Mimetic isomorphism connotes when an organisation attempts to imitate a more successful organisation due to uncertainty and lack of guidance from its environment (DiMaggio 1988, DiMaggio, and Powell 2004). While coercive isomorphism refers to formal and informal pressures exerted on organisations by stakeholders which it is dependent on and by expectations inherent in the society within which it operates (Dillard, Rigsby and Goodman 2004, DiMaggio 1988, DiMaggio, and Powell 1991).

The ‘sociological institutionalism I (social, organisational versions)’ perspective supports the ES tight coupling view upheld in this research. NESUs do not exist in a vacuum but are influenced by cognitive, normative, and regulative processes. Thus, they must embed ES processes according to the three isomorphic tendencies to appear legitimate in their actions towards ES. First, based on coercive isomorphism, it is argued that universities' practices and actions must be aligned with externally codified rules, norms, and laws on ES in the UK. Second, Scottish universities would need to maintain mimetic isomorphism by seeking legitimacy through alignment with best practices and normative isomorphism by seeking alignment with espoused standards for ES set out by educational/professional authorities.

The fourth type of institutional theory, ‘sociological institutionalism II (phenomenological versions), is categorised under ‘new perspectives’ (Cai and Mehari 2015). This version of the institutional theory, which gained prominence in 1990, holds that actors of modern society are not simply influenced by their wider environment but are constructed in and by it (Meyer 2008). This version argues that relations between actors and action are not merely causal but a function of institutional scripts and vital elements of socially constructed tautologies (Meyer 2008). New perspectives address organisational institutionalisation, focusing on combined approaches such as old and new institutionalism, institutional entrepreneurship, institutional work, and institutional logic (Cai and Mehari 2015).

In addition, beyond the external environment of organisations, institutional theory also theorises about internal structural arrangements within organisations (Hasse and Krücken 2014). According to institutional theory, organisations, in response to external pressures, may choose to decouple or tight-couple structural arrangements when attempting to balance strategic imperatives or profit-maximising activities with external expectations of the outside world (DiMaggio and Powell, 1991; Tolbert and Zucker, 1994).

The idea of decoupling and tight coupling within institutional theory is adopted as the main conceptual framework of this research. The focus is on internal structural arrangements rather than the external institutional environment of universities because this study aims to propose a framework for effectively embedding ES into the culture of Scottish universities. Thus, understanding how internal structural arrangements are modified in response to ES enables the researcher to expose universities' decoupling activities that prevent ES tight coupling from being realised in their practice of ES. Table 10 below summarises the critical assumptions of institutional theory and how it applies to this research.

Table 7: Summary of key assumptions of institutional theory and its application in this research

IT version	Main Argument	The focus of research Studies	Adoption in this research.
Realist institutionalism (Old institutionalism)	Society has fundamental principles that actors and systems must comply with or put in place before they can operate effectively.	To understand society's principles of how organisations can change to be congruent with a relevant interest in their local context. [External Institutional Environment]	It is used to explain that Scottish universities, by tight coupling ES practices, follow fundamental societal principles as they are obligated to comply with ES principles in their local context.
Compromises with realism (old Institutionalism)	Institutional environments are characterised by the elaboration of rules and requirements, including values, norms, beliefs, and taken-for-granted assumptions, to which individual organisations must conform to receive support and legitimacy from their environment.	To uncover cultural, structural, or organisational dimensions or norms that have binding authority over actors. [External Institutional Environment]	It is used to theorise that tight coupling ES as the institutional norm is a rule NESU must conform to receive stakeholders' support and legitimacy. Therefore, embedding ES as the norm of an institution makes it binding on actors, who will give their support in a cognitive/taken-for-granted pattern, not out of coercion or moral obligation.

Sociological institutionalism I, social, organisational versions (new institutionalism)	Actors are empowered and controlled by their institutional contexts, far beyond a few norms or networks of structures. Organisations' social environment affects their behaviours, practices, and ideas, so organisations must remain 'isomorphic' in their environment to attain and maintain the legitimacy and resources required for survival. In other words, organisational survival depends on its ability to interact with constituents in its environment in ways that are considered acceptable.	Research studies seek to understand classifications of Isomorphism which drive institutional practices. [External Institutional Environment and Legitimacy]	NESUs do not exist in a vacuum but are influenced by cognitive, normative, and regulative processes. Thus, to appear legitimate in their actions towards ES, they must tight-couple this practice following three isomorphic tendencies, <i>-Coercive Isomorphism:</i> aligning with externally codified rules, norms, or laws on sustainable actions in Scotland. <i>-Mimetic Isomorphism,</i> maintaining and seeking legitimacy through alignment with best practices <i>-Normative Isomorphism:</i> seeking alignment with espoused standards for ES set out by educational/professional authorities can increase ES's tight coupling into the culture.
Sociological institutionalism II, phenomenological (new perspectives)	Actors of modern society are not simply influenced by their wider environment but are constructed in and by it. relations between actors and action are not a simple causal one but a function of institutional scripts and vital elements of socially constructed tautologies	Studies seek to address organisational institutionalisation by combining old and new institutionalism, institutional entrepreneurship, institutional work, and institutional logic. [External Institutional Environment and Legitimacy]	-
Decoupling (New Institutionalism)	Organisations' internal structural arrangements are subject to decoupling. In response to external pressures, organisations may choose to decouple or tight-couple structural arrangements when attempting to balance strategic imperatives or profit-maximising activities with external expectations of the outside world.	This research explores how organisations attempt to comply with external demands and how internal changes to behaviour or practices are undertaken to improve efficiency and survival. [External and Internal Institutional Environment and Legitimacy]	Decoupling and tight coupling conceptualisations are adopted as the primary underpinning lens of this research. Inherent interpretations of decoupling and tight coupling underpin the analysis of internal structural arrangements adopted for ES tight coupling in NESU.

Source: The Researcher

Institutional theory is a cornerstone framework for analysing organisational behaviour. Its strength is its ability to illuminate the complex interplay between external pressures, internal dynamics, and the resulting practices within organisations (DiMaggio and Powell, 1983). However, researchers acknowledge limitations within the theory that warrant exploration and potentially new avenues for investigation.

One fundamental critique centres on the concept of "institution" itself. While Scott's (2001) comprehensive definition encompasses cultural, normative, and regulative elements, critics like Tempel and Walgenbach (2007) argue for a more precise and operationalised definition. This research adopts the definition offered by Barley and Tolbert (1997): that institutions are "shared rules and typifications" that categorise social actors and their appropriate behaviours. This definition resonates with the focus on core organisational activities within a cultural context, particularly relevant for exploring ES practices within universities.

Another criticism concerns the emphasis on isomorphism or the tendency for organisations within a field to become more similar over time (Meyer and Höllerer, 2014). Critics argue that this perspective overlooks the inherent heterogeneity of organisations (Meyer and Höllerer, 2014). Furthermore, some scholars suggest that the focus on isomorphism can lead to a somewhat static view of institutions, neglecting the potential for change and contestation (Clemens and Goodell, 2017). This research acknowledges this critique and aims to explore the potential for variation within the institutional context of universities, particularly regarding how universities might resist or adapt to homogenising pressures related to ES.

Adding to these concerns, Boxenbaum and Jonsson (2017) highlight the limited exploration of decoupling, where organisations adopt practices superficially without genuine commitment (Elken and Vukasovic, 2019). They argue for a deeper understanding of "the inner workings" of organisations, including how they manage and sustain practices within their institutional culture (Meyer and Höllerer, 2014). Elken and Vukasovic (2019) further emphasise the lack of in-depth exploration of decoupling within higher education.

This research aims to bridge the current understanding in this field. By focusing on the "inner workings" of NESU, this study will explore the specific mechanisms by which ES decoupling occurs within NESU. It will explore how NESU coordinates, manages and sustains ES practices within its institutional environment. This research will also explore the potential for variation within the institutional context, examining how NESU might resist or adapt to ES-associated homogenising

pressures. Ultimately, this research seeks to utilise institutional theory to understand the homogenising pressures of institutions and explore the potential disruptions and variations within institutional culture regarding ES.

The reasons why institutional theory remains a valuable framework for this research include the following:

- **Rich Theoretical Foundation:** Institutional theory provides a structured framework that can capture the complex and multifaceted nature of decoupling and tight coupling within a social context (Rasche and Gilbert 2015, Snelson-Powell et al. 2016, Graafland and Smid 2016, Gurău 2017).
- **Potential for Originality:** By combining the decoupling frameworks of Orton and Weick (1990) and Bromley and Powell (2012), this research offers a unique perspective rarely adopted in existing research (Elken and Vukasovic 2019).
- **Contextual Analysis:** Institutional theory helps to analyse and explain the specific contextual influences that shape the phenomenon under study, such as national policies, regional regulations, and the competitive landscape of higher education in Scotland (Greenwood et al., 2014; Holm, 1995).
- **Framework for Change:** The theory offers a framework for understanding institutional change processes and structures (Lok 2019), which aligns with the goals of this research, particularly regarding how universities might influence or adapt to institutional pressures around ES.

While acknowledging institutional theory's shortcomings, this research strategically utilises its strengths. This approach aids in improving our understanding of how ES initiatives can become superficial or disconnected within universities. Furthermore, this exploration can provide valuable

insights into how universities can navigate and potentially influence the institutional context to achieve more genuine and sustainable environmental practices.

3.2. Transformational Change

Tight coupling ES into the culture of universities requires understanding the theory of transformative change (Thomas 2004). Change emerges from organisational development with influences from anthropology, social psychology, education, and sociology. There are two main aspects to the study of organisational change: depth of change (e.g., Dawson 1996, Buono and Kerber 2010) and duration of change (Fullan, 2012). This research explores the depth of change by investigating how sustained change is attained in universities to realise enduring ES performance.

Change can be defined as adopting an idea or behaviour, be it a system, process, policy, program, or service that is new to the adopting organisation (Aiken and Hage, 1971; Daft, 1982; Damanpour and Gopalakrishnan, 2001). Organisational change is typically driven by factors, including organisational crisis, strong leadership, and environmental or market forces (Chaffee 1984, Kezar 2001). The need for change towards ES is driven by ecological and market forces that demand the conservation and preservation of natural resources.

According to Appelbaum and Wohl (2000), the terms “Change” and “Transformation” are often used interchangeably, which is a confusing imprecision. Change refers to efforts to implement or enhance performance, for which improvements and alterations are made incrementally to something already existing. The organisational context remains intact during change, and the expected outcome is to make things better or at least different (Appelbaum and Wohl 2000). There are two kinds of change: product change (technical) and process change (administrative) (Poole, Ferguson, and Schwab, 2005; Doherty and King, 2005). Product change refers to changes made to outputs and services distinctly different from previous outputs. In contrast, process change relates to changes in working that increase the quality of service, work environment or the implementation of innovative technology or tools (Poole, Ferguson, and Schwab, 2005, p.102).

Product and process change are standard to for-profit sectors like corporate organisations but can also be found in other sectors such as non-profit, public, and human services sectors (Jaskyte and Dressler 2005). Product and process change can be adopted as a lens to review change in the university sector (Kezar and Eckel 2010). For example, a university's process change can include creating a new accountability mechanism, governance structures, visions, policies, and initiatives to drive institutional transformations, coordinate leadership and facilitate communication (Kezar and Eckel 2010; Spira, Tappeser and Meyer 2013). Product change can include the introduction of a new pedagogy, program, or system.

Product and process change can be realised by adopting one or combined micro and macro-level approaches (Hodoson 2003). A “Micro” level approach aims to alter attitudes, ways of working and behaviours of practitioners. In contrast, the “Macro” level approach focuses on redesigning critical systems (such as systems for developing policy, routines, and practices) (Johnson and Austin, 2006). This implies that organisations can adapt to change at varying degrees. This can range from minor to radical (Austin and Claassen 2008). For example, Normann (1971) distinguished between ‘variation’ and ‘reorientation’ change. Variation (micro level) refers to the refinement and modification of organisational processes or products done incrementally and within the confines of existing structures. Reorientation change (Macro level) refers to the fundamental changes made to existing products or services which take an organisation beyond familiar domains.

Also, Singh, House, and Tucker (1986) differentiated between ‘peripheral’ and ‘core’ change. Peripheral change (Micro level) is a flexible organisational change that involves less institutional change. In contrast, core change (Macro level) affects the least flexible aspects of an organisation (such as changes made to goals, authority, etc.). Burke and Litwin (1992) identified two types of change: incremental and transformative. They argue that incremental change is for providing solutions to specific problems and is used to modify a procedure or adjust an existing service.

On the other hand, Transformation is far-reaching and is often aimed at altering fundamental aspects of an organisation, such as structure, culture, strategies, or even organisational systems. It is also referred to as a 'second order' change. Thus, while change is generally a gradual modification to fit the established framework, with incremental adjustments made which do not reform or change the system's core, transformation entails the "redefinition of relevant psychological space" involving a transition or quantum shift in organisational worldview and how purpose is understood (Golembiewski, 1976, p.413). According to Chapman (2002), second-order change is more profound. It requires changing standards by which behaviours are assessed (Golembiewski et al., 1976), and it "alters the interplay of institutional, cultural, technological, economic, and ecological dimensions of a given system (Mersmann et al. 2014, p.3). It also involves unlocking new development paths, social practices and worldviews. In other words, transformation change is generative learning, large-scale change, frame-breaking change, reorientation, culture change, strategic change, quantum change, double-loop learning or gamma change (Anderson 1996 p.33).

Thus, beyond the simple extension of existing practices, transformational change requires reframing or shifting organisational members' attitudes, beliefs, and cultural values (Bartunek and Louis 1988). Appelbaum and Wohl (2000) argued that this level of change is not about improving what is but creating what is not, i.e., creating a new realm of possibilities that previously did not exist. Thus, for change to be considered transformational, it must alter the culture of an institution by transforming the understanding, underlying assumptions, institutional behaviour, structure, processes, products or services (Ramaley 2002). This level of change must be rooted, persuasive, intentional, holistic, and consistent over time (Eckel, Hill and Green 1998).

Therefore, transformational change reflects an institution's shared belief that a fundamental shift is required to prevent climate change and ensure global sustainable development (Mersmann et al., 2014). Transformation of this scale cannot arise simply by changing technologies or system structures. It requires an integrated change in institutional worldview, which incorporates and reflects institutional and cultural surroundings and can potentially foster a transformational effect (Beddoe et al., 2009;

Mersmann et al., 2014). Thus, to embed sustainability, there is a need to address critical issues, including the identity, culture, mission, and operation of an institution, while also managing the ongoing need to do well in the ranking, attract students, foster research, and academic freedom for employees to pursue their fields of interests (Exter, Grayson and Maher 2013).

This research argues that a genuine ES pathway can only be possible through transformational change involving a profound cultural shift in management philosophies beyond technical fixes (Mersmann et al., 2014). The view of this research is that ES change efforts in universities should follow a radical, transformational approach that drives managers to rethink fundamentals because it produces longer-lasting effectiveness (Shrivastava 1994; Chapman 2002, Maon, Lindgreen and Swaen 2010, Doppelt 2003).

3.3. Institutional Culture - Overview of Concept

‘Culture’ is a popular concept that emerged in the 1980s, traceable to anthropology and sociology. It is an amorphous term with no agreed definition (Fiol 1991; Linnenluecke 2009; Palmer, Russell, and McIntosh 2012). However, this subject continues to burgeon the interests of many scholars, who are attempting to define what culture is, how to identify it, how it influences behaviour and how to examine it (see, for example, Martin and Siehl 1983, Owens and Steinhoff 1989, Schein 1990a, Schein 1990b, Peterson and Spencer 1991, Martin 1992, Deshpande et al. 1993, Denison 1996, Khademian 2002, Schneider and Smith 2004, Schein 2004, Deal and Peterson 2009, Armenakis, et al. 2011, Schneider, et al. 2016).

Culture is a complex term; nonetheless, many definitions of this concept can be found in the literature. From an organisational perspective, culture broadly explores the norms, beliefs, values, and behaviours of many aspects of organisational life, including organisational effectiveness, success, and central processes (i.e., planning, governance, structure, and leadership) (Tichy 1983, Chaffee, and Tierney 1988, Morgan 1997, O’Sullivan 2014). Organisational culture is related to institutional

culture. This is because ‘institutions’ such as educational or public institutions share similarities with corporate business organisations, which have several complexities and elements, like human resources and systems involved in business activities.

Some authors have described culture as shared attitudes and customs (Martin and Siehl, 1983), values and behaviours (Schein 2004), beliefs and norms that guide organisational members in comprehending rituals, routines and norms which exist in their organisation (Deshpande et al. 1993, Denison 1996; Iselin 2010). More specifically, culture, according to.

1. Peterson and Deal (2009, p.3) is the “*way we do things around here*”.
2. Morgan (1997, p.145), reflecting on the intangible aspects of culture, defines culture as “*the way we do things around here... when no one is looking*”.
3. Peterson and Spencer (1991 p.142) simply put culture as ‘*the deeply embedded patterns of organisational behaviour and the shared values, assumptions, beliefs or ideology that members have about their organisation or its work*’.
4. According to Kuh and Whitt (1988, p.6), culture is a “*persistent pattern of norms, values, practices, beliefs and assumptions that shape the behaviour of individuals and groups in a college or university and provide a frame of reference within which to interpret the meaning of events and actions on and off campus*”.
5. Institutional culture is “the values and beliefs of university members which are developed in a historical process which strongly influence the decision-making at universities and transmitted by language or symbols” (Sporn 1996, p.45).

Traditionally, research on culture can be analysed from two main perspectives: quantitative and qualitative human perspectives. Quantitative descriptions of culture typically focus on measuring and observing organisational conditions, such as leadership, structure, financial performance, customer service complaints, etc. Meanwhile, the qualitative human perspective focuses on uncovering the beliefs, values, and behaviours characterising an organisation (Schein 2004). Furthermore, there are two views on culture. These are the ‘purist view’ and ‘pragmatist view’ (Smircich 1983; Fiol 1991).

The pragmatist perspective holds that an organisation 'has culture.' Here, culture is a variable that can be used as a causal factor or a tool for fostering organisational commitment and predicting outcomes. This perspective emphasises prediction, generalisability, causality, and control. The Purist view, in contrast, referred to culture as a root metaphor, i.e., something an organisation is. This view assumes organisations as expressive forms that have a set of deep underlying values and manifestations. Both perspectives share commonalities, as the belief is that organisations are organisms within an environment that serve as imperatives for behaviour.

However, some authors have criticised both perspectives for failing to define culture and what needs to be changed to achieve the variable outcome (Heidrich 2014). Denison (1996) criticised the pragmatic perspective, arguing that it reduces culture to another quantitative variable used to measure organisational performance. He maintained that this perspective fails to recognise the critical human aspect of culture as it simply suggests ways of improving observable elements of an organisation.

In contrast, the purist leads to a description of organisations as culture rather than a cause-and-effect variable outcome (Heidrich 2014 p.10). Purists attempt to go in-depth by including unobservable organisational phenomena to help understand how organisations establish their cultural features. However, Austin and Ciassen (2008 p.339) criticise purist studies, arguing that ample progress has been made in defining organisational culture and that it is time for the discipline to contribute to practice by providing 'practical tools' necessary for understanding culture change.

Fairfield et al. (2011) support this argument, adding that future culture studies should aim to provide 'pointed, practical advice' necessary for improving organisational practice. This thesis subscribes to the view that organisations are culture, a sum of university members' values, beliefs, and behaviours, developed and transmitted by language or symbols identifiable through stories, unique language and norms emerging from individual and organisational levels (Sporn 1996). This culture affects everything an organisation does, including how things are done (Jermier et al. 1991).

Early studies of organisational culture in universities established that universities have a unique culture and subcultures that differ from those of corporate organisations and other institutions. This includes the myths and rituals of the institutions, students, and faculty subcultures (Välilä 1998). According to Bergquist (1992), four cultural archetypes or co-existing cultures can be found within universities: collegial, managerial, developmental, and negotiating.

- Collegial Culture: This type of culture arises from the disciplines of the faculty. It values scholarly engagement, shared governance, and decision-making.
- Managerial Culture: values efficiency, supervisory skills, and fiscal responsibility. This culture emphasises the goals and purposes of an institution.
- Developmental Culture is centred on all institution members' professional and personal growth.
- Negotiating Culture emphasises establishing equitable policies and procedures and accentuates the need for confrontation, interest groups, mediation, and power (Bergquist 1992).

The interactions and relationships between each culture archetype are well explored by Bergquist (1992). In their review of Bergquist's framework, Kezar and Eckel (2002) argued that the model offers a structure for masking the many complexities of institutional culture. However, an institution's fundamental organisational factors like size, scale, and historical mission affect the proportion of each cultural archetype. Kuh and Whitt (1998) identified three subcultures that exist in universities: a) the faculty culture, b) the student culture, and c) the administrator culture. Bergquist's (1992) and Kuh and Whitt's (1998) findings demonstrate that unlike profit-making organisations, universities, schools, and colleges are complex organisations with unique and competing cultures running across their systems. According to Sporn (1996, p.42), these complexities are because,

- Universities' problematic goal attainment standards make it hard to develop one adequate standard for delivering diverse services.

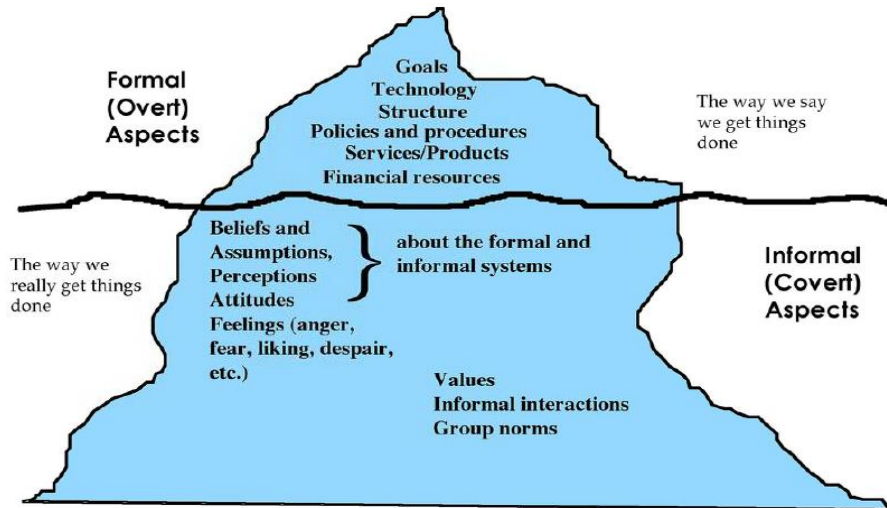
- Universities have a dominant wish for autonomy and freedom among professionals working there. This makes it difficult for a coordinated governance and university management initiative to become established.
- Universities have ambivalent goals, different objectives and standards in teaching, research, and service, and a lack of uniformity in goal achievement guidelines, resulting in an ambiguous decision-making process.
- Universities are “people-oriented.” Different constituencies enter the system with diverse expectations that the institution must recognise to fulfil its task.
- Universities frequently encounter environmental changes, such as political, economic, social, and technological changes. These changes affect the situation of any institution as they struggle with new forms of institutions and to balance institutional autonomy, social demands, and governmental regulations.

The Bergquist framework offers a valuable lens for understanding the culture of sustainability in universities. It allows practitioners unfamiliar with cultural analysis to quickly establish and identify cultural constructs (Kezar and Eckel 2002). As this study focuses on analysing university culture, the Bergquist framework is deployed as a lens to explore the cultures developed by Scottish universities to foster ES routinisation into its everyday culture. Understanding institutional culture also requires recognising and identifying observable elements of culture (Khan et al. 2010). Herman’s Iceberg model, Schein’s culture model, and Rousseau’s model offer insights into an organisation’s various layers of culture.

Herman’s Iceberg Model of Culture (figure 5) establishes that culture comprises two levels. a) the hidden below the waterline (invisible) constructs and b) the visible (apparent) constructs. According to this model, the visible layer of culture reflects how an organisation says it gets things done, while the invisible layer represents the “way it gets things done” (Heidrich 2014). While the visible and deeper beneath-the-surface dimensions of organisational culture highlighted in this model successfully establish components constituting culture, it goes a step further, differentiating between each layer. It

argues that the visible elements of culture are easily observable and consist of systems, including structures, policies, procedures, services, technologies, and financial resources. At the same time, the invisible or deeper layer consists of the hidden aspects, including attitudes, norms, values, and perceptions, that inform how things get done in an organisation (Ghinea and Bratianu 2012).

Figure 5: Herman’s Iceberg Model of Culture



Source: Ghinea and Bratianu (2012. p.262).

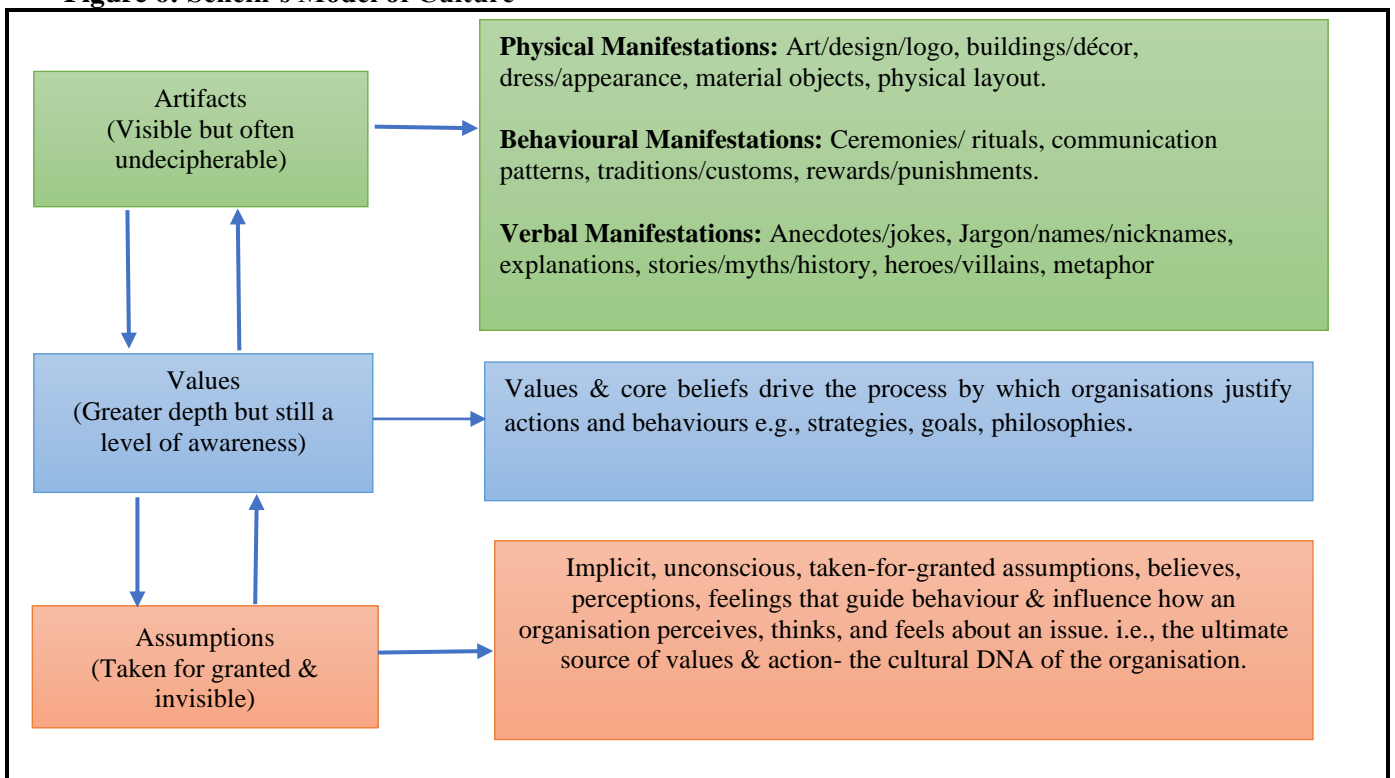
Schein’s model of culture (Figure 6) is one of the most widely cited models of organisational culture in higher education literature (Smerek 2010). The model purports three levels of culture, namely, artefacts, espoused values, and basic underlying assumptions. Artefacts represent the surface level of culture, which features what can be seen, heard, and felt when encountering an organisation. This level of culture is the easiest to identify but hard to decipher without understanding underlying assumptions within such an organisation (Schein 2004, Smerek 2010).

The second tier consists of espoused beliefs, values, and existing norms that define ways of integration or adaptation to the environment. This level of culture aids group functioning, slowly transforming into an organisation's underlying assumption (Schein 1990b). According to Schein, the deepest level of culture is the fundamental assumptions resulting from once explicitly held values and beliefs. These

values become deeply embedded, so much so that they become utterly unrecognised by organisational members. Although assumptions become unrecognised, they guide behaviour and suggest to members how to think, perceive, and feel about problems and issues within the organisation (Schein 2004).

The Schein model has gained both support and criticism in academia. Smerek (2010) outlines a strength of Schein’s model as fostering a more profound level of analysis of the taken-for-granted aspects of organisational culture. In contrast, critiques of the Schein model argued that the framework trivialises artefacts and symbols (Trice and Beyer 1993). However, Schein defends his work, claiming that the causal arrow in his model, which moves from underlying assumption to values to artefact, depicts a complex interaction rather than a simple linear progression from plunging to the surface (Schein 1990b).

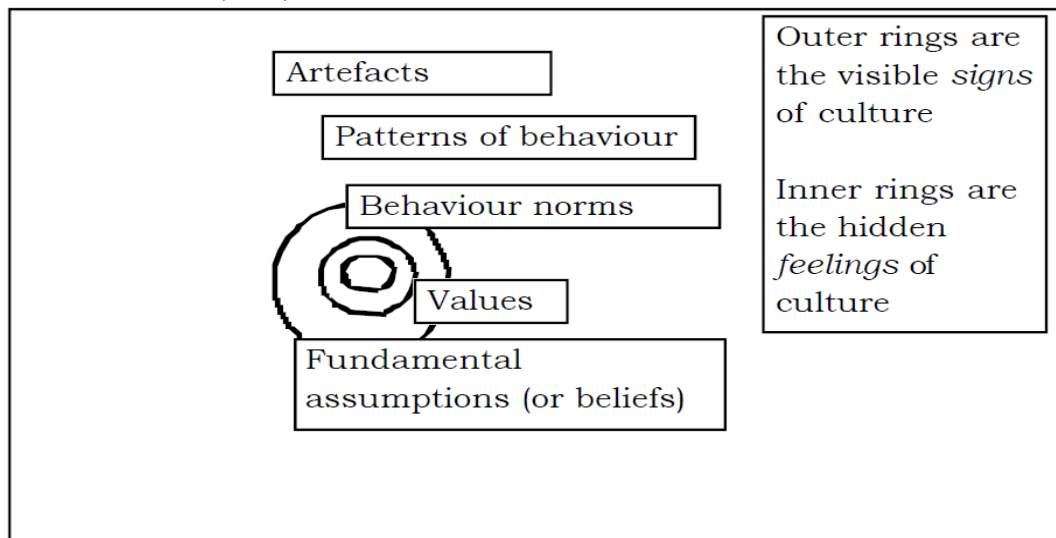
Figure 6: Schein’s Model of Culture



Adapted from Schein (1988, p.9a), Hampden-Turner (1990, p.13) and Hatch (1997, p.216)

Rousseau (1990) presented his model of culture (Figure 7) as a concentric ring divided into outer rings of readily accessible layers (i.e., visible signs of culture) and inner difficult-to-access rings (hidden aspects of culture). Rousseau's model fulfils shortcomings of other culture frameworks as it captures all vital elements of the culture continuum, including unconscious to conscious, interpretive to behaviour and from inaccessible to accessible (O'Reilly et al. 1991, Ghinea and Brátianu 2012, Abidin 2014, Abidin 2014).

Figure 7: Rousseau's (1990) Model of Culture



Source: O'Donnell and Boyle (2008 p.6)

Herman's Iceberg model, Schein's culture model and Rousseau's Model, taken together, indicate that organisations have physical aspects of culture, such as symbols and ceremonies, which are easily identifiable and more embedded or deeply rooted aspects (e.g., values, assumptions, and beliefs) which governs and informs its conducts and behaviours. Ghinea and Bratianu (2012 p.259) summarised culture as comprising of seven main aspects: 1) Historical (i.e., those traditions and social heritage passed on to future generations). 2) Behavioural (those shared, learned behaviours considered a way of life). 3) Normative (ideals, values, and rules for living). 4) Functional (how people solve problems by adapting to the environment and living together). 5) Mental (complex ideas, learned social control habits). 6) Structural (patterned and interrelated ideas, symbols, or behaviours), and 7) Symbolic (based on arbitrarily assigned meaning shared by an organisation). The lessons learnt from reviewing

models of organisational culture guide the interpretation of the findings of this research relating to the various cultural aspects established for ES in NESU.

3.4. Institutional Culture Change and Environmental Sustainability

Cultural change is vital for embedding ES in any university. However, institutional culture application (models and theories) to ES still needs more academic contributions (Willmott 1993, Harris and Crane 2002, Millar, Hind and Magala 2012, Russell and McIntosh 2011). Bertels, Papania and Papania (2010) define a sustainability culture as “*where organisational members hold shared assumptions and beliefs about the importance of balancing economic efficiency, social equity and environmental accountability*” (Bertels, Papania and Papania 2010, p.10). Lozano and Garcia (2020, p.2) describes sustainability culture as:

“The continuous and sustained incorporation and integration of sustainability issues in cultural system elements (operation, strategy and management, governance, organisational systems, service provision, and assessment and reporting), where the cultural elements and change processes transform inputs (i.e. materials and resources that have economic, environmental, and social value) into outputs (products, services and waste, with their economic, environmental, and social value), to fulfil goals or objectives based on resource efficiency and effectiveness”.

Bertels, Papania and Papania (2010) and Lozano and Garcia (2020) offered applicable definitions; however, their definitions focus on sustainability in general and not ES. Thus, in this research, an institutional culture of ES is defined as those persistent sets of values, beliefs, and norms which institutional members collectively hold or share about the importance of maintaining the environment through conservation, preservation and protection, which strongly influence decision-making, events, and actions on and off-campus (Dessein et al., 2015 Adams, Martin and Boom 2018).

Embedding ES into institutional culture can foster economic, social, and environmental benefits. According to the resource-based argument, incorporating sustainability into culture can produce inimitable environmental capabilities (Russo and Fouts 1997, Harris and Crane 2002). In other words, embedding ES can help a university gain a competitive advantage (Gürlek and Tuna, 2018). Furthermore, the strategic-fit perspective postulates that organisations that genuinely embrace environmentalism and accountability are more likely to attain the global leader status demanded by stakeholders (Exter, Grayson, and Maher, 2013; Rieg, Gatersleben, and Christie, 2021).

Culture change proposed in existing studies centres on engaging in first-order (alpha or beta) change in culture. That is, a level of change which alters the artefacts of an institution. Spira, Tappeser and Meyer (2013) established features of first-order culture change, including 1) bringing change to the physical aspects (artefacts) of a culture, such as changes to sustainability vision, policies, education, governance, and campus mechanisms and b) invisible elements (e.g., behaviours, basic assumptions, values) (Adams, Martin, and Boom, 2018).

Universities can utilise visible aspects of culture to signal to institutional members the extent to which matters related to ES are valued and central to institutional activities. For example, vision, mission, goals, and strategy statements reflect endorsements and commitments made by vice-chancellors and university presidents towards ES (Galpin, Whittington, and Bell 2015). Invisible aspects of culture, such as 'values', define or shape modes of behaviour and motivations for work in organisations (Adams, Martin, and Boom 2018).

Cultural values that can be held for ES include: 1) integrating vision, values, and operational statements, as well as concerns about environmental issues (Velazquez et al. 2006, Lukman and Glavic 2007). 2) values and operational statements emphasise that economic goals must be tempered (Stead and Stead 2009). 3) values that demand short-term perspectives are replaced with an intergenerational timeframe (Weforld 1995). 4) The environment should be affronted with valuation and respect

(Shrivastava 1994), and 5) Value modalities, including moral, spiritual, and aesthetic, should be embraced (Stead and Stead 2009).

First-order culture change may require shifting from a top-down cascade, where management passes down values to employees (Harris and Crane 2002, Van der Heijden, Cramer and Driessen 2012). Hoffman (1993) and Post and Altma (1994) highlight that espoused values should emerge from management and internal change agents. They argued that values instituted by organisational leadership are more likely to be accepted and held firmly by institutional members. Some believe that values can only become unaccepted when they are incongruent with those of the individual (Stoughton and Ludema 2012, Howard-Grenville, Bertels and Lahneman 2014).

These studies have assumed that employees (including staff, administrators, and even students) accept and adopt sustainability values unchallenged. It also optimistically assumed that managers and university leaders can effectively manage the culture of their institution (Newton and Harte 1997). These perspectives are worthwhile because research findings also have listed managers as responsible for furthering institutional sustainability actions. In contrast, some findings suggest leadership can be a formidable obstacle hindering sustainability integration (Post and Altman 1994, Fineman 1997, and Crane 2000).

The second-order culture change entails 'embedding' ES as the university's culture such that it becomes entirely tightly coupled into all aspects and everyday activities of the university. Here, the university responds fully to demands, calling on them to be ecologically responsible by ensuring all their systems are 'without distinctiveness' when pursuing this goal. In other words, all parts of a university act harmoniously to address ES by ensuring ES principles become fully tightly coupled across all layers and aspects of its culture systems, processes, and generations of organisational members (Tolbert and Zucker 1996).

Second-order culture strongly serves and supports strategic management (Sporn 1996). Strong cultures have high congruence between organisational members' values, strategies, and goals (Cameron and

Freeman 1991). In other words, a university with a strong culture for ES will have faculty leaders, academic and non-academic staff and students who share common values and methods of doing things sustainably.

Furthermore, there are two aspects to ES culture, namely, the strength of culture and the orientation of culture. Within the strength dimension, culture at the organisational level may be strong or weak. First-order culture change may be viewed as a weak culture. Weak cultures have loosely linked subunits, goals, values, and norms, which are contradictory (Sporn 1996). A weak culture can be problematic for developing a unified strategy for ES strategy (Sporn 1996).

On the other hand, second-order culture change is a strong culture. Existing findings recognise strong cultures can serve as a basis for adaptation. Organisations with strong cultures find support for strategic management (Sporn 1996). A strong culture helps implement strategies effectively due to a high degree of congruence between the values and goals of organisational members and strategies (Cameron and Freeman 1991). For example, in a strong micro-culture, faculty leaders and academic and non-academic staff share consistent values and methods for doing things.

Orientation of culture is another aspect that can influence institutional change initiatives. Orientation is *“the focus of values, attitudes, beliefs, and patterns of behaviour of faculty members”* (Sporn 1996, p.46). Niedlich et al. (2019) conducted a qualitative study of sustainability governance culture at 11 universities and identified two cultural orientations for sustainability: organisational learning orientation and holistic orientation. Organisational learning orientation is the degree to which sustainability is seen as an organisational development and learning issue. While holistic orientation, an institution takes a holistic and integrated approach to sustainability” (Niedlich et al., 2019).

Cultural orientation can be externally or internally focused. Externally focused orientation considers externalities of the business environments and is highly supportive of adaptive strategies of management better than an internally focused culture (Sporn 1996). Faculty members typically consider the externalities of the university’s business environments and support adaptive management

strategies to address these environmental issues. In an internally focused orientation, faculty members focus on the organisation's internal dynamics (Sporn 1996). For instance, staff members may prioritise routines, administrative tasks, and strategic and structural issues over external challenges such as ES.

In conclusion, universities must develop a dominant organisational culture as they seek to adapt and respond to ES. Organisational culture as a point of investigation enables understanding how ES culture can be nurtured (Ramísio et al., 2019; Niedlich et al., 2019). It allows for a deeper investigation into the formal and informal aspects of embedding sustainability into university practices, an area lacking robust exploration within higher education literature (Niedlich et al., 2019; Lozano and Garcia, 2020). In other words, change initiatives become unsuccessful unless improvement strategies become embedded within culture change (Cameron and Freeman 1991).

3.5. Environmental Sustainability Tight Coupled Institutional Culture

This research adopts "tight coupling" as the preferred terminology to describe the process of transforming initially decoupled ES practices into deeply embedded elements of a university's culture. This term, derived from the chosen theoretical framework (institutional theory), resonates with the idea of "planting" or firmly establishing something within another entity. In this context, it signifies the act of implanting ES principles so thoroughly that they become integral to the university's cultural fabric.

Egels-Zandén (2014, p. 61) aptly defines tight coupling as "the process through which policy and practice that once were decoupled become coupled again." Achieving tight coupling with ES signifies its successful integration within the university's culture. This integration fosters a sense of shared commitment, binding university members to the organisational goal of incorporating ES principles into daily routines (Elken and Vukasovic, 2019). Hautala et al. (2018, pp. 11-13) further emphasise the multifaceted nature of tight coupling, highlighting its ability to:

- **Reinforce Rules and Regulations:** Tight coupling strengthens the prominence of rules and regulations related to ES within the organisation.
- **Enhance Member Commitment:** It fosters a more substantial member commitment to organisational sustainability goals.
- **Promote Organisational Effectiveness:** Ultimately, tight coupling contributes to increased organisational effectiveness in achieving its ES objectives.
- **Align Strategic Values:** Elken and Vukasovic (2019) point out the role of tight coupling in ensuring that strategic values related to ES are consistently held and enacted throughout the university.

In essence, the tight coupling of ES with university culture serves several vital functions: binding members to sustainability efforts, underscoring the importance of goals and regulations, and ensuring consistent adoption of strategic values across the institution. Tight coupling can be understood from a dual perspective as both a process and a desired outcome. As a process, it encompasses the initiatives and undertakings a university pursues to embed ES principles within its organisational culture. The ultimate goal, however, is the state of "tight-coupledness," where the practice of ES becomes deeply ingrained in university members' everyday operations and behaviours. Lozano (2006), Zucker (1977), and Mullaly (2014) all emphasise this notion of complete acceptance and routine integration of the practice. A university achieves tight coupling of ES when its sustainability principles are embraced by all members, becoming ingrained in daily activities and fostering a shared understanding of its commitment to environmental responsibility.

The concept of tight coupling draws from the transformational change literature, focusing on the journey through which a practice transcends mere system changes to influence individual behaviours, attitudes, and working styles (Austin and Classen, 2008; Lozano, 2006). This starkly contrasts "implementation," which falls under the umbrella of general change theory. Implementation refers to the initial introduction of a program (e.g., an ES program) into a system. Here, the focus is on incremental changes to improve or modify existing practices, ultimately enhancing performance

(Appelbaum and Wohl, 2000). Table 8 effectively summarises the critical differences between implementation and tight coupling.

Table 8: Key differences between ES implementation and tight coupling

ES Implementation:	ES Tight Coupling
<p>Terminology:</p> <ul style="list-style-type: none"> Implementation is often referred to as the initial stage of adopting ES practices within a university (Jabbour, 2010). Synonyms for implementation include incorporation (Ramísio et al., 2019) and initiation (Lozano, 2006). <p>Characteristics:</p> <ul style="list-style-type: none"> This stage is characterised by a reactive approach, responding to external pressures such as regulations or stakeholder demands rather than a proactive commitment or engagement with ES (Jabbour, 2010). Implementation reflects the transition from "business-as-usual" operations to the early stages of integrating sustainability principles (Kapitulčinová et al., 2018). <p>Focus:</p> <ul style="list-style-type: none"> During implementation, ES is viewed as a social concern, but it may lack deep integration within the university culture, and related knowledge and practices are still emerging at this stage (Vargas et al., 2019). <p>Process:</p> <ul style="list-style-type: none"> May et al. (2018) define implementation as how social organisations operationalise new practices. Implementation often involves incremental changes, solving 	<p>Terminology:</p> <ul style="list-style-type: none"> Tight coupling refers to a more advanced stage of ES integration within an HEI (Kapitulčinová et al., 2018). Synonyms for tight coupling include institutionalisation (Lozano, 2006), embedding, and mainstreaming (Kapitulčinová et al., 2018; May et al., 2018), and integration (Ralph and Stubbs, 2014). <p>Characteristics:</p> <ul style="list-style-type: none"> Tight coupling represents a more profound transformation, moving beyond the initial stages of implementation to a state where sustainability is fully integrated into the university's culture (Kapitulčinová et al., 2018). ES becomes a core value and guiding principle, influencing decision-making and everyday behaviours across the institution. <p>Focus:</p> <ul style="list-style-type: none"> With tight coupling, ES activities become "matured" and embedded within the institution (Vargas et al., 2019). A heightened sense of ownership and responsibility for sustainability leads to increased action and ongoing improvement. <p>Process:</p> <ul style="list-style-type: none"> Achieving tight coupling necessitates an organic transformational approach. Ramísio et al. (2019) suggest this approach encompasses three key dimensions: <ul style="list-style-type: none"> Framework: A well-defined framework for integrating sustainability practices.

<p>specific problems or modifying existing practices (Burke & Litwin, 1992)</p>	<ul style="list-style-type: none"> ○ Level and Actors: Engaging all university-level actors fosters collaboration and ownership. ○ Integration: Seamless integration of ES principles into everyday decision-making and behaviour. • Tight coupling is achieved by embedding sustainability into the institution's day-to-day operations and culture (Lozano, 2006). • Tight coupling requires a more fundamental shift in organisational culture, values, and beliefs (Bartunek, 1988; Appelbaum & Wohl, 2000). It is not simply about refining existing practices but creating a new paradigm for ES within the university.
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Source: Compiled by the Researcher

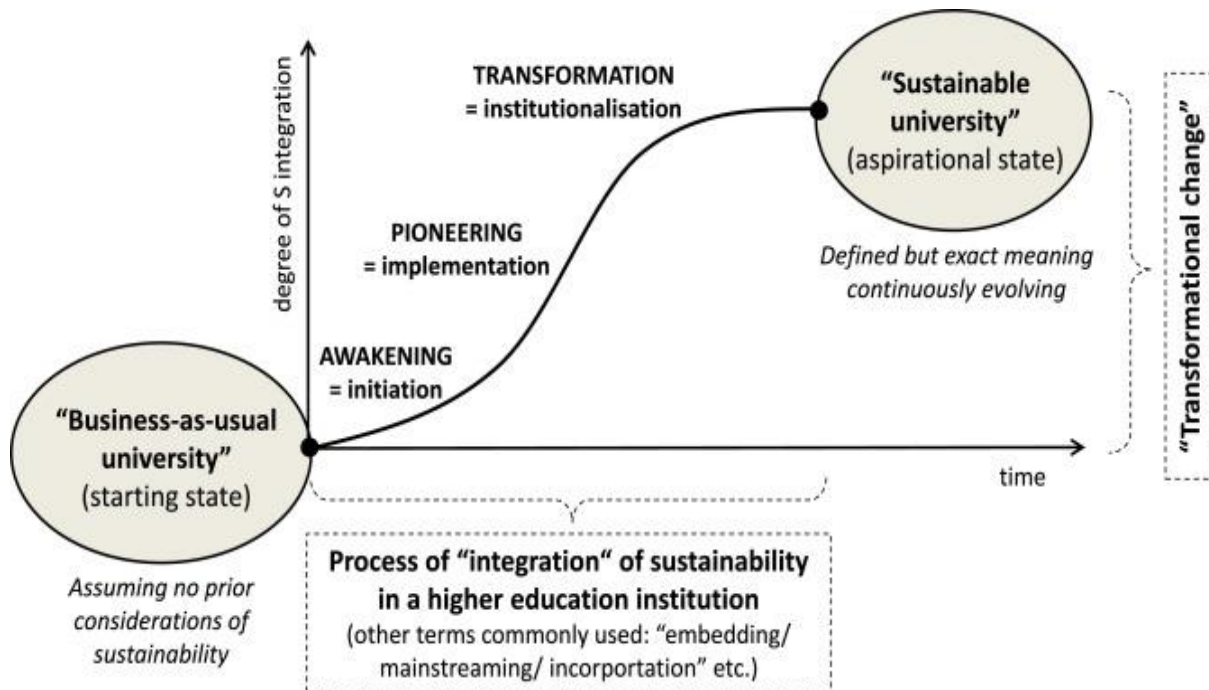
While distinct concepts, implementation and tight coupling are intricately linked within the broader narrative of institutional change. Viewed through the lens of a university's evolving sustainability practices, they can be seen as sequential stages of maturity within the overall change process. Table 9 provides a valuable overview of existing research on maturity models for sustainability in universities.

Kapitulčinová et al. (2018) introduced a "sustainability maturation curve" that charts the growth trajectory of sustainability efforts within universities (Figure 8). This model depicts a progressive journey, beginning with a "business-as-usual" university state, where sustainability considerations are absent. The process then unfolds through stages of initiation/awakening, implementation/pioneering, and institutionalisation/transformation, culminating in a "sustainable university" where sustainability is fully integrated into the institution's core identity. This research builds upon this framework and proposes a five-stage maturity model for ES within universities. These stages are elementary, emerging, evolving, established, and embedding, which mirrors interpretations offered by previous scholars such as Crosby (1979), Kapitulčinová et al. (2018), and Soini et al. (2018).

This proposed framework positions implementation as a crucial stage in the tight coupling journey. During implementation, universities introduce and operationalise ES practices within the system. However, these practices may still be somewhat peripheral and disconnected from the core cultural fabric of the institution. Tight coupling, on the other hand, represents a more mature and profoundly

ingrained state. ES principles have become fully integrated into the university's culture, shaping decision-making processes, everyday behaviours, and the overall value system.

Figure 8: Sustainability Maturation Curve



Source: Kapitulčinová, et al. (2018, p.4370).

Understanding the interconnected nature of these concepts and their implementation and tight coupling is essential for universities to navigate the path towards a more sustainable future. By recognising them as sequential stages within a broader maturity model, universities can develop targeted strategies to move beyond mere implementation and achieve the deeply embedded ES practices characterising tight coupling. Each stage reflects a distinct level of integration and commitment to ES practices.

Stage 1: Elementary

This initial stage, often described as "awakening" (Kapitulčinová et al., 2018), is characterised by a minimal focus on ES. Universities at this stage give little to no consideration of ES principles in their decision-making or operations.

Stage 2: Emerging

This is the beginning of the implementation phase. The "emerging" stage signifies a growing awareness of the need for ES. Universities begin to initiate "green initiatives" (Lozano, 2008) in response to stakeholder pressure or a desire to maintain legitimacy (Tolbert & Zucker, 1996). These initial efforts may involve launching environmental projects or formalising green practices into policies and procedures. However, these structures are often imitative, lacking originality, and mirror existing models other institutions have adopted (Tolbert & Zucker, 1996). Furthermore, a limited understanding of these structures and their purpose among organisational members (e.g., staff, students) typically results in a small pool of early adopters (Lozano, 2008).

Stage 3: Evolving

The "evolving" stage, still within the implementation level, signifies a period of initial benefit realisation from the operationalisation of a few ES initiatives. Universities may transition from mere imitation to a more normative approach, fostering broader implementation across the institution (Graafland & Smid, 2016). This stage might witness the development of new structures designed explicitly for ES purposes, potentially championed by individuals with a vested interest in promoting their value (Exter, Grayson, & Maher, 2013). A normative acceptance of these structures might also emerge within the university (Soini et al., 2018). The adopter base becomes more heterogeneous, but some uncertainty regarding the long-term effectiveness of the newly implemented structures may still linger (Tolbert & Zucker, 1996).

Stage 4: Established

This is the initial phase of tight coupling. The "established" stage represents a turning point towards genuine sustainability transformation. Universities at this stage demonstrate a capacity for innovation in their ES efforts, with minimal resistance from opposing groups. A strong shared understanding and

social consensus around the value of being an ES university emerges (Exter et al., 2013). Furthermore, positive correlations between the implemented structures and desired ES outcomes appear.

Stage 5: Embedded

The final stage, "embedded," represents an advanced state of embeddedness where the university achieves widespread recognition as a "sustainable campus" (Kapitulčinová et al., 2018). The focus here shifts towards ensuring the historical continuity of established ES structures, particularly concerning their long-term survival across generations of organisational members (Tolbert & Zucker, 1996). Key attributes of this stage may include a well-defined institutional identity built around ES, unwavering support and involvement from all stakeholders, continued cultural reinforcement and championing by sustainability leaders, robust structures for stakeholder engagement, and a commitment to continuous improvement of environmental practices. Table 10 provides a more detailed breakdown of potential ES practices associated with each maturity stage.

By understanding these distinct stages within the ES maturity model, universities can effectively assess their current position and develop targeted strategies to progress towards more deeply embedded sustainability practices. The journey from "elementary" to "embedded" necessitates a deliberate and well-coordinated approach, ultimately leading to a university culture where environmental responsibility becomes a core value and a guiding principle for all its endeavours.

Table 9: Summary of key research studies on maturity levels of institutional sustainability

Authors	Study Title		1 (Elementary)	2 (Emerging)	3 (Evolving)	4 (Established)	5 (Embedded)
Odważny et al (2019, p.245)	Maturity level of organisation and sustainable development goals.	The label used by the author(s)	Ignoring	Defining	Adapting	Managing	Integrating
		Description of the stages	Procedures for working according to the sustainable development concept do not exist. No sustainable activities exist, nor do informal and immature activities appear. No measures have been applied, and no data has been gathered regarding sustainable development.	Key processes and procedures related to sustainable development are being defined. The first approach is to include sustainable development in strategy. Goals are being measured. Data is being partially gathered and analysed.	Key performance indicators are based on effective resource management and sustainable development. Organizational goals are highly related to resource usage and are spread across several departments.	Some best practice solutions have been implemented within organisations for managing natural resources. The performance of the processes is evaluated and systematically improved while using opportunities and managing risks. Sustainable development is being supported and plays a significant role in managing organisations.	Sustainable development goals are highly interlaying organisational strategies. The processes are designed in a way that allows performance to be achieved effectively and efficiently within the sustainable development concept. They are based on performance, which is analysed comprehensively regularly. Innovative technologies and trends play an essential part in the strategy. Both external and internal resources are being used to ensure higher sustainability. Knowledge level within the crew is measured and developed constantly.

Glover, A., (2012, p.5)	A sustainability maturity model for HE	The label used by authors	Initial	Repeatable	Defined	Managed	Optimising
		Description of the stages	undefined processes, reliance on individual enthusiasm,	simple management follows resources, and successful processes are repeated.	Activities are standardised, and procedures and guidance are followed.	Quantitative controls exist.	Continuous improvement and new initiatives trialled.
Vargas, Mac-Lean, and Hüge (2019)	The maturation process of incorporating sustainability in universities	The label used by the author(s)	Emergence	Popularisation	Formalisation into a governance framework	Reflected in normative changes	-
		Description of the stages	-	-	-	uptake of sustainability as a norm	
Pizzutilo and Venezia, (2021, p.10-11).	Maturity of social responsibility and sustainability integration in higher education institutions:	The label used by the author(s)	Laggard	Aware	Implementer	exploiter	Pioneer
		Description of the stages	Laggard HEIs have no organisational interest in sustainability. Their activities, if any, are sporadic and not coordinated. They are left to the goodwill of some members or concluded rhetorically just for regulation compliance. They believe in	HEIs' stakeholders are aware of the importance of SR and the centrality of universities in facing modern sustainability challenges. Sustainability is perceived as a source of innovation. Pressures for institutionalising a sustainability	The first sustainability-related strategies and policies are implemented, although they are not central to HEI's overall planning. Administrative and research structures and offices are established. Part of the budget is devoted to SR-related programs, and stakeholders interact to achieve HEI's first sustainability goals. HEI's leaders support the process.	HEIs deliver practical social value. Sustainability is an axiom of their culture; operations are oriented towards sustainability, and results are subject to public scrutiny. The HEI continuously audits SR activities, measures results and envisions strategies for improving performance. Campuses, buildings, and daily life are intended to provide living lab experiences for	HEIs set the pace, envisioning further advancements and new frontiers for sustainable development that become new challenges to face and put the maturity of SR integration further ahead. They foster societal co-transformation while addressing stakeholders' demand for a sustainable world. Leaders commonly have a visionary

			fulfilling their responsibility by simply performing their operations as usual.	vision are frequent but not coordinated. No official sustainability structures and policies are in place, nor is sustainability projected in the HEI's long-term strategy.	Nevertheless, sustainability is still considered from a multidisciplinary perspective, and integration is based on a case-to-case basis.	students, staff, and external stakeholders.	perspective, and SR is envisaged as a common purpose.
Kapitulčinová, et, al. (2018)	model of sustainability maturation	The label used by the author(s)	“Business-as-usual university,”	initiation	implementation	institutionalisation	“Sustainable University”
		Description of the stages	a university does not consider Sustainability.	awakening	pioneering	transformation	sustainability eventually becomes fully integrated
Exter, Grayson, and Maher (2013, p.321)	five stages of Corporate Responsibility and Sustainability maturity in HEI	The label used by the author(s)	Denier	Compiler	Manager	Strategist	Global leader
		Description of the stages	Treat it as just a fad.	Will do what accreditation bodies require, except that accreditation and even some of the business school rankings are set to become more demanding about sustainability and CR.	Have specific courses, student clubs, joint networks, specialist faculty and initiatives for the school as an organisation.	Integrate sustainability and CR into the school's mission and purpose through research, teaching, and practice. Each management discipline defines what sustainability and CR mean for its discipline.	Strategist plus global centre of expertise; running joint research and teaching with other schools; contributing to capacity-building through general and dedicated networks; sharing learning in how to embed in business schools

Jabbour et al. (2010)	evolutionary paths in environmental management	The label used by the author(s)	functional specialisation,	internal integration	external integration	-	-
		Description of the stages	sustainability is isolated in an institution. Sustainability is compliance-centred to the demands of government legislation. management or leadership involvement is rare, and a perception is held that being green is costly in (time and money)	A university increases its involvement with sustainability by mobilising projects and improving the input-product relationship. Here, management focuses on immediate improvement and eco-efficiencies.	Involves all areas of the organisation. Sustainability is designed to explore competitive advantages systematically. A vital feature of this stage is that management concentrates on continuous improvement and cultural transformations.		

Source: Compiled by the Researcher

Table 10: Practices typical of each maturity stage of ES institutional culture

Author	Cultural dimensions [based on Schein's model of culture)	ES Aspects	Stages of Culture Change Maturation				
			Level 1 Elementary	Level 2 Emerging	Level 3 Evolving	Level 4 Established	Level 5 Embedded
			Institutional Culture				
Exter, Grayson, and Maher (2013, p.321	Values	Sustainability goals, ideas & targets	Denier- sustainability is treated as just a fad.	Complier- institutions maintain compliance with ranking and accreditation bodies' expectations.	Manager- institutions have specific courses, student clubs, joint networks, specialist faculty and initiatives for the school as an organisation.	Strategist- sustainability is built into the school mission and purpose and integrated through research, teaching, and practice. each faculty & discipline defines what sustainability & mean for their discipline	Global leader: institutions have strategists plus an international centre of expertise; running joint research and teaching with other schools; contributing to capacity-building through general and dedicated networks; sharing learning in how to embed in business schools
Graafland and Smidn 2016.	Artifacts [Physical Manifestations]	Policy	no policy	Weak policy (the university has a written policy statement that is not detailed),	Adequate policy (the university has a detailed, written policy statement, but it only addresses a few issues),	Excellent policy (the university had a detailed, written policy statement, but it still contains some ambiguity around issues.	Firm policy (the university has a detailed, written policy statement for all critical issues)
Soini et al., 2018	Values	University Role in respect to policy making in society	No role or contributions to national policymaking	Advice, support, and national policy analysis.	Provide technical & practical innovations & solutions, co-production of knowledge with industries.	Understands policy making and its impact, influences policymaking through participation & co-production of knowledge.	Co-production of knowledge with policymaking bodies.

Verhulst and Lambrechts, 2015.	Artifacts [Behavioural Manifestations]	Resources and specialisation: information, knowledge, and skills		*SD leaders operate individually, *Information not spread and shared, *Comparable but isolated initiatives in different departments.	*Inventory of SD initiatives in all departments and study programs *Initiatives vary between curricular initiatives, research, outreach and operations, or a combination. * Initiatives target students.	*Local leaders and initiatives learn from one another. * Strong cooperation between several employees and groups. * Information is available, known, shared, and used by all departments and study programs. *Project-based funding allowed local leaders for SD to connect, exchange thoughts, ideas, and expertise, and prepare policy documents.	*New translation process from the central viewpoint to the individual and departmental level. *Information is again gathered and used at the local level. * This stage heads back towards level two.
	Artefacts [Behavioural Manifestations]	Communication organisation and goals during the SD integration process	There is no coordinated communication on the ES		Communication between SD projects		Coordinated communication on SD by committee to employees and students
	Values & core beliefs	changes in the organisational culture during the ES integration process	-	Core values and core competencies focussing on learning, commitment, initiative, cooperation, and respect,	-	Autonomous culture in departments and study programs	Autonomous role of individuals in the organisation
	Assumptions	empowerment and involvement of members during the SD	-	Individuals and initiatives are isolated and not aware of each other	Project funding for SD projects boosts SD integration.	A bottom-up approach to develop models, plans, and	-

		integration process				structures for SD integration	
		Campus Operations					
Tan, et. al. 2014	Artifacts [Physical Manifestations]	Development stages of energy and resource-efficient campus	No energy or resource-efficient campus developments	Energy consumption monitoring, statistics & auditing	Quota management, energy-efficient retrofit	A green campus has complete coherence	
Zhang Williams, Kemp, and Smith (2011)	Artifacts [Physical Manifestations]	Development stages of Waste management	<ul style="list-style-type: none"> *No serious efforts in waste management * No environmental policy on waste management. *General waste bins on campus 	<ul style="list-style-type: none"> * Voluntary paper recycling schemes on campus. *University adopts a “Pay-By-Weight” waste disposal contract. *Reuse and recycling facilities are provided at the University on an ad hoc basis. *The university adopts an environmental policy on waste management as part of its corporate strategy. 	<ul style="list-style-type: none"> *Recruitment of environment/waste managers *Start of Sustainable Procurement Projects * Develop Sustainable Purchasing policy, *Environment and Sustainability Policy *Roll out recycling scheme on campus. *Reduce the number of general waste bins and replace them with recycling bins *Bin and uplift audit *Start Environmental Awareness Week *Furniture reuse scheme *Re-use and recycling project at the halls of residence *Create Annual waste audit events 	<ul style="list-style-type: none"> *Set up a network of Environmental Champions. *Re-tender the Pay-By-Weight contract *Co-mingled recycling scheme on campus *Co-mingled recycling scheme at halls of residence *Pilot mobile phone take-back service 	<ul style="list-style-type: none"> *Continue efforts to improve recycling participation. *Switch to promoting food waste recycling arising from catering areas. *Separate food waste collection *Implement food waste composting

					*Join voluntary organisations such as the Environmental Association for Universities and Colleges (EAUC)/ Department for Environment Food and Rural Affairs (DEFRA)		
Faghihi, Hessami, and Ford (2015)	Artifacts [Physical Manifestations]	The focus of campus sustainability improvement programs	Efficiency-only	Conservation-only without maintenance	Conservation-only with maintenance	Efficiency and Conservation (simultaneously)	Conservation Used to Fund Efficiency

Source: Compiled by the Researcher

Tight coupling within organisations is not binary; it exists on a spectrum from weak to strong (Zucker, 1977). Tolbert and Zucker (1996) delineated three progressive levels of institutionalisation (tight coupling): pre-institutionalisation, semi-institutionalisation, and full institutionalisation. These stages align with three key processes: habituation, objectification, and sedimentation.

1. **Habitualisation:**

Habituation represents the initial stage of pre-institutionalisation. Here, universities respond to organisational challenges by creating new structural arrangements. This level of institutionalisation involves two key aspects:

- **Formalisation:** ES practices become embedded within the university's policies and procedures.
- **Structural Mimicry:** Universities may adopt structures that are not necessarily unique but share commonalities with existing models used by other institutions (Tolbert & Zucker, 1996). However, these structures may initially lack clarity for organisational members, potentially leading to a limited pool of early adopters and a general lack of understanding regarding their purpose and operation. In essence, habituation is characterised by imitation, minimal theoretical justification, and a homogenous group of initial adopters (Tolbert & Zucker, 1996).

2. **Objectification:**

The second stage, objectification, occurs during the semi-institutionalisation phase. It signifies the development of shared meaning or social consensus around the value of these structural arrangements. For successful objectification to occur, Tolbert and Zucker (1996) identify two critical aspects:

- **Risk Assessment and Benchmarking:** Institutions conduct evaluations to assess the benefits and risks of adopting new structures. They also monitor other organisations explicitly and implicitly to understand how they justify the value of similar structures. The more widespread the adoption of a particular structure by different institutions, the more likely decision-makers perceive it as favourable due to the perceived pre-testing conducted by those early adopters. Similarly, widespread adoption can lead to a perception of a structure as optimal, fostering the emergence of consensus or objectification.
- **Championing the Cause:** The presence of champions, individuals with a vested interest in promoting the value of these structures, is crucial at this stage. As structures become more widely diffused and a degree of normative acceptance emerges, the adopter base becomes more heterogeneous. However, some uncertainty regarding the long-term effectiveness of these newly implemented structures may persist (Tolbert & Zucker, 1996).

3. **Sedimentation:**

Sedimentation, the final stage representing full institutionalisation, is "a process that fundamentally rests on the historical continuity of structure, and especially on its survival across generations of organisational members" (Tolbert & Zucker, 1996, p.184). Universities at this stage exhibit minimal resistance from opposing groups, along with continued cultural support and promotion by champions. Furthermore, positive correlations between the implemented structures and desired ES outcomes become evident (Tolbert & Zucker, 1996).

The framework developed by Tolbert and Zucker offers a valuable lens for examining the extent to which practice has become institutionalised. Its particular strength lies in outlining the organisational and structural attributes characteristic of each institutionalisation stage. However,

this model's limitation is its broad nature and its lack of direct application to specific practices such as ES.

The conceptual work of Hautala, Helander, and Korhonen (2018) provides insights into how educational institutions can address looseness when aiming to tighten institutional practices. However, it has not yet been empirically tested. Their work identifies six critical areas for focus when seeking to achieve tight coupling of institutional practices:

1. **Vertical Coupling** refers to the hierarchical coordination between various organisational levels.
2. **Lateral Coupling:** This focuses on coordination between professionals and units/subunits at the same level.
3. **Institutional Coupling:** This emphasises coordination between administrative structures (e.g., timetables and departments).
4. **Inter-Institutional Coupling:** This highlights the importance of coordination with other schools and organisations.
5. **Professional Coupling:** This focuses on increasing the academic autonomy given to staff, allowing them greater freedom in deciding what and how to teach.
6. **Agency-Centred Coupling:** This aims to strengthen teacher agency and collaboration.

Embedding ES may involve identifying loosely coupled segments within the organisation and implementing strategies to tighten those connections. Existing frameworks that propose various stages and maturity levels of sustainability have received some criticism. Bertels, Papania, and Papania (2010) argue that there is a lack of universal agreement on how exactly sustainability becomes embedded within an organisation's culture. Crane (1995) critiques the erosion of the non-instrumental dimension of culture within academia, suggesting that a lack of unified understanding weakens the overall conception of culture. Similarly, Newton and Harte (1997) express concerns that existing models for cultural change often oversimplify complex processes

and overemphasise the role of "change" as a solution to environmental problems. They argue that the field of organisational development still lacks sufficient insight into the hows and whys of cultural change.

Harris and Crane (2002) expand on this critique, suggesting that the current body of work on green cultures often lacks a strong foundation in empirical data. They argue that existing research has yet to provide robust evidence to support claims about the effectiveness of various models, particularly within the specific context of universities (Niedlich et al., 2019; Lozano & Garcia, 2020). This research seeks to address this gap in the literature by examining the concept of tight coupling of ES within universities. By analysing educational institutions' unique challenges and opportunities, this study aims to contribute to a more nuanced understanding of how universities can achieve deeply embedded sustainability practices.

CHAPTER FOUR LITERATURE REVIEW

4.0. Introduction

This chapter presents the literature on decoupling and tight coupling. The chapter begins with a discussion of the continuum of couplings. Also offered is a detailed review of studies on factors of policy-practice and means-ends decoupling. Likewise presented is the review of factors and strategies of tight coupling and culture change. The conclusion of this chapter includes a review of barriers to culture change and a summary of literature gaps.

4.1. Continuum of Couplings

According to Orton and Weick (1990), the word ‘couple’ suggests that any location in an organisation (top, middle, or bottom) contains interdependent elements that vary in number and strength of interdependencies. A dialectical interpretation of coupling is provided, which states that:

“If a system is neither responsive nor distinctive, then it is not a system and can be defined as a noncoupled system. If there is responsiveness without distinctiveness, then the system is tightly coupled. If there is distinctiveness without responsiveness, then the system is decoupled. If there is both distinctiveness and responsiveness, the system is loosely coupled” (Orton and Weick 1990, p.205).

Hautala, Helander and Korhonen (2018) developed a conceptual framework for understanding the continuum of couplings in educational organisations. This writing postulated that there are three forms of coupling, namely, simultaneous coupling, tight coupling, and decoupling. ‘Simultaneous coupling’ refers to “organisational components varying in looseness or tightness of couplings in different relationships and situations (Hautala, Helander and Korhonen, 2018, p.12).

In other words, there can be a coexistence of decoupling and tight coupling within a system. Tight coupling is the notion that internal systems within an organisation respond to the demands of their external environment without distinctiveness (Orton and Weick, 1990). In other words, all parts of an organisation act harmoniously to address external demands such that there is responsiveness to address this demand across all systems, processes, and generations of organisational members (Tolbert and Zucker 1996) (Section 3.4).

According to Elmaghrabi (2014, p.26), decoupling is “an approach where organisations abide superficially to institutional pressure and adopt new structures without implementing the related practices”. It is about how organisations attempt to comply with external demands but do not change their behaviour or practices (Dillard, Rigsby and Goodman, 2004; MacLean, Litzky and Holderness, 2015).

Scott (2014) believes decoupling is the behaviour of organisations that disconnect practice from official policies or prescriptions to work more efficiently and survive. In this research, decoupling means an organisation's disconnect between the principles and actual behaviours concerning ES. This research focuses on the decoupling and tight coupling continuum of coupling, using this to guide the development of the research conceptual framework.

4.2. Decoupling and Environmental Sustainability

This research builds upon the decoupling theory. This theory has two main assumptions (Orton and Weick 1990)¹. The first assumption is that decoupling is a management strategy with

¹ The different aspects to the study of decoupling includes 1) causation which explains the causes of decoupling relating to why some systems are loosely coupled and others are not. 2) Typology focus on the identifying types of decoupling which exists in a system. 3) Effects addresses the desirable effects of decoupled systems. 4) compensations seek out ‘nonobvious sources of order’ that practitioners would use to influence detached systems. 5) Outcomes studies try to ‘predict and measure’ the effects of loose coupling on organisational performance (Orton, and Weick, 1990)

desirable effects (Scott, 2014; Gurău, 2017). Within this view, decoupling is 1) a means to enhance legitimacy (Bromley and Powell 2012) and 2) a legitimate response from organisations to competing and incompatible stakeholder pressures (Scott 1987). In other words, decoupling can lead to positive organisational performance (Haack et al., 2012; Hensel and Guérard, 2019). Within this assumption, decoupling has desirable effects, such as creating a situation where a university can balance competing interests and have incentives to decouple ES from formal work activities and processes because it enhances legitimacy with stakeholders.

According to Gordon et al. (2019) and Graafland and Smid (2016), organisational decoupling can happen symbolically or ceremonially. Symbolic decoupling infers a situation where visible signals establish legitimacy; however, underlying operational processes may hold inconsistencies. In contrast, ceremonial decoupling is when an organisation finds it challenging to comply with expectations fully and consistently due to multiple and conflicting external requirements. That is to say, a university may symbolise ES by signalling its benefits without incurring the costs of high-quality implementation.

For instance, a university can seek recognition for actions primarily to satisfy external pressures (e.g. from customers, students and funding bodies) by obtaining relevant ES recognitions (e.g. making green rankings) to signal commitment and appear legitimate rather than implement initiatives or make profound changes that can have a substantive effect on the activities and or culture of the organisation (Alghamdi, Heijer and Jonge 2017, Tilbury 2013, Galpin, Whittington, and Bell 2015, Filho et al., 2018).

For example, a university can promulgate retrofitting energy conservation solutions like lighting in a building without “institutionalising energy-efficiency requirements to limit the energy used per square foot.” They could “place grandiose and expensive recycling bins in public places while allowing waste generation to escalate, creating an isolated success with no comprehensive

waste-reduction plan” (Sharp 2009, p.2). Furthermore, they may include ES in policy statements without embedding relevant initiatives into everyday activities.

Rasche and Gilbert's (2015) findings on sustainability decoupling in university curricula show examples of symbolic decoupling. The study reported that some business schools decouple responsible management education from their curriculum by a) not redesigning their curriculum substantially, b) putting sustainability topics primarily into electives and avoiding integration into the core curriculum, c) tolerating planned changes to curriculum that do not encourage embedding of ES into actual classroom practices, such as, instructors/tutors having instructional autonomy to decouple parts of the syllabus from actual teaching practice; d) avoid integration into their culture by implicitly including in educational experiences messages that are inconsistent with what is formally taught about responsible management (Rasche and Gilbert 2015).

In other words, ES implementations exist on the surface; however, they are not tightly coupled to the everyday operational decisions and activities of institutional members (Nicolino and Barros 2016). In this instance, decoupling becomes a strategy a university uses to appear responsive to external demands, calling for a more robust institutional engagement with ES but without changing systems or norms to support this practice (Paino 2013).

The second assumption on decoupling is that it is an unsatisfactory condition that should be reversed since practices exist in name only and without resources and support from organisational functions (MacLean, Litzky and Holderness 2015, Behnam, and MacLean 2010). Within this perspective, decoupling is perceived to be a moral organisational failure (Bromley, Hwang and Powell 2012, Gurău 2017), A threat to organisational legitimacy (Maclean and Behnam 2010), which leads to jeopardised legitimacy (Legitimacy Façade) if found out by society or stakeholders (Snelson-Powell, Grosvold, and Millington 2016).

According to Dambrin et al. (2007), when an organisation decouples stakeholders' demands from actual business practices, tight coupling remains incomplete and even confusing for organisational members (MacLean, Litzky and Holderness 2015, Gurău 2017, Hensel and Guérard 2019). Paino (2013) notes that decoupled systems become difficult to change over time as institutional actors view change efforts as intrusions into the existing culture.

This research aligns with the second assumption of decoupling. It is upheld within this research that decoupling ES from routine institutional practices is a condition that should be reversed in universities. This is because a decoupled program or structure for ES is akin to window dressing, which makes it difficult for universities to meaningfully contribute to addressing ES challenges in their context (Samuelson and Arfwidsson 2011). However, Hensel and Guérard (2019) provided a counter-intuitive argument that decoupling exposure may weaken norms rather than reinforce them.

Meyer and Rowan (1977, p. 343) insist that there are negative consequences to decoupling (extended in this research as ES decoupling), including “1) structural elements being only loosely linked to each other and activities; 2) rules being violated; 3) unimplemented decisions, or if implemented have uncertain consequences; 4) technologies with problematic efficiency; and 5) evaluation and inspection systems subverted or rendered vague as to provide little coordination”.

According to Hautala, Helander, and Korhonen (2018, p.15), decoupling can result in a lack of coordination, unclear goals and technology, different means leading to the same end, difficulty and resistance to change with planned unresponsiveness, lack of contact among participants, facilitation of social misrecognition, challenges in manager-academics' work, and ambiguity and obstinacy.

Decoupling has been researched in corporate settings but is still not understood in higher education (Elken and Vukasovic 2019). The findings of Elken and Vukasovic from the investigation of research studies focused on decoupling in universities suggest the overall research studies used decoupling as a background concept and only superficially explored the idea itself. Thus, research becomes timely in filling this knowledge gap by focusing on factors that further ES decoupling in a university context.

4.3. Types of Decoupling

Two main types of decoupling exist policy-practice decoupling and means-ends decoupling (Bromley and Powell 2012). Policy-practice decoupling refers to inconsistencies between policies and program implementation (Snelson-Powell, Grosvold, and Millington, 2016; Graafland and Smid, 2016). For example, Delucchi's (2000) research of liberal arts colleges found that some schools adopted professional programs without reflecting the change in their mission statements. Another study by Lutz (1982) found that a university president promoted change despite faculty opposition and failed to reflect the outcome of the university policy and procedures.

On the other hand, means-ends decoupling refers to when, despite coupling policies and practices, intended ends are not achieved because the implementation of said policy or practice is compartmentalised from core goals (Graafland and Smid 2016, Bromley and Powell 2012). According to Stål and Corvellec (2018), means-ends decoupling induces the diversion of resources away from the core task, generating internal conflicts between the means employed and ends (outcomes). Thus, in this thesis, means-end decoupling is defined as where resources or methods (means) implemented or used for driving forward, ES fail to achieve the desired environmental outcomes or intended goals (ends).

Hladchenko and Westerheijden's (2018) qualitative study of academic identities under means-ends decoupling in one Ukrainian university showed how means-ends decoupling at the nation-state level resulted in institutional complexities that hindered decreased teaching workload. This decoupling constrained academic means and ends as they could not meet the new demands of scientific titles prescribed by global models.

This research adopts Bromley and Powell's (2012) policy-practice and means-ends decoupling framework as the central interpretation and analysis lens for identifying types and causes of ES decoupling in NESU. Numerous organisational factors can cause policy-practice and Means-end decoupling. According to Orton and Weick (1990), three reoccurring factors of decoupling are a) causal indeterminacy, b) fragmentation of the external environment, and c) fragmentation of the internal environment.

4.4. Factors of Policy-Practice and Means-Ends Decoupling.

4.4.1. Causal Indeterminacy

Causal indeterminacy is when there are unclear means-ends and Policy-practice connections (Bromley and Powell, 2012; Bromley, Hwang, and Powell, 2012). Orton and Weick (1990) argued causal indeterminacy in terms of policy-practice decoupling may result from bounded rationality (e.g., limited information-processing capabilities) and selective perception (e.g., not understanding the operation of variables). An organisation may find it challenging to coordinate actions and will opt to share a few weak variables (e.g., weak ES actions), leading to decoupling. Leal Filho et al. (2019a) back this claim, arguing that 'misinformation about sustainability' and lack of awareness can affect how sustainability becomes integrated into an organisation.

Second, causal indeterminacy in terms of means-ends decoupling may result from uncertainties, such as unclear links between means (e.g., practices) and ends (outcomes) (Orton and Weick

1990). Causal indeterminacy may also result from ‘ambiguity’ (Orton and Weick 1990). Three ambiguities can exist in organisational green routine: goal ambiguity, means-ends ambiguity, and social-environment ambiguity. Goal ambiguity refers to “when goals directed at a practice are not formulated clearly” (e.g., unclear goals for ES) (Boons and Strannegård 2000, p.13). Spellerberg, Buchan, and Englefield (2004) argue that the minimum required for a successful ES programme is for a university to establish goals (targets), monitoring and annual reporting.

Means-ends ambiguity refers to “the extent to which there exists an unclear relationship between the ends that certain management routines intend to serve and the means they incorporate to do so” (Boons and Strannegård 2000, p.13). This ambiguity can exist regarding limited structure or guidance on implementing ES. Ambiguity may leave implementation open to interpretations and force organisational members to decouple expectations from daily operations (Behnam and MacLean 2011). Finally, social-environment ambiguity refers to “uncertainty that can exist about the range and probability of future states of the social environment, placed by governmental agencies and societal actors on firms” (Boons and Strannegård 2000, p.13).

4.4.2. Fragmentation of the External Environment

‘Fragmentation of external environment’ is related to the decoupling of talk from walk, which occurs in a system due to an organisation encountering incompatibilities in the expectations and dispersed stimuli from various stakeholders (Orton and Weick 1990, Elken and Vukasovic 2019, Liu, et al. 2020). For example, universities interact with a wide range of actors (e.g., Government, students, communities, etc.), from which they gain information and knowledge, which increases the heterogeneity of demands that they are to adopt. So, they may be unable to meet up with these incompatible expectations.

For example, conflicts between environmentalism and the economic interests of a university may lead to delays in the expansion of ES projects. Wright and Wilton (2012) suggested that universities have conflicting choices between investing in ES or succumbing to the pressure to invest in increasing service levels. Hoover and Harder (2015) highlight tensions between competition culture and the university-wide nature of sustainability initiatives linked to systemic fragmentation.

External environment fragmentation can also include decoupling due to the absence of external stimulus or sanctions from normative and conceive stakeholders pushing for embedded integration (Orton and Weick 1990). For example, decoupling may occur due to the absence of external mechanisms for non-conformity (Behnam and MacLean 2011). That is, ‘if inspection, evaluation, and control activities are minimised or limited by external regulatory bodies, institutional activities risk becoming a façade of conformity.

Also, information asymmetries between a university and its constituents may lead to decoupling (Moratis 2016). Moratis argued information asymmetry becomes high when “a) a university is not accredited; b) does not have a position on rankings or c) serves clients that are not intrinsically motivated by sustainability but recognise the market value of the topic” (Moratis 2016 p.237). According to Boxenbaum and Jonsson (2017), while decoupling, the organisation may avoid close inspection or scrutiny or try to control the scrutiny process, so they are not exposed as fraud.

4.4.3. Internal Fragmentation

Stål and Corvellec (2018) studied the decoupling of circular economy business model implementation in seven Swedish apparel firms. This study found that internal separation allowed companies to buffer their business model while decoupling from emerging demands.

Internal fragmentation, such as cultural diversities and bureaucracies, can cause decoupling (Orton and Weick, 1990).

If individuals experience red tape between practices and due processes, they may lose legitimacy for institutionalised practices (Dick 2015). For instance, evidence suggests that employees believe environmental management implementation adds more bureaucracy and constraints to work activities (Boiral, 2003; Boiral and Sala, 1998). Thus, perceptions of bureaucracy may cause internal resistance, leading to decoupling and, eventually, low-quality sustainability implementation.

Furthermore, a lack of assurance mechanisms such as monitoring compliance, reporting systems and information dissemination (e.g., documents, emails, and other written reminders) can easily cause decoupling from actual organisational practice (Behnam and MacLean 2011). Additionally, cultural complexities, such as multiple and contradictory values, beliefs, and practices, can lead to decoupling (Browaeyns and Baets 2003, Rasche and Gilbert 2015).

Also, decoupling can result from resource limitations such as time, cost, and skills. Indeed, seeking high-quality ES tight coupling may result in higher costs and more significant organisational disruptions than a low-quality implementation. This is because high-quality tight coupling requires considerable commitments of time and resources such as funding commitments, continuous training of staff, regular reviews and promotions, internal audits, etc., all of which are costly (Aravind and Christmann 2011). Therefore, a university may choose to decouple upon the realisation that more resources are required to develop and maintain ES than was initially expected (Moganadas, Corral-Verdugo, and Ramanathan, 2013; Bellantuono et al., 2016).

Austen (2016) explained the importance of distinguishing between decoupling due to a lack of capacity versus decoupling due to a lack of will. Managers may want to use pressures (e.g., limited access or scarcity of resources) as a theoretical explanation for symbolic manipulation (Austen 2016). Austen argued that by calculating opportunities, such as weighing the benefits of misconduct against the costs of breaking the rule, managers will choose misconduct without checking their moral compass if its benefits outweigh the cost of rule-breaking.

Rasche and Gilbert (2015, p.239) theorised conditions under which business schools will likely decouple responsible management education from their core organisational practices. They argued decoupling would occur if schools were faced with; “1) resource constraints; 2) overt and covert resistance to change; 3) competing institutional pressures, and 4) they perceive institutional demands as ambiguous”.

Moratis (2016) provides some empirical backing to the work of Rasche and Gilbert. His finding from a survey study of 25 Dutch MBA program managers in the Netherlands found that barriers (e.g., internal commitment) rather than constraints (e.g., resource constraints) caused the decoupling of responsible management education. That is, lack of interest rather than resistance to change caused decoupling.

Furthermore, ‘fear of reputation damage’ can cause universities to refrain from adopting initiatives for sustainability (Moratis 2016). As there are potentially severe reputational risks if schools are not living up to the commitment, they may choose not to adopt or commit to initiatives despite the opportunities these initiatives provide (Moratis 2016). Also, Snelson-Powell, Grosvold, and Millington (2016) found from their telephone interview with forty deans of UK business schools that decoupling is mainly associated with business schools that are large, wealthy, or lacking in expertise, while tight coupling is related to small, highly prestigious business schools.

Therefore, decoupled structural arrangements for ES may be found in Scottish universities because they are large (size) world-class education suppliers (wealthy). As Moratis (2016) notes, decoupling may overlap and manifest differently for academic and non-academic institutions, as well as public and private institutions. More specifically, it is crucial to consider the characteristics of different schools, including size, ranking, international orientation, accreditations, and reputation.

4.5. Process of Change for Sustainability

The change literature has well-established guidelines for driving change irrespective of the type of needed change. When planning transformational change, an essential aspect of consideration is the change process (Appelbaum and Vecchio 1995; Freed 1998; Dobрева 2015). Thus, the change process is a critical element to consider for successful change. According to Dobрева (2015), organisations must carefully examine the steps involved in successful change towards sustainability.

There is a broad spectrum of opinions (Table 11) on the change process to successfully deliver change for sustainability. Some researchers support adopting processes from general literature (e.g., Lewin 1951; Richards 1988; and Kotter 1995; models of change) (Exter, Grayson & Maher 2013), while others have recommended changes processes specific to sustainability (Doppelt 2003; Dunphy et al. 2003; Exter, Grayson & Maher 2013 and Hayes 2014).

Table 11: Summary of research studies on the process of change for sustainability

Authors	Process of Change
Exter, Garyson, and Maher (2013)	<ol style="list-style-type: none"> 1. Agreement on the task ahead, clear recognition, and support for the change is needed. 2. Diagnosis of the organisation, enablers, and barriers, and identifying the “to be” state. 3. Identifying and skilling the leaders of change. 4. Stakeholder engagement via change projects as tactics for implementing the change process. 5. Dealing with obstacles, complexities, and conflict to sustain the change.
Velazquez et al. (2006)	<ol style="list-style-type: none"> 1. Establish a sustainability vision. 2. Establish a mission. 3. Create a university-wide sustainability committee. 4. Adapt strategies to enhance the education, research, outreach and campus operations and Practices.
Savely, Carson and Delclos (2006-	<p>Phase I:</p> <ol style="list-style-type: none"> 1. Gain top management support. 2. Define accountability structure. 3. Define legal requirements. 4. Review operations and identify activities that may affect the environment. <p>Phase II</p> <ol style="list-style-type: none"> 5. Develop an environmental policy. 6. Create environmental programs with objectives and targets and monitor and measure environmental operations. 7. Establish a document control system and documentation. 8. Create and implement required environmental procedures. 9. Training and communication <p>Phase III</p> <ol style="list-style-type: none"> 10. Audit by internal and external parties
Verhulst and Lambrechts (2015)	<p>Stepstone 1: Vision</p> <ul style="list-style-type: none"> • Horizontal integration of sustainability in the general vision • Vertical defining a specific vision on SD. <p>Stepstone 2: Mission</p> <ul style="list-style-type: none"> • Sign a (local, regional, national, or international) sustainability charter • Define a specific mission for sustainable higher education in the university. <p>Stepstone 3: Steering committee</p> <ul style="list-style-type: none"> • Broad option: central sustainability coordinator • Decentral option: local sustainability coordinators • Combined option: central + Local • Cross-sectoral option: coordinator + existing committees <p>Stepstone 4: integrate strategies:</p> <p><u>General strategies</u></p> <ul style="list-style-type: none"> • Policy planning: prepare policy instruments to support the integration of sustainability in education research, outreach, and operations.

	<ul style="list-style-type: none"> • Communication about efforts in sustainability makes the communication process sustainable. • Networking: local, regional, national, and international corporation <p><u>Specific strategies</u></p> <p>Education: Content- education about sustainability Methodological- education for sustainable development (ESD) Research and outreach: content focus – about methodological focus – for Operations: social corporate responsibility holistic notion of ‘triple bottom line.’</p> <p>Stepstone 5: evaluation</p> <ul style="list-style-type: none"> • Qualitative indicators • Quantitative indicators <p>Stepstone 6: Reporting</p> <p>Stepstone 7: certifications and accreditations</p>
Bertels, Papania and Papania (2010)	<p>Adopt Formal Practices that establish rules & procedures.</p> <ol style="list-style-type: none"> 1. Strategies for clarifying expectations. <ul style="list-style-type: none"> • Codify • Integrate • Assign • Train • Reward • Assess • Verify/Audit 2. Strategies for instilling capacity for change <ul style="list-style-type: none"> • Learn • Develop <p>Adopt Informal practices that affect values and behaviours.</p> <ol style="list-style-type: none"> 1. Strategies for fostering commitment. <ul style="list-style-type: none"> • Reinforce • Manage talent. • Communicate • Signal • Engage 2. Strategies for building momentum for change <ul style="list-style-type: none"> • Share • Re-envision. • Experiment • Champion • Raise awareness
May et al., 2009	<p>Normalisation process theory</p> <ul style="list-style-type: none"> • Coherence-Building • Cognitive Participation • Collective Action • Reflective Monitoring

Source: Compiled by the Researcher

The field of change management offers a rich body of knowledge and established guidelines for navigating organisational transformation, regardless of the specific change initiative (Appelbaum & Vecchio, 1995; Freed, 1998; Dobрева, 2015). When embarking on a journey towards ES, careful consideration of the change process itself becomes an essential element for success. As Dobрева (2015) emphasises, organisations must meticulously examine the sequential steps involved in achieving successful sustainability transformations.

A diverse range of perspectives exists regarding the optimal change process for driving sustainability initiatives (Table 11). Some scholars advocate for the adoption of established models from the broader change management literature, citing frameworks such as those proposed by Lewin (1951), Richards (1988), and Kotter (1995) (Exter, Grayson & Maher, 2013). These models offer a general structure for guiding change initiatives, regardless of the specific focus. Conversely, other researchers propose the merits of change processes explicitly tailored to the context of sustainability (Doppelt, 2003; Dunphy et al., 2003; Exter, Grayson & Maher, 2013; Hayes, 2014). These sustainability-specific models acknowledge the unique challenges and opportunities inherent in environmental initiatives, potentially offering a more targeted approach for universities seeking to embed ES practices.

Dunphy et al. (2003) posit that Corporate Social Responsibility (CSR) development, which can be extended to encompass ES, unfolds through organisational change processes, regardless of whether the intended change is incremental or transformative. Doppelt (2003) cautions against a simplistic understanding of the change process, emphasising that it can be messy and characterised by back-and-forth movements, setbacks, and advancements. To illustrate this complexity, Doppelt outlines a seven-step model:

The initial three steps – altering dominant mindsets, establishing diverse and inclusive teams, and adopting sustainability visions and principles, collectively set the stage for transformation

by establishing new organisational mental models and frameworks. Steps four and five – developing operational and governance strategies for change and relentlessly communicating them, provide a platform for designing and testing novel approaches to everyday work and operations. Finally, the model emphasises the importance of fostering continuous learning and embedding sustainability practices into standard operating procedures, which are crucial mechanisms for ensuring long-term growth and adherence to sustainability principles.

This research adopts the NPT framework (May et al., 2009) to capture the dynamics of cultural change associated with ES integration. Originating in sociology, NPT was developed to understand the implementation, embedding, and, ultimately, the routine integration of practices and complex interventions within healthcare settings (McEvoy et al., 2014). The core concept of "normalisation" in NPT refers to "the work that actors do as they engage with some ensemble of activities" (May & Finch, 2009, p. 540). These activities may involve new or modified ways of thinking, acting, and organising within an organisation. Ultimately, normalisation entails the seamless integration of these practices into the existing social fabric of knowledge and established practices.

NPT focuses on three interconnected challenges:

1. **Implementation:** This refers to the mechanisms by which social organisations translate practices into concrete actions.
2. **Embedding:** This stage involves the routinisation of these practices within individuals' everyday work.
3. **Integration:** This focuses on sustaining embedded practices, ensuring their continued application and reproduction within the social matrices of the organisation (May et al., 2018).

NPT theorises the following core principles:

1. The successful embedding or normalisation of practices within social contexts depends heavily on the individual and collective efforts of actors working to enact them.
2. Four fundamental mechanisms – coherence, cognitive participation, collective action, and reflective monitoring – are all expressions of human agency that either promote or hinder the work of enacting a practice.
3. The ongoing production and reproduction of practices necessitates continuous investment by agents in a set of actions carried out over time and space (May et al., 2009, p.2).

This framework offers a valuable lens for understanding and explaining the factors that influence the success of interventions (May & Finch, 2009). However, Sauder and Espeland (2009) raise concerns about NPT potentially imposing a sense of homogeneity through its structure, overlooking nuances within specific social contexts. This research adopts the four core theoretical constructs from NPT (coherence, cognitive participation, collective action, and reflective monitoring) to explore how ES practices can become tightly coupled within the institutional culture of a university. Tight coupling, in this context, refers to the firm attachment, embedding, or normalisation of these practices (May et al., 2009; McEvoy et al., 2014; Owens & Charles, 2016). The rationale for adopting NPT in this study is multifaceted:

- **Alignment with Research Objectives:** NPT's focus on practice embedding and integration aligns perfectly with this research's core objective, understanding how ES practices can become tightly coupled within the university culture and daily routines of its members.
- **Dynamic Context:** NPT provides an epistemological framework that accommodates the dynamic interplay between context, factors, and outcomes

(Owens & Charles, 2016; Wood, 2017; Scantlebury et al., 2017). Wood (2017) highlights the potential of NPT in educational contexts to reveal the complexities inherent in change processes. While its application to ES research is still limited, NPT offers the opportunity to extend knowledge by examining its effectiveness in a new context.

- **Structured Lens for Analysis:** This theory provides a structured and explanatory framework for categorising and interpreting findings related to the tight coupling of ES (McEvoy et al., 2014; May et al., 2009). This structured approach facilitates a coherent analysis while remaining adaptable to incorporate emergent experiences and practices encountered.

This research identifies interesting parallels between the Normalization Process Theory (NPT) and the work of Doppelt (2003) on navigating successful change towards sustainability. Doppelt argues for a sequential process, suggesting that:

1. A compelling rationale for change is essential to garner the participation of key stakeholders in developing sustainability plans (Doppelt, 2003, p.88).
2. The formation of strong transition teams is a prerequisite for establishing an inspiring new organisational purpose and vision aligned with sustainability goals.
3. Only after a clear understanding of the desired future state and the necessary departures from past practices emerge can effective sustainability strategies be formulated (Doppelt, 2003).

These propositions closely align with the core NPT constructs of coherence, cognitive participation, and collective action. Coherence refers to the internal consistency and clarity of the change initiative, mirroring Doppelt's emphasis on a well-articulated case for change. Cognitive participation aligns with Doppelt's focus on stakeholder involvement in developing a

shared vision, and collective action resonates with the need for strong teams to translate vision into action.

Despite the strengths of NPT, some limitations identified by McEvoy et al. (2014) warrant consideration. One concern pertains to data analysis. There is a potential risk of forcing data into pre-determined NPT categories, potentially overlooking nuances that fall outside the established framework. Additionally, misunderstandings of the theoretical constructs themselves can lead to analyses that deviate from the core principles of NPT (McEvoy et al., 2014).

This research adopts several strategies to address these limitations. First, during data analysis, a flexible approach is employed. While NPT categories will guide the analysis, the researcher will remain open to the emergence of new themes that may not fit neatly into pre-existing constructs. These themes will be identified and reported as distinct findings within the research. Second, to ensure a clear understanding of the NPT constructs, the researcher will provide precise definitions of the terminology employed throughout the study. This focus on definitional clarity will mitigate the risk of misinterpreting core concepts and ensure a theoretically sound analysis.

4.5.1. Tight coupling Environmental Sustainability into Institutional Culture-The Normalisation Process Theory approach

4.5.1.1. Coherence

The NPT constructs ‘coherence’ is about meaning and sense-making (Owens and Charles 2016). The actions and interests of individuals can be a central determinant of the decoupling between policies and practices. Therefore, organisational members may need to articulate appropriate meaning and work out reasonable uses for imported practice before such practice can become accepted. In other words, implementing ES practice must first make sense as a cognitive and behavioural ensemble (May et al., 2009) before actors can collectively invest meaning in it (May

et al., 2018). Sense is made as individuals undertake or give active justification through internal and external sources, which persuade other participants of the value of adopting the practice. Thus, recoupling through coherence would require factors that promote actors' apprehension of practice as meaningful (May et al., 2009).

For example, Levy and Marans (2012) found that an enhanced understanding of environmental challenges or their potential solutions and having procedural knowledge can influence individuals' pro-environment behaviours. Their evidence also indicates that prompts such as providing reminders to individuals to behave in an environmentally responsible manner help to effect change. Azar and Al Ansari (2017) found from their study of 227 campus residents in Abu Dhabi that creating awareness and communication helps improve campus sustainability. They reported that though energy-saving awareness does not directly translate to workplace actions, respondents who have received pro-environmental communication from facility management or engaged in related discussions with peers reported significant energy-saving levels. Similarly, Lozano (2006) argues that clear understanding is vital for sustainability tight coupling in universities, purporting that information should be provided to all stakeholders through different media (such as the internet, education, etc.), as this is essential and fundamental.

NPT also recognises varied elements that can contribute to understanding new practice purposes and benefits. These include (a) 'differentiation' of how the new practice differs from existing practise; (b) 'communal specification' such as allowing staff to build a shared understanding of aims and potential benefits of new practice; and (c) providing 'individual specification' necessary for staff to understand personal responsibilities and nature of the new practice. This is to help them better understand how their work will change because of the implementation of new practices. These elements allow actors to understand the benefits and importance of new practice (internalisation), which is pivotal to holding the loosely coupled system together (May et al., 2018; Owen and Charles, 2016; Wood, 2017).

For example, Lozano (2006) argues that understanding and meeting individuals' needs helps develop an understanding of sustainability. He believes that if the needs of individuals are not identified and met, they will not internalise sustainability, and the institution will never be sustainable. Thus, internalisation and work allocation are necessary as progress is made to couple a practice (May et al., 2009; McEvoy et al., 2014; Owens and Charles, 2016; Wood, 2017).

Furthermore, meaning and sense-making can be fostered through shared values. According to Orton and Weick (1990), shared values are crucial to holding loosely coupled systems together, as values bring about an agreement. Values can be vital in defining desired behaviour modes and establishing shared norms and motivations for work in an organisation (Ribeiro et al., 2016). ES embedded in organisational values can inform setting goals, standards, norms, and expectations and determining and influencing employees' fit, decisions and behaviours (Galpin, Whittington, and Bell 2015; Kang and Xu 2018).

Values can be fostered through analysis of history, identification of heroes and heroines, enhancement of ceremonies and rituals, and cultivation of stories and storytellers (Orton and Weick 1990, p. 213). Expressing ambitions and values can also help articulate beliefs, identities, and frameworks for decision-making that become embedded in the university and inspire people to enact or recouple relevant change (Rasche and Gilbert 2015).

Kantabutra and Saratun (2013) found that strong cultures of ES had explicit core values such as harmony, altruism, mastery, determination, originality, integrity, and leadership, developed into culture through communication, training, recruitment and selection practices. Pedersen, Gwozdz, and Hvass (2018) study found that values characterised by flexibility, trust, creativity, openness, collaboration, and discretion can reap commercial benefits from business model changes, compared to organisations rooted in values of stability and control. Ribeiro et al. (2016) identified twenty pro-sustainability values from their case study that can be held for ES at staff and student levels.

These institutional level values are 1) conservation of nature for future generations; 2) sustainable use of natural resources; 3) holistic and coordinated teaching; 4) trustful cooperation; 5) interdisciplinary research; 6) participation in decisions; 7) foresighted and creative thinking; and 8) open-mindedness. Whereas staff and students had values which included 9) appreciation and mutual respect; 10) friendly, cooperative working atmosphere and social interaction; 11) openness, trust and honesty; 12) spirit of research, science and developing solutions for existing society and practice problems; 13) networking and inter-disciplinary exchange of know-how and experience; 14) critical thinking; 15) cooperation and teamwork; 16) integral and systemic reflection; 17) rich diversity; 18) personal development and following one's path; 19) taking over responsibility for the environment; and 20) to protect, preserve and respect nature for future generations.

Evidence suggests that policies or strategy statements create coherence for ES and remain a university's identity marks (Kang and Xu, 2018; Ramísio et al., 2019). According to Filho et al. (2018), policies are cultural artefacts that offer a basis for systematic initiatives across an institution. Policy refers to “a company’s environmental intention declared externally or internally in formal arguments, including written and published symbolic statements, declarations and slogans about environmental management” (Graafland and Smid 2016, p.234).

According to Lozano (2006), sustainability made explicit in universities’ policies, institutional mission, strategy, and planning can facilitate the embedding of the concept. The value of policy statements in retrospect to actual tight coupling is a fierce academic debate. While some scholars argue policy is the first step towards implementation, others have remained critical of the gap between policy claims and actual implementation (Filho et al., 2018). They claim universities' ES policy does not equate to engagement with ES issues (Filho et al., 2018). Thus, a university can have a policy on ES, yet ES principles are not institutionalised across all systems and processes.

4.5.1.2. Cognitive Participation

The second core construct within NPT, cognitive participation, delves into the essence of how actors and individuals within an organisation build and sustain their engagement with a new or modified practice (Jones et al., 2016). McNaughton et al. (2020) situate cognitive participation squarely within the planning phase of tight coupling. Here, the focus is on the intellectual and organisational efforts undertaken by individuals as they contemplate and prepare to embrace a practice. Four interrelated mechanisms, initiation, enrolment, legitimation, and activation, underpin this construct (Owen & Charles, 2016).

The first mechanism, initiation, emphasises the importance of identifying key participants who will champion and drive forward the new practice (McNaughton et al., 2020). This may involve defining and organising the actors, time, energy, and intellectual resources required to embed the new practice (May et al., 2009; Owen & Charles, 2016; Wood, 2017). Essentially, initiation asks whether actors possess the necessary competencies and skills to engage with and support the new practice.

Enrolment focuses on how actors organise themselves and others to contribute collectively to the implementation of the new practice (McNaughton et al., 2020; Carroll & Conboy, 2019). It ensures that the right people with the appropriate skill sets are available to undertake the necessary work. Enrolment may necessitate granting participants autonomy in organising their work and defining activities and procedures they believe are crucial for successful implementation and long-term sustainability (Wood, 2017). Winkler, Etter, and Wehmeier (2017) suggest that decentralisation can foster autonomy. By empowering individuals to find flexible and reliable solutions that align with their specific needs, decentralisation encourages ownership of the new practice, facilitating its integration within the organisational culture rather than imposing it from above (May et al., 2009).

Legitimation centres on the belief held by participants that their involvement in embedding the practice is both appropriate and impactful (May et al., 2009). McNaughton et al. (2020) equate legitimation with the perception of practice being valid and worthwhile (Wood, 2017). This sense of legitimacy fuels individual commitment, ultimately enhancing the practice's chances of becoming tightly coupled within the institutional culture.

Activation signifies the collective effort undertaken by actors, once transformation has begun, to define the actions and procedures needed to sustain the practice over time (May et al., 2009; Carroll & Conboy, 2019). In essence, the personal commitment demonstrated by actors (e.g., university staff) to integrate ES into their daily routines signifies an implicit agreement with and engagement in practice.

Levy and Marans (2012) highlight the power of "buying in" to environmentally sustainable practices. Their research suggests that individuals who endorse their organisation's eco-friendly initiatives are more likely to commit to these practices and translate their commitment into responsible behaviours. Several strategies can ignite cognitive participation. Hall et al. (2017) found that actively involving staff, residents, and relatives in decision-making processes regarding monitoring technologies in care homes for dementia patients fostered cognitive participation. Conversely, their lack of involvement led to fragmented and uncertain knowledge about the technology's functionality and its alignment with the home's care philosophy, ultimately hindering its successful integration.

Building trust and fostering teamwork across all staff levels, coupled with opportunities for learning from peers, further contribute to enhanced cognitive participation, as evidenced by Jones et al. (2016). Furthermore, Hooker et al. (2015) highlights the importance of "good fit" – the ease with which a new practice integrates with existing workflows – in enhancing actors' cognitive engagement. Hogan-Murphy et al. (2021) identifies strategies such as championing

the benefits of a new practice through effective communication, selecting early adopters, and providing multi-disciplinary team support as crucial facilitators in building cognitive participation.

In conclusion, Cognitive participation tackles the following questions: Are key people influencing a newly imported practice? Do participants or actors feel they can and should contribute to the new practice? Do they think they can organise themselves to contribute to the new practice? And whether participants feel that they can define how they will use it. (Hall, et al., 2017).

4.5.1.3. Collective Action

The third construct of NPT, collective action, focus on adopting new practices or innovation (Owens and Charles 2016). Collective action exposes individual and organisational activities needed to couple a decoupled practice. Enhancing collective action may entail encouraging interactional work within the organisation (interactional workability). Interactional work can be fostered among individuals, among subunits, between hierarchical levels, among ideas, and between activities (Orton and Weick 1990).

Bellantuono et al.'s (2016) findings support the claim that interactional work may help foster greater adoption of ES on campus. They found that resource integration (internal) including, enhancement of cross-departmental collaborations, creation of interdisciplinary and transdisciplinary research on sustainability-related topics, as well, resource integration (external) such as collaborations with other universities, having tracks of excellence in ES research, more active participation with international networks, participation and organisation of international conferences on environmental issues; and launching events (e.g. conferences and workshop; meetings with politicians) helped to increase sustainability adoption on a university campus

(Bellantuono et al., 2016). Kang and Xu (2018) also found that building partnerships is vital to enhance the participation of stakeholders. Sharp's (2009) study at Harvard University revealed that effective interdepartmental, interdisciplinary, and multitier engagement in campus sustainability helped advance sustainability efforts.

Resourcing in terms of physical resources, time, and execution of procedures (contextual integration) can support a practice's continuous production and reproduction (May et al., 2009; McEvoy et al., 2014; Owens and Charles, 2016; Wood, 2017). Bellantuono et al. (2016) found two sets of resources were used to develop green campus projects in one Brazilian university, namely, property-based and knowledge-based resources.

Property-based resources include facilities and equipment for laboratories and classrooms, internet connection and computer facilities, and online access to scientific journals and books. Knowledge-based resources include “wide knowledge and know-how in fields of engineering and architecture, high-quality publications, research projects, national and international collaborations with academic institutions, research centres, and companies, awareness and knowledge of the complex problems” (Bellantuono et al., 2016, p.222). According to Sharp (2009), allocating annual funding for piloting and experimentation can serve as a ground for the learning progress required for organization-wide progress toward ES.

Leadership is another valuable factor for garnering collective action needed to tight-couple ES practices in organisations (Lozano, 2006; Sammalisto, Sundström and Holm, 2015). Jang, Zheng, and Bosselman (2017) confirm from their quantitative study of 218 US restaurant managers that top managers' values and leadership can significantly advance environmental commitment. According to Orton and Weick (1990), three forms of leadership (enhanced, subtle, and one-on-one) are essential. Enhanced leadership is a "strong" leadership that unifies and clarifies goals and practices. 'Subtle' leadership provide centralised direction and coordination

while recognising the value of increased discretion. In contrast, one-on-one leadership refers to leadership that reminds people of central visions and assists them in applying them to activities.

Also, Kantabutra and Saratun (2013) proposed six themes of sustainability leadership applicable to universities: a long-term perspective, staff development, strong organisational culture, innovation, social responsibility, and ethical behaviour. First, the long-term perspective is where leadership seeks to balance the demands of long- and short-term horizons and adopt a long-term focus to help keep sustainability ingrained in organisational culture. A long-term perspective helps to reduce disruption when top leaders leave and includes components such as developed shared strategic directions, development of talent pool for future succession planning, involvement and collaboration in decision making and having a standard set of core values developed and shared by management teams will keep sustainability engrained and reduce disruption (Kantabutra and Saratun 2013, p.365).

Secondly, staff development requires leadership to prioritise human capital development through financial investments in training and development for all employees. Activities such as orientation programs for inexperienced staff, academic development programs (e.g., IT skills development, courses, and workshops), and exit/retirement programs aid the immersion staff in university core values (Kantabutra and Saratun 2013). Misangyi (2016) found from a comparative case study of twenty-eight business facilities that the presence of training (e.g., awareness and job-specific training) is systematically connected to the recoupling of ES practices. Similar findings by James and Card (2012) and De Rijdt et al. (2016) support this finding.

Recruitment and retention of people who subscribe to strategy and stated values on ES and continuous reinforcement and reward on sustainability can help reinforce a sustainability culture (Galpin, Whittington, and Bell 2015). Employee separation, which refers to how an organisation

handles functional turnover (e.g., layoffs or underperformance), may demonstrate a firm's commitment to sustainability (Galpin, Whittington, and Bell 2015). Furthermore, building or enhancing accountability and confidence around practice (relational integration) can help foster collective action (May et al., 2009; McEvoy et al., 2014; Owens and Charles, 2016; Wood, 2017).

Bellantuono et al. (2016) found that a university can organise capabilities to drive forward green campus projects, such as organising actors' capability to provide high-level training to students on the way to address environmental problems, capability to conduct high-quality research, network capability; capability to develop research projects; capability to design academic courses; capability to take part to as well as organise international conferences and meetings; and capability to access research funds (Bellantuono et al., 2016, p.222).

Innovation such as incremental and radical innovation through investment in research and development (R&D) and consideration of stakeholders needs in innovation systems can contribute to building collective action required to tight-couple ES in culture (Kantabutra and Saratun 2013, Pedersen, Gwozdz, and Hvass 2018). Innovative practices can include research performance, professionalisation of management processes (e.g., use of performance agreement, improvement of administrative and support processes, etc.) and creative transformation of the daily work operations for non-academic jobs (Kantabutra and Saratun 2013).

Social responsibility, where leadership genuinely invests in environmental issues, can help garner collective action needed to tight-couple ES practices in organisations. According to Kantabutra and Saratun, leaders must stop "cheating" and cease making ES considerations an easy target for cost-cutting when under pressure. Finally, modelling ES behaviour involves leaders "doing the right thing" and acting responsibly. ES behaviours include ecological values,

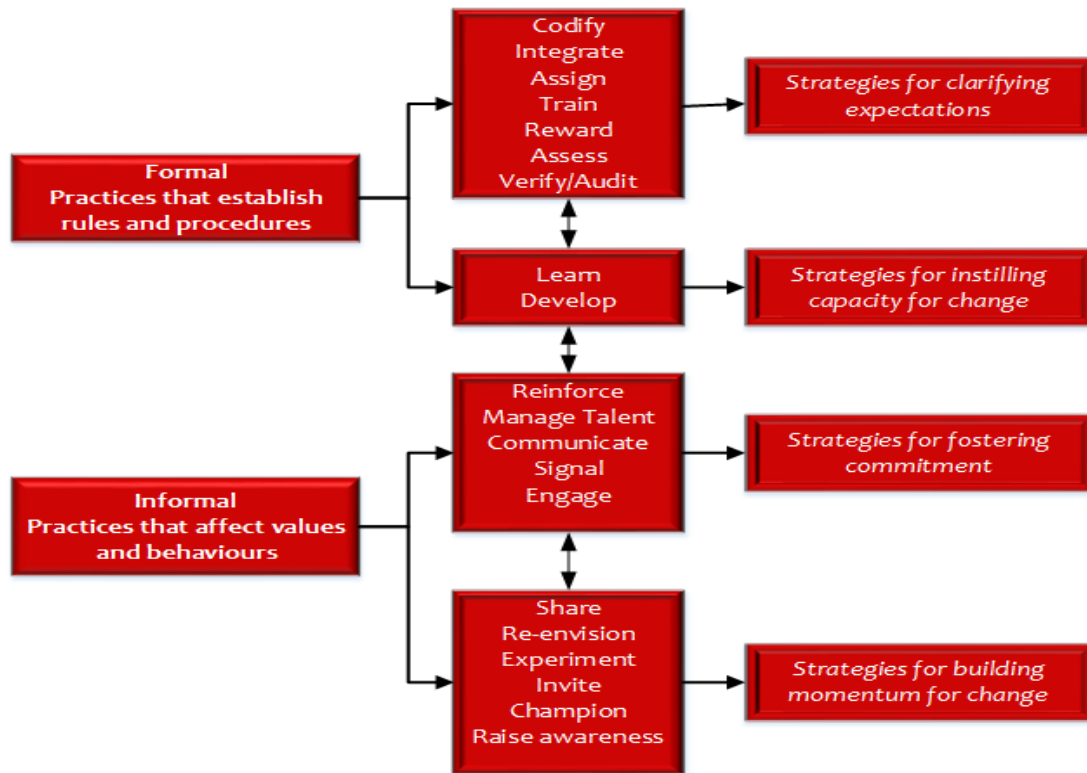
seeking to recruit and retain people with shared values and setting out consequences for breach (Kantabutra and Saratun 2013).

NPT theorises that the production and reproduction of practice require that actors collectively invest commitment in it (May et al., 2018). Thus, participants' involvement is necessary for commitment, as actors need to believe that their participation is worthwhile and to understand how they can make a positive contribution (May et al., 2009; Lozano, 2006; McEvoy et al., 2014; Owens and Charles, 2016, Wood 2017). Orton and Weick (1990) support the argument that focusing on system relations, including carefully selecting targets, controlling resources, and acting forcefully, could help compensate for loose coupling. Lozano (2006) shares a similar view with Orton and Weick as he believes that resolving discrepancies, co-opting, and using fear can address resistance to tight coupling.

In their study, Bertels, Papania and Papania (2010) proposed a model of cultural strategies to fulfil and meet organisational sustainability goals (Figure 9). Their model differentiates between fulfilment and innovation practices and formal and informal methods for establishing rules and behaviours. Fulfilment practices are for compliance or operational excellence, which seeks to clarify and refine what an organisation is already doing around sustainability.

Innovation practices define new ways of doing things, such as experimenting, learning, and trying new things (Bertels, Papania and Papania 2010). Innovation and fulfilment practices can be adopted formally and informally. Informal practices help establish rules and procedures, which entail strategies clarifying expectations and instilling capacity for change. Formal practices help guide behaviours through regulations, systems, and procedures, requiring strategies that foster commitment and momentum for change (Bertels, Papania and Papania 2010).

Figure 9: Bertels, Papania and Papania (2010) Model of Practices for Embedding Sustainability in Organisational Culture



Source: Bertels, Papania and Papania (2010)

Furthermore, Sharp (2009) argued that making a sizable staffing investment in the change-management functions is necessary to reduce the burden on a few staff who are left to achieve a broad-reaching institutional engagement and transformation without skills, structure, or staffing level. Sharp argued that it is not unheard of for a university to employ just one person, often with no change-management skills, giving them an overburdening responsibility of having to “coordinate, communicate, and project manage sustainability across the entire campus” (Sharp 2009 p. 4)

Material incentives, such as cash or gifts, have been shown to promote sustained ES behaviours (Levy and Marans 2012, p.369). Azar and Al Ansari (2017) and Misangyi (2016) have confirmed

that compliance can be enforced through material rewards and punishments. James and Card (2012) highlight the value of rewards in sustaining ES, but caution that they should be used carefully. They note that 'behaviour changes motivated by material rewards will last only as long as the reward is issued'. Instead, when paired with other strategies, modest, carefully targeted material incentives can encourage specific behaviours to jump-start in the short run (James and Card 2012, p.368).

Peers and friends can play a significant role in influencing and increasing collective action. As Lozano (2006) suggests, identifying, engaging, and empowering individuals who are already convinced about the idea and turning them into champions can help achieve a multiplier effect throughout the organization. This approach can greatly aid in tightening coupling efforts and inspire collective action.

4.5.1.4. Reflective Monitoring

Reflective monitoring, the final core construct of NPT, is crucial in appraising and judging the effectiveness of newly implemented practices (Owens & Charles, 2016). This construct underscores the importance of evaluation and feedback mechanisms in assessing the advantages and disadvantages of a practice's implementation (McEvoy et al., 2014). The ultimate goal is to foster a deeper understanding among users or participants regarding the impacts of their actions and the practice itself. Continuous reflective monitoring is essential for ensuring the ongoing effectiveness of sustainability practices.

In the context of ES initiatives within universities, monitoring and tracking progress are crucial for ensuring institutions stay on track and make necessary adjustments (Lozano, 2006; Posner & Stuart, 2013). NPT's perspective on reflective monitoring posits that organisations can refine and

solidify the everyday understanding of the practice through a combination of "communal and individual appraisal" (May et al., 2018).

Communal appraisal can be fostered through the sharing of experiences, both formally and informally. Winkler, Etter, and Wehmeier (2017) highlight the importance of increasing organisational transparency, which can cultivate deeper insights, a stronger sense of accountability, and more active participation. Sharing experiences through designated channels, alongside less formal discussions, allows for collective reflection and learning.

Individual work factors also play a crucial role in reflective monitoring. Through individual appraisal, staff members are empowered to assess and reflect on the impact of the newly adopted practice on their daily work (McEvoy et al., 2014). The combined insights gleaned from both personal and communal appraisals inform judgments about the success and value of the practice within the specific context. These insights can then identify areas for reconfiguration to ensure a better fit (Owens & Charles, 2016; Wood, 2017).

Posner and Stuart (2013) underscore the role of monitoring in fostering accountability. They argue that "individuals can be held accountable through effective monitoring, and it will become someone's job to help the institution behave sustainably" (p. 275). Ultimately, the aim is for sustainability to become "everyone's job," facilitating the successful embedding of ES practices throughout the university.

Evidence from broader sustainability change literature supports the value of specific monitoring practices. Townsend and Barrett (2015) highlight the potential of "sustainability reporting" and "carbon footprinting" as mechanisms for enhancing the monitoring of sustainability initiatives. Kang and Xu's (2018) study of thirteen universities confirms that annual sustainability reporting fosters greater transparency in sustainability practices. Similarly, Tan et al. (2014) found that

publicising data on campus energy use and environmental quality led to more energy- and resource-efficient campuses. Azar and Al Ansari's (2017) research with 227 campus residents in Abu Dhabi demonstrates that feedback mechanisms encourage energy conservation behaviours.

Implementing an environmental management system can be a powerful tool to support reflective monitoring of ES practices. An environmental management system is "the complete incorporation of environmental objectives and strategies into an organisation's broader goals and strategies" (Jabbour et al., 2013, p. 130). It represents a systematic approach to integrating environmentally conscious practices at all university levels. Alshuwaikhat and Abubakar (2008) elaborate on the components of an EMS, including organisational structure, planning activities, responsibilities, practices, processes, and resources dedicated to implementing, achieving, reviewing, and maintaining the university's goal of achieving a sustainable environment (p. 1781).

By fostering a culture of continuous evaluation and feedback through reflective monitoring, universities can ensure that their ES practices are effectively implemented and continuously refined and improved over time. This ongoing process is essential for achieving long-term success in integrating sustainability into the university's core fabric.

4.6. Barriers to Environmental Sustainability Tight Coupling into Institutional Culture

Universities can encounter barriers that adversely affect tight coupling efforts (Waas et al., 2012). Barriers can function as obstacles preventing cultural change efforts from lasting long. Research findings from Beynaghi et al. (2016), Cornuel and Hommel (2015), Rashe and Gilbert (2015) and Fukukawa et al. (2013) show that the practice of ES remains infant in some UK universities because these universities face various blockades when attempting to embed sustainability.

According to Sylvestre et al. (2013), universities have longstanding institutional and academic cultures of autonomy, freedom, and collegial governance, which are perceived as the way of life of a university. These cultures pose values-based challenges for university change agents seeking to realise transformational change for sustainability (Sylvestre et al., 2013). Thus, identifying barriers to ES tight coupling is essential for effective planning and strategising for culture change.

There are numerous publications available about barriers to ES focused on universities; however, many of these studies gave attention to obstacles to sustainability implementation (e.g. Thomas 2004; Moore 2005; Dyball, Wang and Wright 2015; Doherty, Meeham and Richards 2015; Blanco-Portela et al., 2017; Aleixo et al., 2018). Some studies looked at barriers in specific areas of ES activity, such as barriers to sustainability implementation in the curriculum, campus, research, etc. (e.g. Canning 2012; Cotgrave and Kokkarinen 2010; Raufflet 2013; Doh and Tashman 2014; Maiorano and Savan 2015 and Verhulst and Lambrechts 2015). Barriers are context-driven. Thus, as no two settings are the same, uncovering barriers prevalent in a previously overlooked context allows one to learn context-specific lessons and add original knowledge to existing literature.

Verhulst and Lambrechts's (2015) finding identified some barriers to sustainability culture in universities, including a) lack of policymaking, b) conservative disciplinary structure of higher education institutions, c) focus on short-term profit, d) lack of interdisciplinary research, e) high work pressure, f) lack of time, g) lack of consistent legislation, h) lack of performance indicators, i) technical problems, and j) lack of physical place. Hoover & Harder (2015) studied the hidden complexities of change for sustainability and found four main categories of challenges to culture change. These include 1) the organisation's culture(s) on change processes, 2) issues of

territories, conflict, and competition for sustainability, 3) power pointing, and 4) institutional structure.

Lozano (2006) also identified three barriers to sustainability embedding, and Esterhuysen (2003) highlights two levels of resistance to transformational change that an organisation may encounter. Ralph and Stubbs (2014) found four leading categories of barriers preventing the tight coupling of ES into operational areas of universities, including 1) lack of leadership and support, 2) resource constraints, 3) Academic silos and 4) lack of knowledge or understanding of ES.

Furthermore, Esterhuysen (2003) identified two levels of resistance to transformational change that an organisation may encounter: systemic level factors and individual/psychological level factors. Similarly, Sharp (2002) highlights four main barriers to ES transformation: 1) complexity, 2) mental models, 3) absurd consensus, and 4) system archetypes and myths of rationality. Ferrer-Balas et al. (2008) also identified issues including the freedom of individual faculty, incentive structure, lack of desire to change and societal pressure as barriers to sustainability transformation in universities. Table 12 presents a compilation of barriers identified from literature that can hinder ES's tight coupling into institutional culture.

Table 12: Summary of barriers to tight coupling of ES into institutional culture

S/N	Barriers	Authors	Category
1.	Lack of policymaking	Verhulst & Lambrechts (2015)	Systemic Barrier
2.	Conservative disciplinary structure/boundaries	Verhulst & Lambrechts (2015), Hoover & Harder (2015)	Territories, conflict, and competition for sustainability Barriers
3.	Focus on short-term gain/profit,	Verhulst & Lambrechts (2015), Esterhuyse (2003)	Profitization
4.	lack of interdisciplinary research	Verhulst & Lambrechts (2015)	Territories, conflict, and competition for sustainability Barriers
5.	high work pressure and stress	Verhulst & Lambrechts (2015), Lozano (2006)	Systemic Barrier
6.	lack of time	Verhulst & Lambrechts (2015), Hoover & Harder (2015), Ralph and Stubbs (2014), Sharp (2002)	Resource constraint
7.	lack of consistent legislation	Verhulst & Lambrechts (2015)	Systemic Barrier
8.	lack of performance indicators	Verhulst & Lambrechts (2015)	Systemic Barrier
9.	Technical problems	Verhulst & Lambrechts (2015)	Technical barriers
10.	Culture of criticism	Hoover & Harder (2015)	Organisation culture(s)
11.	Keep within the 'traditional way of doing things	Hoover & Harder (2015)	Organisation culture(s)
12.	Lack of resources (funding & people)	Hoover & Harder (2015), Ralph and Stubbs (2014)	Resource constraint
13.	Desire to keep within established structures	Hoover & Harder (2015)	Organisation culture(s)
14.	The culture of individual champions being over-burdened, which leads to burnout	Hoover & Harder (2015)	Organisation culture(s)
15.	Lack of leadership support (senior management, university & government)	Hoover & Harder (2015), Ralph and Stubbs (2014)	Managerial barriers
16.	Lack of coordination	Hoover & Harder (2015)	Systemic Barrier
17.	Campus politics (where sustainability becomes 'politically popular,' tensions can emerge as historic sustainability champions or early adopters may be squeezed out)	Hoover & Harder (2015)	Territories, conflict, and competition for sustainability Barriers
18.	New structures or initiatives overlap and become redundant, leading to territoriality as people become protective of their courses, departments, structures, or general way of doing things.	Hoover & Harder (2015)	Territories, conflict, and competition for sustainability Barriers

19.	Competition for who 'does sustainability best' weakens collaborative and participatory processes.	Hoover & Harder (2015)	Territories, conflict, and competition for sustainability Barriers
20.	Emphasis on individual as well as collaborative endeavours	Hoover & Harder (2015)	Organisation culture(s)
21.	Lack of collaboration	Hoover & Harder (2015)	Systemic Barrier
22.	Lack of shared vision or ownership	Hoover & Harder (2015)	Systemic Barrier
23.	People think of the 'other' as the barrier to change and tend not to reflect on their agency.	Hoover & Harder (2015)	Power pointing
24.	Threat to academic freedom	Ralph and Stubbs (2014)	Territories, conflict, and competition for sustainability Barriers
25.	Separation of academic & operational areas	Ralph and Stubbs (2014)	Structural Barriers
26.	Lack of knowledge or understanding of ES	Ralph and Stubbs (2014)	Informational barrier
27.	Start-off sustainability within existing structures insufficient to carry practical work for sustainability	Hoover & Harder (2015)	Structural Barriers
28.	Power structures located in multiple places within a university create issues of lack of clarity, which makes it challenging to identify who to address or where to go.	Hoover & Harder (2015)	Power pointing
29.	Lack of information	Lozano (2006)	Informational barrier
30.	Disagreement with the idea	Lozano (2006)	Individual/psychological barrier
31.	Lack of exposition	Lozano (2006)	Individual/psychological barrier
32.	Confusion	Lozano (2006)	Individual/psychological barrier
33.	Feelings of loss of control or power,	Lozano (2006)	Individual/psychological barrier
34.	Status loss	Lozano (2006)	Individual/psychological barrier
35.	Separation of the individual from the others	Lozano (2006)	Individual/psychological barrier
36.	Feelings of incompetence	Lozano (2006)	Individual/psychological barrier
37.	Feelings of being deserted	Lozano (2006)	Individual/psychological barrier
38.	The perception that change is too difficult	Lozano (2006)	Individual/psychological barrier
39.	Differences of sex, race, culture, or ethnic background	Lozano (2006)	Individual/psychological barrier
40.	Lack of trust	Lozano (2006)	Individual/psychological barrier
41.	Significant incongruity towards the values being encountered.	Lozano (2006)	Individual/psychological barrier
42.	Hierarchical organisational structures which obsess about maintaining existing relations of power and control	Esterhuysen (2003)	Organisation culture(s)

43.	Non-participative decision-making procedures (one-person rule),	Esterhuysen (2003)	Organisation culture(s)
44.	Task-oriented behaviour	Esterhuysen (2003)	Organisation culture(s)
45.	Perceived self-interest ²	Esterhuysen (2003)	Individual/psychological barrier
46.	Feelings of fear and uncertainty	Esterhuysen (2003)	Individual/psychological barrier
47.	Conservatism ³	Esterhuysen (2003)	Individual/psychological barrier
48.	Lack of a single observation/control centre from which university-wide changes can be programmed	Sharp (2002)	Structural Barrier
49.	Numerous subcultures of decision-making styles	Sharp (2002)	Organisation culture(s)
50.	Varying degrees of differentiation between schools & students, administration, and faculty.	Sharp (2002)	Territories, conflict, and competition for sustainability Barriers
51.	Goal ambiguity & conflict	Sharp (2002)	Systemic Barrier
52.	University engagement in extensive growth	Sharp (2002)	Profitization
53.	Proliferation of computers & associated technologies	Sharp (2002)	Technical barriers
54.	ES is seen as a late-arriving competing priority that must wait its turn to be addressed.	Sharp (2002)	Systemic Barrier
55.	Mental models	Sharp (2002)	Individual/psychological barrier
56.	People's Susceptibility to conformity	Sharp (2002)	Individual/psychological barrier
57.	System archetype myth of rationality	Sharp (2002)	Organisation culture(s)
58.	Freedom of individual faculty members	Ferrer-Balas, et. al (2008)	Territories, conflict, and competition for sustainability Barriers
59.	The incentive structure (salaries, promotions, & granting of Tenure) does not recognise faculty contributions to SD.	Ferrer-Balas, et. al (2008)	Systemic Barrier
60.	Lack of desire to change	Ferrer-Balas, et. al (2008)	Organisation culture(s)
61.	Lack of pressure from society	Ferrer-Balas, et. al (2008)	External/societal related barrier

Source: Compiled by the Researcher

² Perceived Self-Interest refers to a conflict of interest between an institution's need to transform itself and the individual's perception of her/his vested interest. Resistance arises when there is a conviction that vested interests are threatened by the transformation.

³ Conservatism-Transformation is viewed as a threat to acquired skills and knowledge. Hence the tendency to protect and justify the status quo (Esterhuysen 2003, p.5)

Sixty-one barriers were identified that could negatively impact institutional tight coupling efforts. These barriers fall broadly into eleven categories (Figure 10).

- 1) Organisation culture(s) barriers relate to the focus of institutional values and beliefs.
- 2) Systemic barriers are challenges relating to administration and bureaucracies.
- 3) Territories, conflict, and competition for sustainability barriers block academic boundaries.
- 4) Resource constraint barriers are related to time, staffing, financing, and funding issues.
- 5) Technical barriers are limitations associated with technology.
- 6) Powerpointing relates to the perception that sustainability is someone else's responsibility.
- 7) Individual/psychological barriers are related to human or employee limitations, drives, motivation, and emotional and opportunity issues.
- 8) Structural Barriers are issues related to formal systems of control, task and reporting relationships that control and coordinate ES in a university.
- 9) Informational barriers relate to information, communications, and understanding.
- 10) Managerial barriers are issues of institutional leadership and decision-making.
- 11) Profitization refers to economic gains priorities that bring short-term gains to the university.

Figure 10: Summary of the main barriers to ES tight coupling into a culture



Source: Author created based on Literature Review Findings

4.7. Summary of Literature Gaps

The current literature has given much attention to ES implementation in universities, whereas lessons are still to be learnt about ES tight coupling in institutional culture (Sipra, Tappeser and Meyer 2013; Hoque, Clarke, and Sultana 2017; Rasche and Gilbert 2015; Hladchenko and Westerheijden 2018; Adams, Martin and Boom 2018). The culture change literature, which sets the foundation for this research, focused on how embedding manifests. Including how and why sustainability practices may or may not become tight-coupled in organisations (Faghihi, Hessami, and Ford, 2015; Too and Bajracharya, 2015; Dagiliūtė, and Liobikienė, 2015; Oludeyi, Momoh, and Akinsanya, 2018). Also identified are aspects of embedding (Tilbury, 2013; Galpin, Whittington, and Bell, 2015; Fiselier, Longhurst, and Gough, 2018) and strategies for realising embeddedness (Orton and Weick, 1990, Levy and Marans 2012, Kantabutra and Saratun 2013, Ribeiro, et al. 2016, Ansari, 2017, Pedersen, Gwozdz, and Hvass, 2018).

Nonetheless, gaps still exist. Firstly, existing publications studying ES tight coupling have so far been context-specific, either focused on corporate organisations (Adams, Martin and Boom 2018; Hladchenko and Westerheijden 2018; Stål and Corvellec 2018; Ramísio et al. 2019; Niedlich et al. 2019, Jang, Zheng and Bosselman 2017, Galpin, Whittington and Bell 2015, Bertels, Papania and Papania 2010), which has rendered transferability to other contexts problematic (James and Card, 2012; Levy and Marans, 2012; Berchin et al., 2017).

Furthermore, some writers have argued that many publications on sustainability embedding lacked theoretical and methodological rigour (Rasche and Gilbert 2015; Adams, Martin, and Boom 2018). According to Barth and Rieckmann (2016), scholarly studies focused on ES in universities have been descriptive and only partially meet the standards of high-quality research. This suggests an opportunity to learn more about ES tight coupling by adopting rigorous methodological frames.

Additionally, research studies that gave attention to ES in higher education institutions focused their analysis on practice implementation in varying contexts (Lozano, 2006; Ribeiro et al., 2016; Filho et al., 2018; Sharp, 2009; Bellantuono et al., 2016; Kantabutra and Saratun 2013; Misangyi 2016; Tan et al., 2014; Kang and Xu 2018; Azar and Al Ansari 2017). For example, Rasche and Gilbert (2015) and Snelson-Powell, Grosvold and Millington (2020) researched ES implementation in English business schools.

Minimal research exists which looks specifically at ES tight coupling activities in NESU. Yet, tight coupling is imperative to integrate ES principles into university members' day-to-day routines and activities (Redman and Maguire, 2012; Grecu and Ipina, 2014; Opatha and Arulrajah, 2014; Lozano et al., 2015). This research, therefore, seeks to fill the current gap in the literature by expanding geographical reach and investigating ES tight coupling activities in NESU. This is important to ensure that ES becomes sustained and with continuous investment from relevant actors (May et al., 2009). It will also help establish ways for NESU to maintain the culture of ES.

Existing findings suggest that some universities may abide superficially by institutional pressures calling for them to adopt environmentally sustainable business behaviours without changing their culture to enable ES to become an enduring part of daily activities (decoupling) (Elmaghrabi 2014). This is problematic because to realise a culture that genuinely respects and addresses the causes of environmental crises requires identifying and resolving systemic disconnects or gaps between implemented practices and cultural norms, values, and behaviours.

Thus, if decoupling is unresolved, it can create problems for tight coupling ES into everyday routine and work of organisational members (Faghihi, Hessami, and Ford, 2015; Dagiliūtė, and Liobikienė, 2015; Oludeyi, Momoh and Akinsanya, 2018, Rasche and Gilbert 2015, Hladchenko and Westerheijden 2018). Decoupling occurrences are not easily decipherable (Elmaghrabi

2014). Extant literature has not given in-depth attention to fully understanding institutionally embedded conditions or influences which further the occurrence of policy-practice and means-ends decoupling of ES in universities (Sammalisto, Sundström and Holm, 2015; Elken and Vukasovic, 2019). Also, existing research studies are limited which address decoupling and tight coupling simultaneously, such as how decoupling can be reversed from loose to tight (Hallett, 2011; Elken and Vukasovic 2019; Snelson-Powell, Grosvold and Millington, 2020).

Thus, this research responds to the call for a better understanding of organisational dynamics, influences and micro-level processes related to sustainability embedding in higher education institutions by exploring factors that drive the occurrence of ES decoupling in the context of NESU (Cai and Mehari, 2015; Ugbaja, and Bakoglu 2017; Snelson-Powell, Grosvold and Millington 2020). This research fills the current literature gap by exposing factors that promote the occurrence of policy-practice and means-ends decoupling of ES in NESU. This adds knowledge to literature and practice as policymakers and sustainability practitioners can learn how and why organisational factors, activities, and arrangements can cause or lead to a systemic and behavioural disconnect in ES. This way, they can strategise effectively to ensure the realisation of a genuinely alternative culture that strives to address environmental crises.

A university can encounter barriers impacting its ability to realise effective cultural transformation for ES. Barriers pose obstacles that can prevent or hinder cultural change efforts. There is a vast amount of literature on barriers to sustainability in universities; however, many of these publications have given attention to ES implementation, not tight coupling. Also, some of these studies researched implementation barriers in specific areas of activity, such as barriers to sustainability in the university curriculum, campus, research, etc. (e.g., Canning 2012, Cotgrave and Kokkarinen 2010, Raufflet 2013 and Doh and Tashman 2014, Maiorano, and Savan 2015, Verhulst and Lambrechts 2015).

Some studies explored specific contexts, making their findings only relevant to their original setting (Gomez et al., 2015; Hover and Harder, 2015; Beynaghi et al., 2016; Alghamdi, Heijer and Jonge, 2017). Other publications have not been empirically tested (e.g., Blanco-Portela et al., 2017). Little is known about the barriers to ES tight coupling at the location of this research. Thus, the focus of this research, uncovering the obstacles to ES tight coupling into the culture of NESU, provides an opportunity to add knowledge to literature that will help to inform policymakers of the challenges they will encounter as they become ready to embed ES into their culture.

Finally, a methodological gap exists in the current tight coupling and decoupling literature. Criticisms exist that the quality of scholarly work published so far in this field of research lacks theoretical and methodological rigour (Rasche and Gilbert 2015; Adams, Martin, and Boom 2018). To resolve this empirical issue, the researcher adopts robust theoretical frameworks, including institutional theory and NPT combined, to study tight coupling complexities. Haack and Schoeneborn (2015) noted that research studies adopting institutional theory are often grounded in the positivist quantitative paradigm.

Thus, this seeks to fill this methodological gap by adopting the comparative GT approach to offer a data-rich insight into the study phenomenon. The identified gaps in the literature informed the development of the following research questions:

1. What factors contribute to the policy-practice decoupling of ES in NESU?
2. What factors contribute to the means-ends decoupling of ES in NESU?
3. How can NESU, by leveraging the perspectives of university employees, reverse its current decoupling practices and enable the tight coupling of ES into daily routines and culture?
4. What barriers might hinder NESU's efforts to tighten the coupling of ES into its culture?

CHAPTER FIVE

RESEARCH METHODOLOGY

5.0. Introduction

A study is incomplete unless researchers can systematically explain how they gathered and interpreted knowledge and the sequencing process, approaches, and strategies adopted to obtain their data. Thus, this chapter presents the philosophical and methodological approaches adopted for this research. The chapter discusses and justifies the methods employed for this study, including the research design, Research strategy, sampling, data collection and data analysis process. This chapter concludes with a discussion of the limitations of methodology.

5.1. The Philosophical Framework of The Research

Research philosophy is “*a system of beliefs and assumptions about knowledge development*” (Raham 2018). There are no right or wrong philosophical stances (Bryman 2016; Saunders, Lewis, and Thornhill 2016). Instead, a researcher adopts a philosophy because it is most appropriate for realising the research goal (Wahyuni 2012). Interpretivism is selected as the underpinning philosophy of this research. Interpretivism is the “study of how things appear to people and how they experience their world” (Gill and Johnson, 2010, p.241). Interpretivism research aims to understand and explain problems in specific contextual settings, such as what people individually and collectively think or feel about a phenomenon (Holden and Lynch 2004, Bryman 2016). Interpretivism philosophy was deemed suitable for this research because:

- It enables the generation of rich data (Holden and Lynch 2004).
- It permits flexibility and supports the adoption of qualitative methodologies that aid a researcher in deciphering meanings in human behaviour, gaining a broader scope and adjusting to emerging issues and ideas necessary for contributing to theory development

(Bryman and Bell 2011; Easterby-Smith et al. 2012; Bryman 2016; Saunders, Lewis, and Thornhill 2016).

- It supports adopting flexible data collection approaches (e.g., interviews) that comprehensively capture experiences, opinions, and views. In the case of this research, the goal was to capture staff members' experiences, opinions, and views about ES tight coupling in their social setting (Bryman and Bell 2011).
- It recognises that context and social situations continually change; consequently, contexts or participants can hold different meanings to a problem (Rahman 2018). This aligns with the researcher's worldview as she believes that ES decoupling and tight coupling factors are unique to individual contexts, and this study seeks to investigate the decoupling and tight coupling factors within NESU.
- It offers an opportunity to fill the gap left in the existing literature. Previous studies that adopted institutional theory as a theoretical framework employed the positivism (quantitative) research paradigm in studying practice decoupling in their respective contexts (Haack and Schoeneborn 2015). Thus, Haack and Schoeneborn suggested that emerging research studies adopting institutional theory should apply social-constructionist perspectives when investigating practice decoupling. This research adheres to this suggestion, adopting an interpretive philosophy.

Limitations associated with interpretivism philosophy include relativism and incommensurability (Holden and Lynch 2004). Holden and Lynch believe that the interpretivism view of unequal versions of reality has severe implications for scientific knowledge, given that one theory cannot be more valid than another. According to Easterby-Smith et al. (2008), interpretivism lacks effectiveness due to the time it takes to gather data and the difficulty of analysing and interpreting data. However, this philosophy, associated with qualitative

methodology, allows for addressing in-depth questions of why and how human behaviours, opinions, and experiences (Matthews and Ross 2010; Saunders, Lewis, and Thornhill 2016).

Positivism and pragmatism are the other main philosophies in research methods. Positivists argue that knowledge exists which is visible and describable (Patton 2002). Research based on this school of thought seeks to explain regularities in human social behaviour. Like natural sciences, a structured approach is adopted (Easterby-Smith et al. 1991). According to Holden and Lynch (2004), positivists adopt the 'hypothetico-deductive' process, which involves formulating hypotheses and research questions based on the researcher's conceptualisation of the phenomenon. Through controlled observations and measurements, the researcher verifies or refutes their hypothesis based on observed facts (Holden and Lynch 2004).

This research determined that positivism is not the best fit for it. The goal of this research is not to test or confirm a hypothesis; the phenomenon studied in this research is still an emerging knowledge in the literature. The research goal is to generate theory by exploring the opinions and experiences of participants.

Furthermore, researchers may find themselves placed between positivism and interpretivism and would choose to combine both approaches, which is known as pragmatism (Holden and Lynch 2004, Bryman 2016). Pragmatism emerged because of the heated debate between supporters of positivism and interpretivism (Saunders, Lewis and Thornhill 2012; Thorpe and Holt 2008 and Easterby-Smith et al. 2008). According to Doyle et al. (2009), pragmatism is the third methodological philosophy that combines positivism and interpretivism in a single study.

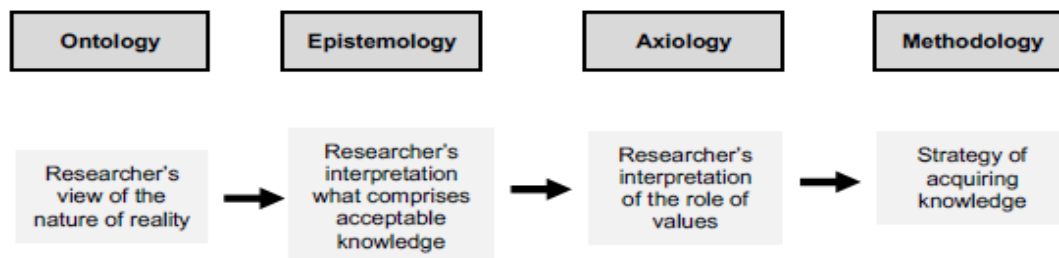
The central assertion of pragmatism is that no pre-determined theories or frameworks shape knowledge and understanding of the social world. Thus, pragmatist researchers adopt mixed methodologies when investigating research phenomena. According to Creswell (2010),

pragmatists do not commit to one system of philosophy; instead, they apply and combine methods best suited for addressing the research problem. The methodology is adopted to fit a research problem rather than an ontology or epistemological position (Holden and Lynch 2004). This philosophy was not followed since the studied research phenomenon is still emerging knowledge, and the researcher sought a philosophy that fits to address the goal of this research, which is to capture participants' experiences, opinions, and views.

5.2. Research Paradigm

Paradigms guide the concept of philosophy in research. Research paradigms are the basic belief systems based on ontological, epistemological, and methodological assumptions (Saunders, Lewis, and Thornhill 2016). Four interrelated paradigms guide every research process: ontology, epistemology, axiology, and methodology (Figure 11) (Saunders, Lewis, and Thornhill 2016).

Figure 11: Relationship between research paradigms Ontology, Epistemology, Axiology and Methodology



Source: Raham (2018, p.111).

5.2.1. Research Ontology

Ontology is concerned with the nature of reality. A researcher's view of reality involves a choice of two beliefs: whether there is a definite reality or if reality exists as the product of one's mind (Wand and Weber 1990). There are two ontological orientations: objectivism and constructionism (Bryman 2016). Objectivists believe that meanings or reality confront a researcher as external facts independent of values and influences. Within this view, a researcher

seeks to study a phenomenon's tangible or objective aspects, such as the standardised way things get done, rules and regulations, etc., external to actors who inhabit it (Bryman 2016).

On the other hand, Constructionism argues that reality is produced through social interactions. These realities are shaped by constant revisions from social actors and even the researcher's accounts. At every point, a researcher presents a version of social reality rather than a definitive reality (Bryman 2016).

This research ontological position is constructionism. The researcher believes that reality is subjective, and people construct meanings differently based on their beliefs and value systems (Creswell 2013). In this research, ES is seen as a social construction contingent on a series of experiences and influenced by individuals who work individually and collectively to enact actions required to carry it forward in space and time.

As social reality is constantly constructed and reconstructed by actors or participants, constructionism demands that researchers employ social products, techniques, or interactions to understand reality fully (Bryman 2016). This research used semi-structured interviews, open questions, an inductive approach, a multi-case study, and GT. It enables the complete capture of social interactions and details surrounding a studied phenomenon and elicits participants' accounts of their social reality.

In conclusion, the constructionism position adopted in this research is because it allows subjective interpretation of reality and for meaning, experiences and theory building to be attended through induction of data, which is consistent with the aims set out to be accomplished in this research (Bryman and Bell 2011; Easterby-Smith et al. 2012; Saunders, Lewis, and Thornhill, 2012).

5.2.2. *Research Epistemology*

Epistemology studies how knowledge is obtained (Matthews and Ross, 2010). It involves interpretations of what a researcher perceives as acceptable and how people know what they know (Guba and Lincoln, 1994; Saunders, Lewis, and Thornhill, 2012). According to Bryman (2016), there are broadly two epistemological positions: positivism and interpretivism. Positivism argues that knowledge or knowing is arrived at through applying methods that allow gathering value-free facts. This position argues that knowledge should be tested to determine a definite law.

On the other hand, interpretivism argues that knowledge is discoverable by adopting research procedures that reflect humans' distinctiveness (Bryman 2016). Further, interpretivists view knowledge as actively and mutually constructed by the researcher and participants rather than as depictions of facts (Silverman 2014). Bryman argues that an interpretive stance enables a researcher to

- Generate surprising findings.
- Reveal how members of a social group or context interpret the world around them, i.e., their interpretation of others' interpretations.
- Place interpretations into a social scientific frame, e.g. concepts, theories, and literature of a discipline (Bryman 2016, p.28)

This research aligns with the interpretivism position that knowledge is subjective and socially constructed through interactions between the researcher and participants (Bleiker et al. 2019). This epistemological position is consistent with the researcher's values and views of the world and reality. She believes interpretivism provides the best chance of generating surprising findings/knowledge because it permits methods of inquiry (such as GT) that fully capture details surrounding a studied phenomenon.

Furthermore, the goal of this research informed the epistemological position adopted. Knowledge is learning how best to promote change in ES's culture, values, norms, and practice in NESU from the members' perspective in this context. Furthermore, Bryman (2016) noted that interpretivism enables a researcher to place interpretations in a social scientific frame. This aligns well with the overarching goal of this research because knowledge generated through this study is to contribute ideas and perspectives to literature by developing a conceptual model for identifying decouplings and fostering tight coupling of ES into the culture of NESU.

5.2.3. *Research Axiology*

Axiology concerns the role of values in research or a “researcher’s view of the role of values in their research” (Saunders et al. 2012). Typically, a researcher must establish their role values, personal beliefs, or feelings (Saunders, Lewis, and Thornhill, 2012). The researcher adopts the view that a researcher is a part of what is researched and is value-bound. Section 5.12 provides details of the pre-conceived values held by the researcher and the insider and outsider roles held during the research.

5.2.4. *Research Methodology*

Methodology refers to a researcher's techniques to discover and investigate reality (Saunders, Lewis and Thornhill 2016, Bryman 2012). According to Crotty (1998, p.3), a methodology is “The strategy, plan of action, process or design behind the choice and use of particular methods to attain the desired outcomes”.

A qualitative methodology was adopted for this research. The qualitative method is a naturalistic/humanistic approach which aims to understand the meaning people construct about their world (Merriam and Grenier 2019). It can be viewed as a research approach that adopts methods such as case study, GT, or participant observation to provide descriptive or narrative accounts of a setting, practice, or the experiences of participants (Driscoll and Parkinson 2011).

According to Denzin and Lincoln (2011), qualitative methods make the world visible by turning it into a series of presentations, including field notes, interviews, conversations, photographs, recordings and memos. In short, “qualitative research involves any research that uses data that do not indicate ordinal values” (Nkwi, Nyamongo and Ryan 2001 p.1).

Qualitative methods fit well with the constructionism ontological orientation adopted in this research. It is suitable for this research because this study aims to understand participants' views regarding their social settings (Myers 2019). As Saunders, Lewis, and Thornhill (2012) noted, the qualitative approach consents to in-depth knowledge creation by analysing the subjects' opinions under study. Thus, adopting qualitative methodology positioned the researcher as a unique research instrument for this study, one who tells the stories of others by considering their experiences, behaviours, and attitudes during data collection (Dawson 2002).

Furthermore, the qualitative approach is most suitable for this research because it is ideal when a) a concept is immature, b) in cases where a researcher has little or no knowledge of the research subject due to a lack of theory and previous research; and c) where there is a need to explore a phenomenon and develop a theory (Saunders, Lewis and Thornhill, 2012 and Morse, 1991). The qualitative methods of this research allow the researcher to generate knowledge and to propose a theory on policy-practice decoupling, means-ends decoupling, tight coupling ES in institutional culture and barriers to ES tight coupling in NESU, all areas with limited previous research.

An alternative methodology to the qualitative method is quantitative methodology. According to Ghauri and Gronhaugh (2002, p.86), the findings of quantitative methods are arrived at by statistical methods or other quantification methods. It involves collecting numerical data, counting and measuring events, and analysing data using statistical and mathematical methods. Research studies grounded in positivism philosophy adopt quantitative methodologies.

Researchers adopt quantitative methods when a theory is already developed. The goal is to confirm the theory (Denzin and Lincoln 2011). Research findings from this paradigm are often replicable and generalisable due to the ample sample size involved in the investigation process (Saunders, Lewis and Thornhill 2016).

There are limitations to quantitative methods, which include them being inflexible, artificial, and ineffective in generating an understanding of processes or actions (Easterby-Smith et al., 2008). Positivists focus on concrete reality, which may lead to the exclusion of tangible subjective reasons for actions valuable to knowledge (Saunders, Lewis and Thornhill 2016). Holden and Lynch (2004) argue that quantitative methods are inappropriate for studying social science phenomena due to the complex nature of human beings. These limitations, in addition to the objectives of this research, are the reasons for not adopting the positivist research philosophy.

A third research methodology is mixed methods. Writers who support pragmatism argue that pluralist, multimethod approaches will help better understand a research problem (Thorpe and Holt 2008). According to Creswell (2010), pragmatists try to balance objectivity and subjectivity, so they choose the most appropriate methods for uncovering the research's 'What' and 'How'.

Thus, it is typical for pragmatists to integrate quantitative and qualitative methods in a single study because they believe this combination will help provide a better understanding of the research problem than either approach alone" (Creswell and Clark 2007 P.5). This methodology is not adopted for this research because the mixture of qualitative and quantitative methods is a time-consuming process that will delay the attainment of this research within the set-out timeframe. Also, the researcher's lack of sufficient quantitative skills to manage the quantitative aspect of this methodology is another reason for not adopting this approach.

5.3. The Exploratory Design of the Research

In qualitative research, the selected design sets out the criteria and questions to be studied (Creswell et al., 2007). This research adopts an exploratory design following a suitability analysis based on the following established criteria: 1) The nature of the research question being posed, 2) The researchers' training and experiences with different forms of qualitative designs, 3) the final written "product" that the design type produces (Creswell et al. 2007) and 4) available resources.

1. Nature of research question posed: In qualitative research, a study can be designed to fulfil an exploratory, descriptive, explanatory, or evaluative purpose (Sanders, Lewis, and Thornhill 2016). Table 13 summarises the different research questions posed by the various research designs. This research is exploratory as it poses questions that begin with 'what' and 'how' and aims to deeply understand ES decoupling and tight coupling in NESU. Exploratory studies are flexible and adaptable, thus making them well-suited to case studies and GT designs. Furthermore, the exploratory design adopted for this research is because the goal was not to establish a causal relationship between variables consistent with explanatory research but to understand the issues and problems within the studied context (Saunders, Lewis, and Thornhill 2016). Finally, this research process involved searching existing literature and conducting semi-structured interviews with experts, consistent with the exploratory strategy.

Table 13: Summary of the nature of questions posed in qualitative research studies

Exploratory studies	Descriptive Research	Explanatory studies	Evaluative studies
<p>*Ask open questions to discover or gain insights into what is happening in a topic area.</p> <p>*Exploratory questions begin with ‘what’ or ‘how.’</p> <p>*Best used for clarifying or understanding issues, problems, or phenomena when unsure of their precise nature</p> <p>*Exploratory studies can be conducted by searching the literature, interviewing experts, conducting in-depth individual interviews or focusing on a group.</p> <p>* Due to the exploratory nature of the research, interviews are unstructured</p> <p>*Exploratory studies are flexible and adaptable</p>	<p>* Aim to gain an accurate profile of events, persons, or situations.</p> <p>*Seeks to address the questions of ‘who,’ ‘what,’ ‘when,’ and ‘how.’</p> <p>*May be used to extend exploratory research.</p> <p>*Requires the researcher to understand a phenomenon clearly before data collection.</p> <p>*A danger of the research becoming too descriptive</p>	<p>*Tries to establish a causal relationship between variables.</p> <p>*Addresses the questions of ‘why’ or ‘how.’</p> <p>*Emphasis is on studying the problem to explain the relationship between variables</p>	<p>*Tries evaluating to uncover how well something works.</p> <p>*Seeks to evaluate answers beginning with ‘how’ and ‘what.’</p> <p>*Comparison may be made between events, situations, groups, etc.</p> <p>*Contribution is obtained when there is a comparison between how and why and comparing findings to existing theory.</p>

Source: Compiled by the Researcher from Matthews and Ross (2010) and Saunders, Lewis, and Thornhill (2016)

2. **The researchers’ training and experiences:** The researcher undertook formal training organised by Robert Gordon University and Bournemouth University on the case study and GT research designs and thus felt comfortable adopting this design. Also, the researcher has prior experience adopting the case-study research design during her master’s research project.
3. **The final “product” that the design type produces:** The final output intended from this research is to provide insight into the issue of policy-practice and means-ends decoupling of ES in a university setting and to generate an explanation of a process (theory) shaped by participants' views of how tight coupling ES as the culture of their university can be attained. The case study and GT designs are well-suited to address these issues.
4. **Available Resources:** Another criterion factored in when deciding the research design was the availability of resources (time and finance) at the researcher's disposal to complete the study. Bournemouth University's time imposed for a PhD to be completed (4 years) and the

limited funding led the researcher to narrow the options to a manageable design within the stipulated time limit.

5.4. The Inductive approach of the research

Three recognised research approaches are deductive, inductive, and abductive. This research follows a systematic inductive approach. In inductive research, theory follows or emerges from data (Saunders, Lewis and Thornhill 2016). The aim is to develop a theory from data (Bryman 2016) by revealing themes and patterns within data and using these to propose hypotheses, frameworks, or models (Blackmon and Maylor 2005; Rahman 2018). In other words, the goal is to generate theory, not to test a hypothesis, as in the deductive approach (Bryman 2016).

The deductive approach entails generating hypotheses from existing research and designing a strategy to evaluate this hypothesis or theory, also known as theory testing (Sanders et al., 2012). In deductive research, the researcher first deduces theory and hypothesis from what is already known and then subjects the deduced hypothesis to empirical scrutiny (Bryman 2016). This testing leads the researcher to deny or confirm the hypotheses.

A researcher, rather than moving from theory to data (deduction) or from data to theory (induction), could decide to adopt an ‘abductive approach’ which involves moving back and forth and, in effect, combining deduction and induction, called ‘iterative’ (Bryman 2016). The abductive process involves discovering or observing a phenomenon before working out plausible theories on how this could have occurred (Saunders, Lewis and Thornhill 2016). It requires a researcher first to collect data and, based on the data collected, re-direct the research by collecting other data or using a different method(s) to collect data (Easterby-Smith et al., 2008). The abductive approach includes a procedure for theory development where inductive inferences are developed, and deductive ones are tested iteratively throughout the research (Saunders, Lewis and Thornhill 2016).

The inductive approach followed in this research helped shape the conceptualisation of the research. For example, as mentioned in the intro of this thesis (section 1.1), the experiences of the researcher observing organisational members (i.e., staff and students) behaving nonchalantly towards environmental matters and making little or no effort to engage with any of the initiatives and schemes provided by the university, informed what trajectory to focus the investigation.

Furthermore, the inductive approach helps explore issues requiring descriptions from participants who experience them (Cooney, 2010). Thus, it was considered an adequate strategy to adopt since the goal of this research was to obtain the views of participants with the most insights to provide information about the issues of this research. For instance, before commencing with the idea of this research, the researcher consulted with her academic mentors and subject experts to understand the contemporary state of ES research in higher education.

The outcome from these conversations revealed that the issues observed by the researcher were not operationalisation or implementation issues but about how ES can become normalised in the everyday work, behaviours, and decisions of institutional members. It enabled the researcher to study decoupling, tight coupling, and barriers to sustained ES tight coupling even before reviewing academic literature. Finally, adopting an inductive approach for this research fits well with the GT and case study strategy employed in this research because it offers flexibility, allowing the researcher to go between data and literature, which guides the evaluation of the research objectives, findings and themes to emerge from raw data (Raffe and Loughland, 2021).

5.5. Research Strategy

There are eight recognised types of research strategies (Saunders, Lewis, and Thornhill 2012). These include 1) experimental, 2) Survey, 3) Archival research, 4) Ethnography, 5) Action research, 6) GT, 7) case study, and 8) Narrative Inquiry (Bryman 2016, Mathews and Ross 2010 and Saunders, Lewis, and Thornhill 2016). This research combined and adopted two strategies: Case study and GT.

5.5.1. Case Study

Case study research offers a valuable strategy for understanding complex phenomena within specific real-life contexts (Saunders, Lewis, and Thornhill 2016). By delving deeply into a single case or a select few cases (Bryman 2016), researchers can illuminate the "why," "what," and "how" of a particular issue (Voss et al. 2002). This in-depth exploration yields rich insights and detailed descriptions and even contributes to theory development (Gibbert, Ruigrok and Wicki 2008; Saunders, Lewis, and Thornhill 2016). The case study approach proves versatile, encompassing individuals, organisations, events, groups, or even entire communities (Stake 2006; Matthew and Ross 2010; Saunders, Lewis, and Thornhill 2016).

The case study methodology offers numerous advantages for researchers. It is particularly well-suited for addressing questions that delve into the "why" and "how" of a phenomenon (Voss et al. 2002). By immersing themselves in the intricacies of a case, researchers can develop a deeper understanding of the situation, enabling them to make more informed judgments (Simons 1996). Additionally, case studies allow for exploration within unique contexts, revealing previously unseen aspects of the phenomenon under investigation (Saunders, Lewis, and Thornhill 2016). This approach is particularly valuable when the phenomenon is not fully understood (Bryman 2016). Moreover, case study findings can help identify solutions for specific problems (Bryman 2016).

The potential impact of case study research can be significant, as highlighted by Voss et al. (2002). In light of these advantages, particularly its suitability for exploratory and theory-building research, the case study design was deemed the most appropriate for this current investigation. Despite its benefits, the case study approach is not without its limitations. Critics point to the time-intensive nature of in-depth research (Voss et al. 2002) and the potential for case study data to be complex and not easily generalised to broader contexts (Simons 1996). Negligent researchers can compromise the rigour of case studies, and focusing on success stories can limit the overall picture (Yin 2014, Lozano 2009).

Additionally, concerns exist regarding the generalisability of findings due to the inherent focus on a limited number of cases (Yin 2014). While acknowledging the limitations of generalisability beyond the specific case studies, this research maintains that the findings will still be valuable for other universities. The developed conceptual model can be utilised as a framework for identifying and categorising factors related to ES decoupling and tight coupling within universities.

Case study research can be categorised into two primary dimensions: single-case and multiple-case studies (Stake 2006). As the name implies, a single-case study focuses on a single case in detail (Stake 2006). In contrast, multiple-case studies examine two or more cases (Stake 2006). Within these two dimensions exist various designs recognised by prominent case study researchers. According to Yin (2018), a case study design is the logical plan guiding researchers from the research questions to meaningful conclusions. As shown in Table 14, Yin and Stake identify four main types of case study designs.

Table 14: Types of case study designs

Yin (2018)	Stake (2006)
<ul style="list-style-type: none"> • Single holistic design- involves one or a single unit of analysis. • Single embedded design involves embedded units of analysis at multiple levels. Within a particular case, attention is given to subunits. • Multiple holistic designs involve studying a single unit across various cases. • Multiple embedded design- involves the study of various units across numerous cases. 	<ul style="list-style-type: none"> • Descriptive case studies seek to describe current practice. • Illustrative case studies illustrate new and innovative best practices organisations adopt. • Experimental case studies aim to uncover the difficulties of implementing new procedures and techniques in organisations and evaluate their benefits. • Exploratory case studies use or apply existing theory to understand and explain social events.

Source: Compiled by the Researcher from Yin (2018) and Stake (2006)

While compelling and robust (Yin 2018), multiple case studies require careful consideration. The resource and time demands are substantial (Yin 2018), potentially leading to a trade-off between in-depth analysis and breadth (Creswell 2013). Selecting cases is crucial; they should either allow for "literal replication" (predicting similar results) or "theoretical replication" (predicting contrasting results for anticipated reasons) (Yin 2018; Johnson and Christensen 2004). Multiple case studies offer a powerful tool for doctoral research, particularly those focused on theory building (Perry 1998).

This research aims to uncover factors influencing policy-practice and means-ends decoupling, as well as the tight coupling of ES within the culture of NESU. Given the university-wide nature of ES, with contributions from all units and employees, a multiple case study design was deemed most appropriate. The exploratory case study design proposed by Stake (2006) aligns well with this objective. Additionally, the "multiple holistic design" (Yin 2018) offers a suitable framework as it allows for exploring "literal replication" across cases, considering the emerging

nature of the research phenomenon (Saunders, Lewis, and Thornhill 2016; Johnson and Christensen 2004).

Lozano (2009) suggests a sweet spot of five to ten cases for PhD studies. The initial goal was to investigate the phenomenon across ten Scottish universities. However, the sensitive nature of the research topics presented access challenges, ultimately limiting participation to two universities. Despite this, the data obtained from these case studies provides valuable insights into policy-practice and means-ends decoupling and the tight coupling of ES within university culture.

5.5.2. *Grounded Theory*

This research employs Grounded Theory (GT) as a core research strategy. Developed in the mid-1960s by Glaser and Strauss, GT emerged from a desire to address the perceived neglect of theory development within qualitative research (Holton 2008). This methodology offers a qualitative approach that emphasises theory creation through a deep understanding of the phenomenon under investigation (Silverman 2014). Silverman (2014, p. 119) explains that GT is "a method of qualitative inquiry in which researchers develop inductive theoretical analysis from their collected data and subsequently gather further data to check these analyses."

The original formulation of GT involves multiple stages of data collection, refinement, and categorisation (Kolb 2012). It prioritises participants' perspectives, allowing them to reflect and articulate their thoughts on the issues. Through this approach, researchers can gain valuable insights and understanding from participants' viewpoints (Holton 2008). GT is beneficial in studies seeking new perspectives or alternative interpretations of a subject (Harris 2015). Given the research goal of generating new insights and understandings regarding the factors influencing policy-practice and means-ends decoupling of ES and the promotion of tight coupling within institutional culture, GT proves a well-suited methodology.

There are three main strands of GT (Turner and Astin 2021). The first is the classic Glaserian approach, proposed by Glaser and Strauss in 1967. This version advocates for a strictly inductive approach, where researchers conduct a literature review only after data collection, analysis, and theory development are complete. This aligns with the positivist stance that researchers should remain free from pre-existing biases and assumptions from the literature to avoid forcing data into preconceived notions.

The second strand, proposed by Strauss and Corbin (1990, 1998), adopts a more pragmatic position. This approach acknowledges the value of prior knowledge and allows researchers to leverage existing literature before and during data collection and theory development. Proponents argue that background knowledge equips researchers to identify areas ripe for theory development and facilitate comparisons between data and literature sources (Turner and Astin 2021).

The third strand, introduced by Chamaz (2006), embraces a constructivist epistemology. This perspective argues that theory is not purely discovered but rather co-constructed through the interaction of the researcher's background, views, culture, and participants' experiences. This approach encourages a comprehensive literature review before and after theory development, fostering researcher reflexivity and transparent acknowledgement of potential preconceptions (Turner and Astin 2021).

This research adopts the Strauss and Corbin (1990, 1998) version of GT. This strategy allows for a preliminary literature review before data collection, which was crucial for several reasons. Firstly, an initial literature review was necessary to obtain research approval from the university's formal PhD review processes and ethics committee. Secondly, conducting this early review helped set the stage for the research by identifying critical gaps within existing knowledge and shaping the direction of theory development.

While GT offers a valuable methodology, it is not without its critics. Researchers new to GT may find its complexity overwhelming, potentially leading to data collection and analysis challenges. These challenges can introduce errors and personal biases, potentially compromising the reliability of research findings. As a novice researcher using GT for the first time, she found it challenging and overwhelming to comprehend the various principles governing this approach.

However, the researcher actively addressed these challenges by participating in university-offered GT training sessions, maintaining consistent communication and verification with academic supervisors and mentors, and engaging in independent study of the methodology. Throughout the data analysis phase, the researcher maintained an open mind and employed the principles of constant comparative analysis, as advocated by GT scholars.

5.6. Sampling

Qualitative research presents unique challenges when it comes to sampling, with many techniques to consider (Morse, 1991). Researchers must make two critical decisions: a) selecting the cases for study (e.g., organisations, communities) and b) choosing the participants within those cases (Bryman, 2016). This research employed a purposive sampling strategy for both cases and participants.

Purposive sampling allows researchers to select cases and participants based on pre-defined criteria, maximising the potential for information-rich data (Bryman, 2016; Saunders, Lewis, and Thornhill, 2016). Braun and Clarke (2014, p. 56) define it as "selecting data cases (participants, texts) on the basis that they will be able to provide information-rich data to analyse." This research adopted purposive sampling to ensure cases (universities) and participants aligned with the study objectives. Judgmental selection was employed, focusing on universities located in North-East Scotland with established or developing ES practices within their context.

While other sampling techniques, such as convenience and snowball, are standard in qualitative research, they were unsuitable for this study. Given the research goal of theory development, cases and participants were chosen strategically to elaborate on emerging or developing theories (Braun and Clarke, 2014, 2016).

Snowball sampling, also known as friendship pyramiding, was deemed unsuitable due to several limitations. First, it risks over-representing specific social groups with similar views (Sadler et al., 2010; Clarke and Braun, 2018). Second, it raises ethical concerns regarding participants disclosing personal information about others obtained in private contexts. Finally, with snowball sampling, it is challenging to determine when data saturation has been reached (Clarke and Braun, 2018).

Convenience sampling, where readily available participants are selected, was also considered inappropriate. This method is less rigorous and challenging to justify, as participants may not bear a necessary relationship to the broader population under study (Clarke and Braun, 2018). Purposive sampling allows for a targeted approach to case and participant selection in qualitative research. This research justifies its use based on the need for information-rich data and the goal of theory development. The limitations of alternative sampling techniques, such as snowballing and convenience sampling, further solidify the suitability of purposive sampling for this specific study.

5.6.1. Criteria for the Selection of Case Studies

This research employed a rigorous approach to case study selection to ensure the collected data yielded rich insights and maximised the potential for theoretical development. The following established criteria guided this process:

1. **Geographic Location- Focus on North-East Scotland:** This research, which focused on North-East Scotland, offered several advantages. First, it allowed for a

geographically concentrated sample, facilitating data collection and fostering potential cross-case comparisons. Second, universities within the same region likely share similar environmental challenges, policy landscapes, and cultural nuances, reducing potential confounding variables.

2. **Established Environmental Sustainability Practices: A Minimum Five-Year**

Commitment: Universities selected for this study had a demonstrably strong commitment to ES, evidenced by formal engagement for at least five years. This criterion ensured that the participating universities had established structures, initiatives, and policies related to ES. Examples of such evidence included ongoing ES projects, dedicated sustainability staff or departments, and recognition in external ES ranking tables. Universities with a well-developed foundation in ES practices provided a richer context for exploring the nuances of policy-practice and means-ends decoupling.

3. **Research Access: Ensuring Effective Data Collection:**

Accessing university personnel and relevant data was paramount. The selection process prioritised universities where the researcher could establish contact with key informants and secure permission to collect data through interviews, document reviews, or other methods. Prior research experience, professional networks, and university ethics approvals all played a role in facilitating access.

4. **Resource Availability: Balancing Research Needs with Practical Considerations:**

The research design considered the resources available for data collection, particularly travel. Universities in North-East Scotland offered a logistical advantage, minimising travel costs and maximising the time dedicated to data collection at each case study site.

5. **Contextual and Operational Similarities: Seeking Common Ground:**

Beyond geographic proximity, the research aimed to select universities with similar contextual and operational features (Bryman 2016). This included a shared ES context, such as facing comparable environmental challenges or adhering to similar regional

sustainability policies. Additionally, universities with operational similarities in campus size, staff and student population, and administrative structures were considered. These shared characteristics allowed for more focused comparisons across cases and minimised the influence of extraneous variables on the research findings.

By carefully considering these established criteria, the research project ensured the selection of case studies that would yield optimal insights into policy-practice and means-ends decoupling within the context of university-level environmental sustainability efforts. Initially, the research aimed to involve ten case studies across Scotland. However, only two universities ultimately granted participation. While this number falls below the standard for PhD research, the obtained data remains valuable for achieving both "literal replication" and theoretical replication compared to a single case study. Securing access to two universities for an in-depth analysis of the research phenomenon is considered a success rather than a limitation.

The sensitive nature of the research topic necessitates university self-disclosure of vulnerabilities, revealing areas where policy-practice and means-ends decoupling in ES may occur. Given these sensitivities, Table 15 summarises the selected case study universities alongside details of secondary data sources consulted at each institution. To ensure anonymity, pseudonyms have been assigned to each university.

Table 15: Details of the case studies selected for the research Figures as of the Year 2017

Name of University	University A	University B
Location	North-East Scotland	North-East Scotland
Number of sites owned by the university	4	2
Student numbers as of the 2016/17 academic year	14,150	12,530
Staff Numbers as of the 2016/17 academic year	1,460	680
Length of time operationalising ES	7years	6years
The university has ongoing ES projects.	Yes	Yes
The university has sustainability managers.	Yes	Yes
The university has a dedicated sustainability department	Yes	Yes
University ES performance captured on external ES ranking and public databases.	Yes	Yes
Sources consulted for Secondary information about case studies	<ul style="list-style-type: none"> • University Webpage • Sustainability policy and strategy documents • HESA statistics report (2022) • People & Planet Report 2020 • Sustainable Scotland Network report (2021) 	<ul style="list-style-type: none"> • University webpage • Sustainability policy • HESA statistics report (2022) • People & Planet Report (2020) • Sustainable Scotland Network report (2021)

Source: Compiled by the Researcher

5.6.2. *Selecting Research Participants*

The researcher employed a combined purposive and theoretical sampling strategy to ensure that participants directly addressed the research questions (Bryman, 2016). This approach involved identifying individuals with the most relevant insights into the research topic. The researcher established pre-defined criteria to ensure participants possessed valuable knowledge pertinent to the research topic (Braun & Clarke, 2014, 2016). Applying these criteria led to the selection of three distinct participant groups:

- **University Sustainability Managers:** The researcher selected university sustainability managers because they directly oversee the implementation and execution of their university's ES goals and vision (Jabbour et al., 2010).

- **Academic Staff:** This group provided valuable insights into their experiences with the university's sustainability practices. Their firsthand observations shed light on how the institution approaches ES (Shah & Corley, 2006).
- **Non-Academic/Professional Services Staff:** Similar to academic staff, this group's experiences informed the research by revealing the impact of university sustainability practices on their work. The researcher recognised the importance of university employees, as highlighted by Mitchell et al. (1997). These employees are vital stakeholders who contribute to achieving sustainability goals and are influenced by the university's environmental culture. Their role as active observers with valuable information to contribute made their perspectives critical to the research.

The final sample size was guided by theoretical sampling. Theoretical sampling is an iterative process where data analysis and theory development inform participant selection (Braun & Clarke, 2014, 2016). This approach utilises the concept of saturation, which occurs when new data collection ceases to yield novel insights or understanding (Bryman, 2016).

The researcher adopted theoretical sampling due to its emphasis on close data monitoring. This approach indicates when data collection can be suspended, such as when sufficient data representation is achieved (Braun & Clarke, 2014, 2016). After analysing data from each interview, the researcher actively monitored for signs of saturation. Following twenty-three interviews, the researcher concluded that saturation had been reached, as no new information was emerging. Nevertheless, to ensure no potentially valuable data points were missed, the researcher continued data collection for two additional interviews. This resulted in a final sample size of twenty-five participants.

The concept of saturation in qualitative research can be debated. Brocki and Wearden (2006) highlight the possibility of subsequent interviews yielding critical or unexpected findings. They

also point out the potential for research to continue indefinitely unless the researcher recognises the representativeness of the collected data. Therefore, qualitative research can be considered sufficiently complete if it achieves understanding, fosters coherence and integration in its analysis, and ultimately tells a compelling and persuasive story.

5.6.3. Accessing Research Participants

To identify potential participants, the researcher began by reviewing online staff profiles on the websites of the two universities involved in the study. A total of 245 profiles were examined. Based on this review, the researcher compiled a list of contacts and crafted a personalised email invitation to participate in the research. Prioritising participant privacy, the researcher avoided using blind carbon copy (BCC) when sending these emails. Instead, they used a method that ensured recipient anonymity, such as sending individual emails.

To ensure informed consent, the researcher sent a comprehensive email explaining the study's academic purpose (Appendix 1). This email also emphasised that there were no right or wrong answers, prioritising participants' views and experiences. Additionally, the confidentiality of all provided information was assured. After sending the draft emails, the researcher conducted further screening, resulting in a valid list of sixty-eight potential participants. The following reasons led to the exclusion of one hundred and seventy-seven contacts from the research.

1. **Non-response:** These contacts did not respond or reply to the initial email invitation.
2. **Declined Participation:** Some contacts refused the invitation to participate in the study.
3. **Invalid Emails:** The researcher identified emails listed on the website as incorrect or invalid
4. **Outdated Information:** Outdated university website information led to the inclusion of contacts who had retired or left the university.

5. **Unavailable Contacts:** These contacts were on break, sabbatical, or annual leave.
6. **Newcomers:** Some recently joined the university and lacked the relevant knowledge or experience for the study.
7. **Referral:** Several respondents identified colleagues they believed would be better suited for the study and referred them to the researcher.

Following the initial screening, the researcher excluded forty-three additional participants from the study for various reasons detailed below (Table 16 presents the final sample of twenty-five participants). These reasons included:

1. **Participant withdrawal:** Some participants who initially agreed to participate later cancelled their involvement.
2. **Scheduling conflicts:** The researcher identified scheduling conflicts with a few participants whose proposed interview dates fell outside the designated data collection timeframe.
3. **Incomplete interviews:** In some cases, participants exhibited discomfort during discussions, necessitating the researcher to conclude the interview early, resulting in unusable data.
4. **Researcher error:** The researcher identified and excluded two interviews due to a technical error in the operation of the recording equipment.
5. **Saturation reached:** The researcher stopped data collection upon reaching theoretical saturation.

Table 16: Profile of interview respondents

Assigned Pseudonym	University	Role	Length of employment with the university	Gender	Interview Time and Duration
R1	B	Academic (Research)	4 years	Male	4 pm, 1hr 18mins
R2	A	Non-Academic (sustainability and Estates)	13 years	Male	11,59am, 50mins
R3	B	Academic (Teaching and Research)	11 years	Male	3 pm, 1hr 5mins
R4	A	Non-Academic (sustainability and Estates)	4.5 years	Male	10,15am, 52mins
R5	B	Academic (Teaching)	3 years	Male	1 pm, 32mins
R6	B	Non-Academic (Administration)	4 years	Female	2 pm, 47mins
R7	B	Academic (Teaching and Research)	8 years	Male	2 pm, 1hr 4mins
R8	A	Academic (Teaching and Research)	6years	Female	2 pm, 29mins
R9	A	Academic (Teaching)	3.3 years	Male	3 pm, 57mins
R10	B	Academic (Teaching and Research)	5.4 Years	Male	11,30am, 41mins
R11	A	Academic (Teaching)	5years	Male	12 pm, 46mins
R12	B	Academic (Teaching and Research)	8years	Female	11 am, 42mins
R13	A	Academic (Teaching and Research)	9.3 years	Male	2 pm, 49mins
R14	A	Non-Academic (Administration)	4.8years	Female	2 pm, 32mins
R15	B	Academic (Teaching and Research)	6years	Male	11,30am, 46mins
R16	B	Academic (Teaching)	8 years	Female	3 pm, 39mins
R17	B	Non-Academic (Sustainability and Estates)	3years	Female	1 pm, 43 mins
R18	A	Academic (Teaching and Research)	7years	Male	47mins, 4 pm
R19	A	Academic (Teaching)	5years	Male	10,30am, 43mins
R20	A	Academic (Research)	4years	Female	2 pm, 49mins
R21	B	Non-Academic (Administration)	2.7years	Female	11,30am, 33mins
R22	B	Non-Academic (Sustainability and Estates)	5years	Male	2,40pm, 41mins
R23	A	Academic (Teaching and Research)	10years	Male	10 am, 44mins
R24	A	Academic (Teaching and Research)	4years	Male	2 pm, 39mins
R25	B	Academic (Teaching and Research)	2years	Female	11 am, 41mins

Source: Compiled by the Researcher

5.7. Data collection

5.7.1. Semi-structured Interview

A semi-structured, face-to-face interview was used to obtain the data for this research. This data collection technique was adopted because it aligns with the exploratory design of this research. The semi-structured interview is suited to studies seeking to capture the social nature of people, including understandings, values, beliefs, behaviours, encounters, emotions, stories, relationships, etc. (Bryman 2016). It is a good fit for this research since the goal is to capture informants' perceptions of institutional factors, which further policy-practice and means-ends decoupling ES in their organisation, how ES can become tight decoupled into organisational culture, and what institutional barriers can hinder the tight coupling of ES into culture.

There are three main data collection methods suited for qualitative research. These include observation, interviews and focus groups (Table 17) (Bryman 2016, Saunders, Lewis, and Thornhill 2016). The semi-structured interview was a preferred choice for this research because it provided flexibility, allowing the researcher to conduct her interviews guided by an interview guide rather than a rigid pre-set list of questions (structured interview) or no set questions (Unstructured interview) (Nicholls, Holt and Polman 2005, Clarke and Braun 2018; Bryman, 2012).

During the interview, the researcher could ask follow-up questions and use prompts and probes to facilitate discussions (Kvale, 1996; Bryman, 2016). Furthermore, the semi-structured and face-to-face interviews enabled the researcher to observe participants directly and capture non-verbal cues, such as their body language and emotions, which is also revealing (Bryman 2016).

Table 17: Summary of data collection methods.

	Observations	Interviews	Focus group
Meaning	“A method for systematically observing the behaviours of individuals in terms of a schedule of categories” (Bryman 2016 p.267)	“The systematic collection of data is done by asking questions, then carefully listening to and recording or noting the responses concerning your research topic. This data collection technique provides access to a range of experiences, situations and knowledge and provides the opportunity to explore issues” (Altinay and Paraskevas 2008, p.107)	“A method of interviewing that involves more than one, usually at least four, interviewees. Essentially, it is a group interview” (Bryman 2016 p.500).
Advantages	<ul style="list-style-type: none"> *Can avoid uncomfortable situations *Researcher can record information *Unusual behaviours can be noticed Experience with participants. *Inherently longitudinal 	<ul style="list-style-type: none"> *Participants can observe directly *Researcher can control the line of questions *The researcher can record the interview process *Can obtain historical information *Greater breadth of coverage *Allows access to a broader variety of people and situations 	<ul style="list-style-type: none"> *Encourages participants to share their perceptions in an open and tolerant environment. *Pre-held views are revealed * Allows the researcher to address the ‘why’ research questions sufficiently. *Helpful in eliciting a variety of views relating to a topic under investigation
Disadvantages	<ul style="list-style-type: none"> *Need the first-hand experience of the researcher *Confidential information can be revealed *It is hard to build trust and rapport with respondents * Can be intrusive in people’s lives. *The presence of a participant-observer would result in reactive effects (observed may behave less naturally) 	<ul style="list-style-type: none"> *The researcher may have biased responses *Provides indirect information *Interviews can sometimes be very long 	<ul style="list-style-type: none"> *The researcher has less control over proceeding than with interviews *Data are complex to analyse *Focus groups are challenging to organise Data recording is more time-consuming to transcribe. *Group effect problems

Source: Compiled by the Researcher from Creswell (2003), Yin (2014), Altinay and Paraskevas (2008), Saunders, Lewis and Thornhill (2016) and Bryman (2016).

5.7.2. *The Pilot*

The interview phase of this research commenced with the meticulous development of research materials, including the interview guide (Appendix 2), consent form, and participant information sheet (Appendix 1). Recognising the importance of a well-honed interview guide, the researcher undertook a rigorous piloting activity before conducting the main study (Rahman, 2018).

The pilot study was crucial in ensuring the interview guide's effectiveness. This involved testing the initial research question and interview guide with a small sample of participants. The primary purpose of the pilot interviews was to identify potential issues that might require modification before embarking on the primary data collection phase (Rahman, 2018).

Conducting three pilot interviews allowed the researcher to receive feedback that affirmed the appropriateness of the interview questions. The pilot interviews led to minor revisions in the guide's structure, ensuring a smoother interview flow for participants. Following these refinements, the researcher transitioned to conducting the main interviews.

Data collection spanned six months, from March 2017 to August 2017. The researcher conducted twenty-two in-depth interviews following the three pilot interviews, generating a rich dataset. To ensure rigorous data management, the researcher promptly transcribed interviews and began data analysis within weeks of each one. This iterative process allowed for continuous evaluation of the data's relevance to the research themes and facilitated the identification of theoretical saturation, the point at which no new insights emerge from further data collection (Guest et al., 2006).

This revised section emphasises the importance of pilot testing, clarifies the purpose of the pilot interviews, and introduces the concept of theoretical saturation for a more complete picture of the data collection process.

5.7.3. The Interview - Procedure and Transcription

The initial draft of the interview guide contained thirty questions. The guide was streamlined to fifteen focused questions through a rigorous collaboration with thesis supervisors and academic mentors, ensuring optimal data collection (see Appendix 2 and Table 18). Table 18 further illustrates the alignment between the interview questions and the main research themes.

All interviews were audio-recorded with participant consent. Interview sessions ranged from 39 minutes to 1 hour and 15 minutes. Before commencing each interview, the researcher addressed any participant inquiries. These inquiries typically focused on logistical aspects such as interview length or recording equipment suitability rather than the specific content of the questions.

Before each interview, the researcher reiterated confidentiality and secured participants' verbal consent to record the session. The researcher prioritised participant comfort by arranging interviews at convenient locations, with participants mostly opting for their offices/workspaces. Prioritising participants' preferences ensured a familiar and comfortable environment conducive to open dialogue.

The interview discussions began with informal rapport-building questions, such as inquiring about participants' roles and tenure at the university. This initial phase transitioned smoothly into the core research questions. While open-ended questions were prioritised, the researcher strategically employed prompts like "Tell me more about that?" or "Can you elaborate?" when necessary (Nicholls, Holt, & Polman, 2005, p. 116). Most importantly, participants were encouraged to share concrete accounts and examples from their experiences. This approach ensured that the data captured participants' evaluations of the research phenomenon rather than interpretations imposed by the researcher. Each interview concluded with sincere gratitude for

the participant's time and an opportunity for them to ask any final questions (Braun & Clarke, 2014, 2016).

The researcher self-transcribed all interview data into Microsoft Word (see Appendix 3), which fostered an intimate understanding of the data. After transcribing each interview, the researcher carefully reviewed the transcript while listening to the recording. This meticulous process ensured the accuracy of the transcribed data by identifying and correcting any potential omissions or alterations before proceeding with data analysis and coding.

Table 18: The research interview guide and its links to the main themes of the research

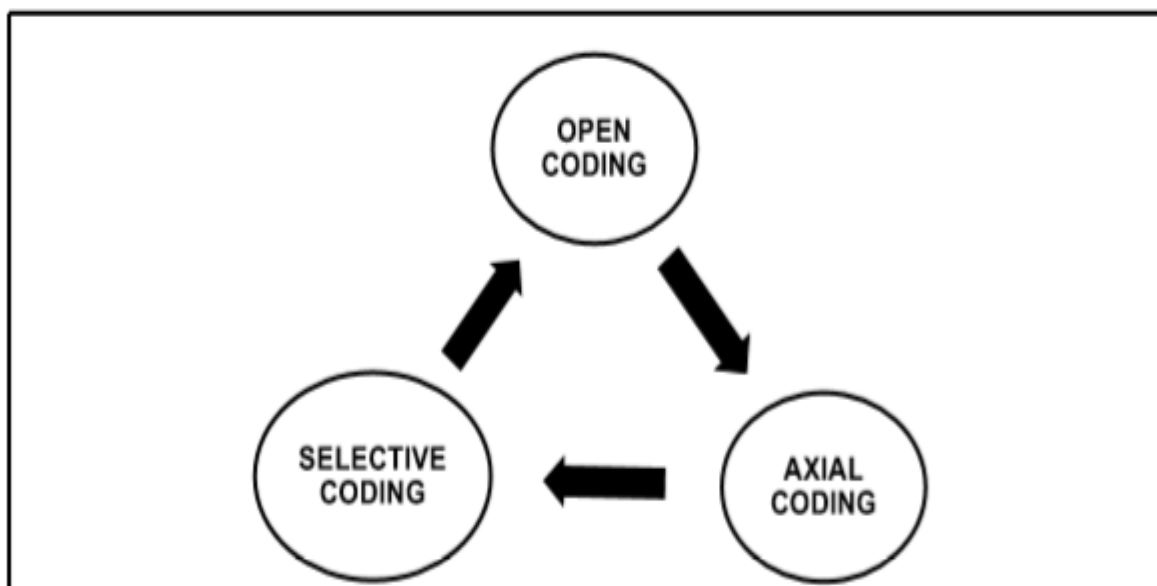
Overarching Research Aim	
To investigate the challenges and opportunities for achieving tight coupling of ES within the daily routines and culture of NESU by leveraging university employee perspectives through the constant comparative Grounded Theory (CCGT) methodology	
General/introductory questions	<ol style="list-style-type: none"> 1. Please tell me what your role here at this university is. 2. How long have you been employed at this university? 3. What do you understand by ES? 4. How do you see your university implementing ES?
<u>Research Question One</u> What factors contribute to the policy-practice decoupling of ES in NESU?	<ol style="list-style-type: none"> 5. Do you think your university is typical of others in the sector in their practice of ES? (If so, please tell me how.) 6. In what ways do you find the university deviating from its ES strategy? 7. In what ways have you experienced separation/disconnect between the university policy and its practice of ES?
<u>Question Two</u> What factors contribute to the means-ends decoupling of ES in NESU?	<ol style="list-style-type: none"> 8. What impacts have you seen or experienced since the university started its implementation of ES? 9. What do you think prevents ES's intended outcomes from being realised at this university?
<u>Question Three</u> How can NESU, by leveraging the perspectives of university employees, reverse its current decoupling practices and enable the tight coupling of ES into daily routines and culture?	<ol style="list-style-type: none"> 10. What advice would you give for how the university can better tight couple or embed ES to become the core of its culture? 11. What do you think can be done by the university to improve the coherence (understanding) of ES practices among organisational members? 12. In your view, what can be done to encourage buy-in, commitment, and participation of institutional members of ES? 13. What do you suggest the university does to mobilise collective action for ES from all employees? 14. What do you think can be done to enhance the monitoring of ES in this university?
<u>Question Four</u> What barriers might hinder NESU's efforts as it strives to tighten the coupling of ES into its culture?	<ol style="list-style-type: none"> 15. In your view, are there barriers you think will seriously hinder efforts to tight couple/embed ES into the culture of this university?

5.8. Data Analysis

5.9.1 Data Coding

This research uses the standard GT techniques in coding data and developing categories. The open, axial, and selective coding process proposed by Corbin and Strauss (2008) is adopted and used to organise the raw data obtained for this research. The Corbin and Strauss coding process offers a clear guideline for coding data (Cooney 2010, Saldana 2013). The three circular processes of coding (Figure 12) suggested by Corbin and Strauss is a suitable choice for research where a topic seeks new understanding to inform literature and to produce a theory that will help to tight couple ES into the culture of NESU (Cooney 2010, Raffe, and Loughland, 2021). Furthermore, using the Corbin and Strauss GT coding enabled the researcher to discover and evidence the general perceptions held by participants of their social settings as they relate to their culture towards ES (Charmaz and Thornberg, 2020; Raffe and Loughland, 2021).

Figure 12: Corbin and Strauss (2008) coding process



Source: Rahman 2018 p.146

5.8.1.1. Open Coding

Corbin and Strauss's (2008) coding process are linear and begins with “open coding”. Open coding involves the dismantling of texts through a process of examination, categorisation, and conceptualisation of data. The open coding procedure of this research began with the researcher breaking down data into low-level codes by going through the transcripts line-by-line and extracting verbose sentence descriptors (Raffe and Loughland, 2021). Table 19 shows one interview transcript extract and the line-by-line coding undertaken. The line-by-line approach was helpful in fully capturing discreet parts of participants' meanings (Endacott 2005). A code is created when participants refer to factors that convey decoupling, tight coupling, and barriers to ES in institutional culture. If a code is mentioned twice by the same participant while referencing the same context, it was only coded once (Raffe and Loughland, 2021).

Table 19: Example of the line-by-line coding

Interview Extract from AF-University A (Academic-Teaching and Research)	Examples of line-by-line coding
<p>I have been a policy adviser for ten years this week. However, only a portion of that time has been spent on sustainability issues. I have always had a portfolio that covered, you know, an array of different institutional priorities on sustainability. I have been involved in looking at policy sustainability reporting, which involves what we do voluntarily through the University and Colleges Climate Commitment initially and later through the public bodies’ duties, looking at how we interact with things like the Green League. (When that was maybe more of a thing than it is now. This seems to be in a bit of turmoil, and I think universities up and down the country are disengaging with it for various reasons. Err that is kind of the end I am involved in) (referring to the green league table). I am somewhat less involved in the day-to-day operational end of what we do in Energy or waste management. That is very much what others in the organisation do. I will say it has been challenging; as much as we do take it seriously as an agenda, it is not serious enough to put a lot of resources into it (referring to ES). so, we can single out projects or initiatives where pockets of excellence happen. So, there are some tremendous social responsibility programs. We can point out some good buildings that have been renovated. We managed to maintain things like fair trade status; I have some colleagues in other parts of the university who do good stuff around equality and diversity, living wage issues, engaging some young adults with learning needs</p>	<ol style="list-style-type: none"> 1. The university has an ES policy adviser. 2. The sustainability policy adviser dedicates only some of his time to ES issues. 3. University has different institutional priorities on sustainability. 4. The manager is involved in looking at policies. 5. The manager engaged in sustainability reporting. 6. monitors interaction with public bodies like Universities and Colleges Climate Commitment 7. Monitors interaction with green league tables 8. Managers are Less involved in the operational end, day-to-day energy or waste management. 9. Not enough resources are put into supporting ES. 10. Some projects with pockets of excellence happen. 11. Tremendous social responsibility programs. 12. Some renovated buildings 13. The university managed to maintain a fair-trade status. 14. Do good stuff around equality and diversity. 15. Address living wage issues. 16. Engage some young adults with learning needs.

and workplace programs and things like that. There is a lot that forms part of that sustainability agenda, but it is not championed. You know, we are doing less in terms of engaging people in the absolute nitty-gritty of things like energy management, and why is it that we are being sustainable. So, there is no direct correlation to, for example, climate change, adaptation, and mitigation. So, we do it, but we do not necessarily evangelise about why we are doing it if you know what I mean.	17. To have workplace programs 18. sustainability agenda not championed. 19. Doing less engaging people, 20. not a lot of direct correlation back to climate change, adaptation, and mitigation. 21. Universities do not evangelise about why they are practising ES.
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Source: The Researcher Generated from Fieldwork Data

Following the coding of individual data, close examination and comparisons were conducted to identify similarities and differences between each data set. It was essential to examine and compare the data set as the investigation aimed to determine the level of agreement between participants. This led to identifying more codes, which were added to the open codes list (Strauss and Corbin, 1990). Three hundred and twenty codes were generated from analysing twenty-five interview scripts. Table 20 presents an extract of open codes generated (See Appendix 3 for a complete list of codes generated from analysis of twenty-five interviews).

Table 20: Example of open codes generated for this research

Open codes	
Code 001: inconsistencies in waste management practices Code 002: disconnect between commercial activities and ES principles. Code 003: recycling is promoted, but non-recyclable packaging is used for food sold on campus. Code 004: branded reusable bottles and mugs are distributed on campus, but the water fountain does not dispense water to allow people to use the refillable bottles. Code 005: organic food and healthy eating are promoted, but food sold on campus is unhealthy for students. Code 006: a disconnect between environmental concerns and safety. Code 007: expectations to include sustainability in teaching without guidance. Code 008: food waste reduction is encouraged, but commercial food stalls on campus cook more food than is consumed. Code 009: Operational-side and sustainability side of things Code 010: limited information on sustainability research funding & bids Code 011: no available data for researchers Code 012: Misinformation Code 013: wrong/mislabelled recycling bins	Code 026: The university is disengaging with green rankings. Code 027: university keeps low profiles. Code 028: student union not intrinsically motivated for sustainability. Code 029: students not holding the university accountable. Code 030: The university does not sign up for sustainability commitment Code 031: universities fail to align with best-practice peers in the sector. Code 032: internal processes do not capture sustainability. Code 033: no stakeholder engagement mechanisms Code 034: no disruptions to usual ways of working Code 035: Sustainability is given as responsibility to only one department. Code 036: The sustainability department is separated from other departments. Code 037: Sustainability recorded and pushed on by central services. Code 038: Sustainability pushed on centrally by the estates' department. Code 039: lack of someone or a team to continuously speak to the staff and students. Code 040: the responsibility for waste management is given to cleaners.

<p>Code 014: lack of correct information on separating waste</p> <p>Code 015: wrongly positioned bins.</p> <p>Code 016: posters on top of bins not relevant to recycling</p> <p>Code 017: stakeholders lack understanding of how ES is operated at the university.</p> <p>Code 018: no changes made to commercial activities.</p> <p>Code 019: lack of pressure from external sustainability watch organisations like EAUC, P&P, etc.</p> <p>Code 020: waste sorting is promoted, yet general waste bins are in strategic areas within hubs.</p> <p>Code 021: people working in the commercial areas lack awareness of the university waste management policy.</p> <p>Code 022: lack of ES information around water management</p> <p>Code 023: more packaging for products</p> <p>Code 024: Commercial areas cook more food than is consumed.</p> <p>Code 025: absence of sanction from external stakeholders' university accountable</p>	<p>Code 041: cleaners' priority is to clean & not arrange bins correctly.</p> <p>Code 042: The university has less control over outsourced responsibilities.</p> <p>Code 043: Subcontracting impacts universities' ability to evidence tangible outcomes for sustainability.</p> <p>Code 044: A lost opportunity to make income from waste material.</p> <p>Code 045: contractors get free waste materials from the university,</p> <p>Code 046: install automated waste collection and refund vending machines on campus.</p> <p>Code 047: contractors generate income from sales of free materials from the university.</p> <p>Code 048: set-up business-oriented waste management unit</p> <p>Code 049: The university has no regular interaction with service providers.</p> <p>Code 050: draw contractors closer to offer more student learning opportunities.</p>
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Source: The Researcher Generated from Fieldwork Data

5.8.1.2. Axial Coding

Axial coding is the second phase of coding proposed by Corbin and Strauss (2008). Axial coding involves putting together the pieces of data into relevant categories and subcategories to understand the research issues. The researcher synthesised the open codes by grouping similar open codes into higher-level themes through selective coding (For example, see Table 22 and Appendix 4) (Raffe and Loughland, 2021). The goal is to combine all data from open coding in a new way to bring meaning and show connections between themes and their sub-themes (Rahman 2018). The complete set of open codes generated was reorganised into categories and then condensed into the central themes or apriori codes created for the research (see Table 21) (Harding 2013).

Table 21: Examples of Axial themes created for the research

Axial coding		
THEME 1: ES DECOUPLING FACTORS	THEME 2: ES TIGHT COUPLING INTO INSTITUTIONAL CULTURE	THEME 3: BARRIERS TO ES TIGHT COUPLING INTO INSTITUTIONAL CULTURE
Subtheme 1: Policy-Practice Decoupling. Subtheme 2: Means-ends Decoupling.	Subtheme 1: Coherence Subtheme 2: Cognitive participation Subtheme 3: Collective Action Subtheme 4: Reflective Monitoring	Subtheme 1: Individual/psychological barrier Subtheme 2: Systemic Barrier Subtheme 3: Resource Constraint Barrier

Source: The Researcher Generated from Fieldwork data

Table 22: Example of open codes grouping into Axial Codes

THEME 1: ES DECOUPLING FACTORS
<p>SUBTHEME 1: POLICY-PRACTICE DECOUPLING.</p> <p><i>Bounded Rationality</i></p> <p>Code 010: Limited information on sustainability research funding & bids Code 011: No available sustainability data for researchers Code 012: Misinformation Code 013: Wrong/mislabelled recycling bins Code 014: Lack of correct information on separating waste Code 015: Wrongly positioned bins. Code 016: Posters on top of bins not relevant to recycling Code 017: Stakeholders lack understanding of how ES is operated at the university. Code 220: Lack of communication Code 018: No changes made to commercial activities. Code 021: People working in commercial areas lack university waste management policy awareness. Code 022: Lack of ES information in the area of water management Code 023: More packaging is used to pack food products. Code 024: Commercial area cooks more food than is consumed. Code 020: Waste sorting is promoted, yet general waste bins are situated in strategic areas within hubs (see the complete list of codes in Appendix 4)</p> <p><i>Fragmentation of External Environment</i></p> <p>Code 025: Absence of sanction from external stakeholders' university accountable Code 026: Universities disengaging with green rankings. Code 027: University keeps low ES profiles. Code 028: Student union and alumni not intrinsically motivated for sustainability. Code 029: Students not holding the university accountable. Code 030: University do not sign up for sustainability commitment Code 031: Universities fail to align with best practice peers in the sector. Code 019: Lack of pressure from external sustainability watch organisations like EAUC, P&P, etc.</p> <p><i>Fragmentation of Internal Environment</i></p> <p>Code 032: Internal processes do not capture sustainability. Code 033: No stakeholder engagement mechanisms Code 034: No disruptions to usual ways of working Code 035: Sustainability is given as responsibility to only one department. Code 036: The sustainability department is separated from other departments. Code 037: Sustainability recorded and pushed on by central services. Code 038: Sustainability pushed on centrally by the estates' department.</p>

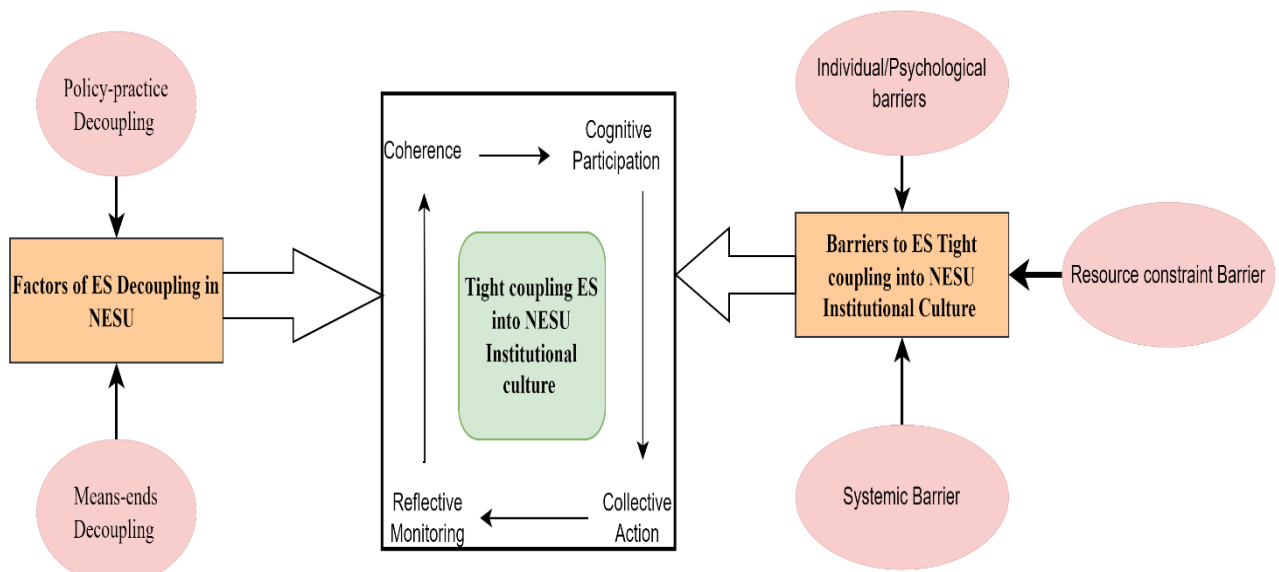
Code 214: Less involved in the operational end, day-to-day energy or waste management.
Code 218: Not enough time dedicated to things of sustainability.
 (see the complete list of codes in Appendix 4)

Source: The Researcher generated from Fieldwork Data

5.8.1.3. *Selective Coding*

Selective coding is the third and final level of coding applied to establish processes and relationships within the data set. This level involves the integration of categories from primary themes and sub-themes created from axial coding to show an overall relation or to produce theories (Sanders et al. 2012; Saunders, Lewis and Thornhill 2012; Altinay and Paraskevas 2008). It requires logical connections between core categories to understand what happens in observed practices (Wahyuni 2012). These relations can be depicted using hierarchical or organisational outlining, such as visual or diagrammatical representation (Saldana 2016). An example of selective coding showing the relationship between themes is illustrated in Figure 13 (section 6.4).

Figure 13: Example of the research Selective Coding



Source: The Researcher Generated from Fieldwork Data

5.8.2. *Analysing Coded Data - Constant Comparative Method (CCM):*

During data analysis, this research followed the constant comparative method suggested by Glaser 1965. CCM involves an iterative process of joint coding, analysing, and comparing similarities and differences across data sets, classifying data to develop theory and refining data fit into concepts and categories (Green 1998). The goal of CCM is to facilitate a systematic generation of theories that are integrated, consistent, plausible, close to data and in a form that is clear and ready for further quantitative testing (Glaser 1965). CCM may be applied to any qualitative data and data units of any size. During the analysis, the researcher followed the four stages of CCM, as suggested by Glaser (1965). These include.

1. **Comparing incidents applicable to each category** involves coding individual transcript data into categories and comparing previous incidents in the same category across the data sets. For example, during the coding of factors of policy-practice decoupling, the researcher, following analysis of one data set, ensured that subsequent data analysis was compared with findings previously coded in this category. This helped the researcher generate the theoretical properties of this category.
2. **Integrating categories and their properties:** This stage involves comparing categories with categories, enabling the development of relationships and making theoretical sense of each comparison.
3. **Delimiting theory:** Discovering the underlying uniformities in categories and further delimiting the original list of categories according to the proposed theory's boundaries (Glaser 1965).
4. **Writing the theory:** This last phase of CCM theory was written and guided by all coded information,

The data for this research was coded manually without any data analysis or organising software. The reason for opting for a manual process was because, at the time, despite attending training on using the data analysis software NVivo, the researcher still had challenges fully comprehending and

understanding the functionality of this software. Several attempts to use the software led to the loss of work progress, so a resolution was reached to analyse data manually using an MS Word document. Though very time-consuming, it was easier for the researcher to interact with data in a way she understood.

During coding, a simple numbering system was followed to label emerging findings from the analysis. While analysing individual transcripts, data was labelled as 1,2,3 system, etc. The second analysis phase involved close examination and comparison between data sets, code 001, code 002, etc. Numbering was used to label qualifying data. This approach made it easy for the researcher to understand and differentiate between data from individual transcripts and data from comparing data sets. The approach adopted for labelling codes confirms the principles of GT that a researcher's background and culture (work culture) can influence the process and the way data are analysed (Turner and Astin 2021).

5.9. Research Ethics

Ethics in research stresses that a) a researcher be clear about the purpose of their research and the use of the data obtained; b) protect the rights of participants involved during the research; and c) act honestly in all aspects of the research process (Creswell 2010). Guidelines for ethical considerations and confidentiality have been suggested by Easterby-Smith et al. (2012) and Creswell (2013) (Table 23). The researcher was conscious of adopting these ethical guidelines. For example, regarding protecting the rights of participants involved in this research, the researcher ensured compliance with the ethics regulations set out by Robert Gordon University and, later, those of Bournemouth University. Ethical compliance involves completing an ethics form to self-assess possible ethical issues that may confront the research.

Table 23: Guidelines on ethical considerations and confidentiality

1. Protecting the participant's identity and information
2. Protecting the confidentiality of the collected data from fieldwork
3. Protecting the participant's anonymity
4. Declaring the intentions and purposes of the research
5. The guarantee of voluntary withdrawal from participation
6. Avoidance of any ambiguous and false data reporting
7. Manipulation of the findings and implicating self-work
8. The approval of the participants in research involvement
9. Consideration of effect of nature of data collection on participants

Source: Rahman (2018, p.155)

The ethics assessment revealed the main ethical issues of this research are information confidentiality and privacy. This is due to the researcher's inside role at one of her case study universities. An insider role had a moral implication for the researcher, who stood uncomfortably between being loyal to colleagues and the organisation for whom informal comments and minor incidences were most revealing (Kelly 1989). However, this ethical concern was managed successfully by complying with the university's moral code of conduct for data handling. The researcher ensured that the data storage was secured through password protection and that data was accessed only through trusted devices such as the university's approved systems and on the researcher's personal computer.

Furthermore, care was taken not to betray or abuse the insider information (Drake and Heath 2011). For instance, the researcher did the transcription of data personally, and to ensure confidentiality was maintained, the researcher cleaned the data. All information identifying informants and single-out case organisations was omitted during transcription. Data from the case study universities and participants were assigned unique pseudonym codes, e.g. university A and B and for participants R1, R2, etc.

5.10. Limitations of Methodology

Qualitative research studies are not without limitations, and this research, like any other qualitative study, has limitations, including issues of access, generalisation, validity, and reliability. The first limitation of this research is that it involved a limited number of cases, which poses problems of replication to other universities. However, lessons can still be learnt from the theory of this research by

any university struggling to make sense of how their culture can be transformed towards sustained ES effectiveness. Furthermore, the lack of resources (Time and finance) to fund the research and the nature of the topic under investigation also posed complexities which, despite best efforts, may still impact the overall structure and communication of the study.

The personal role of the researcher is an important attribute that affects the research. According to Baptiste (2001), researchers should evaluate themselves and their analyst role. The researcher had multiple researcher statuses, namely, insider and outsider researcher. Hellowell (2006) describes an 'insider researcher' as one who has extensive knowledge of the researched community or belongs to the group their participants belong to. An 'outsider researcher' is one with limited knowledge and who is not a member of the group to which their participant belongs (Hayfield and Huxley 2015). The researcher held an insider role at one university, having worked and interacted closely with the institution for over five years.

Academics, including Moustakas (1994), Jansen and Peshkin (1992), Denzin and Lincoln (2011) and Costley, Elliott, and Gibbs (2010), have identified strengths and weaknesses associated with an 'insider role'. One strength of being an insider is that a researcher will be privileged to have more profound social and interpersonal awareness of their participants. This is advantageous for researchers because they become driven to conduct ethical research, which keeps participants at the top of the agenda (Hayfield and Huxley 2015). As a member of the studied institution, the researcher had personal biases.

Thus, the researcher managed tension through reflexivity to maintain this continuum role of an insider and outsider critical of all observations (Humphrey 2007). For example, the researcher kept a reflexivity diary noting thoughts and feelings, which helped bracket perceptions and subjectivity (Cope 2014, Closa 2021). Also, the researcher took on the role of participant-observer to maintain objectivity.

Furthermore, being an insider, the researcher had intimate knowledge about the case organisation's history, functioning and employees (Hockey 1993). This facilitated the interview sessions, allowing practical discussions to erode, which went deeper into the topic and further refined the research focus.

The researcher's professional experience as a recruiter and a lecturer helped her gain valuable interviewing skills for the research. Finally, the unique position of the researcher provided her access to colleagues with a network of peers with expertise in ES. The researcher benefitted from these networks as discussions with subject experts during the early phase of this research helped shape the ideas and research trajectory.

However, there are some limitations linked with having an insider status. For instance, the researcher's knowledge and observations can interfere with the researcher's ability to interview informants objectively and analyse their comments (Costley, Elliott and Gibbs 2010). To address this problem, the researcher paid close attention to social relations with colleagues, maintaining self-awareness and consciousness constantly. During interviews, the researcher ensured to uphold professionalism by:

- Listening carefully and using probes to further discussions on questions
- Avoiding unnecessary interruptions during the interviews
- Ensure that participants' views from different departments across the universities are captured to reduce bias and increase the reliability of findings.
- Maintaining confidentiality of all involved in the research.

The researcher held an 'outsider researcher' role at the second case study organisation. According to Hayfield and Huxley (2015), the outsider role offers advantages such as a) the researcher can make observations and draw conclusions that an insider would not and b) they can notice features of the data that an insider may have overlooked. In contrast, the researcher may be unable to represent the experiences of participants accurately. As an outsider, the researcher distanced herself from the participants. Extra efforts were taken to maintain good rapport, though some respondents remained guarded to some extent. However, the researcher took this distance as a strength, as it was easier to ask questions that felt awkward.

Furthermore, during the interview, it was apparent that some informants, perceiving that their institution had little on ES, responded defensively by being apologetic and self-justifying (Hammersely and

Atkinson 2007). To bridge the ‘outsider’ limitation, the researcher conducted extensive background research on the university to facilitate interaction during the interview. This proved helpful as participants became more willing to open up and share their views once they realised the researcher had some knowledge of their university’s activities on ES.

Bias, assumptions and the researcher's values can impact the research process (Creswell, 2013). Therefore, disclosing the researcher's values and beliefs is extremely important in sustainability-related fields to ensure complete transparency (Creswell, 2003; Jickling, 2009; Saunders, Lewis and Thornhill, 2016). The researcher had an observer bias and the following assumptions, which shaped the trajectory of this research.

1. Climate change threatens humanity and poses significant environmental challenges, and universities should play a role in addressing these challenges.
2. There is a perceived deficit in the practice of ES in NESU.
3. It is crucial to find out what university staff members feel about the practice of ES in their institution.
4. The concepts of institutional theory and NPT will help to elucidate issues hindering ES tight coupling in NESU.
5. The best approaches for this research are an inductive approach, a case study, GT, and semi-structured interviews.
6. The research design processes should all fit, including philosophy, methodology, strategy, and design.

These assumptions informed the overall trajectory of the research. Although the researcher held these values, she took deliberate steps to maintain objectivity throughout the research process (Saunders, Lewis and Thornhill 2012). This research followed a rigorous approach to data generation and analysis. Regarding data generation, the research complied with Sekaran's (2003) and Cooper and Schindler's (2008) suggestions on maintaining objectivity during interviews. The researcher adhered to the following guidelines:

- Avoiding over-zealous questions: The researcher ensured that the questions were clear and concise during the interview to avoid misunderstanding.
- Avoid pressing respondents for a response: This was important to avoid making the interview experience stressful for the respondents.
- Avoid questions that are demanding of the respondents.
- Maintaining methodological consciousness and ensuring all processes followed in the research have empirical validity by using models to guide the research process, including sampling procedures, theoretical sampling, coding, categorisation, and development of conceptual relations between categories (Charmaz and Thornberg 2020).
- Adopt an open, non-committal, critical, analytic view of the existing literature in ES, decoupling, and tight coupling.
- Undertake training and work closely with mentors who are knowledgeable about the qualitative inquiry approach adopted for the research (Charmaz and Thornberg 2020).

A significant criticism of qualitative research is related to the trustworthiness and credibility of the entire study. According to Cope (2014, p.89), credibility refers to “the truth of the data or the participant views and the interpretation and representation of them by the researcher”. This research validated credibility through triangulation (Cronin-Davis, Butler and Mayers, 2009). ‘Triangulation is using multiple sources to conclude’ (Cope 2014, p.90).

Denzin's 1987 framework of triangulation established three types of triangulations: a) Data triangulation, which includes researching at different times or spaces or people; b) Theory triangulation, such as applying more than one framework or model in the interpretation of data; and c), methodological triangulation, which is using more than one method to gather data (Cronin-Davis, Butler and Mayers 2009, p.335).

- **Data triangulation** of this research was done by comparing the findings of this study with other forms of data, such as policy documents, HESA data, and the scientific literature. The results of this study are congruent with findings held in the existing body of work (Shenton, 2004).
- **Theory triangulation:** This was undertaken by applying more than one theoretical lens (institutional theory and NPT) to conceptualise and theorise ES decoupling and tight coupling. This was important to ensure a comprehensive view of the phenomenon.
- **Methodological triangulation:** the researcher ensured thorough fieldwork through prolonged engagement (Cope 2014). The researcher dedicated adequate time to data collection and understanding the study's context and phenomenon.

In addition, the credibility of this research is established by adopting procedures established in qualitative research (Shenton, 2004). The procedures employed in this research, including the line of questioning and the data analysis methods, are well-known in qualitative research. Another strategy adopted to enhance the credibility of this research is member checking (Cope 2014). Upon completion of data analysis, the researcher communicated the summary of each theme that emerged to the participants. The researcher then requested that they check and provide feedback if the research conclusions accurately interpreted the data.

Also, frequent debriefing between the researcher and her supervisors and peer scrutiny by colleagues and academics during conferences helped challenge the researcher's assumptions and the correctness of the research analysis. This was valuable as it led the researcher to develop more significant explanations and potent arguments for her research design and methods (Shenton, 2004). Finally, credibility was enhanced through detailed reporting strategies undertaken to supply evidence to the reader. This research provides a vivid description of data (quotes) so that readers can hear the participants and substantiate the interpretations depicted in each research theme (Cooney 2010, Cope 2014). This research's methodology and analysis process can be replicated as a detailed audit trail of all activities and procedures is kept.

5.11. Chapter Conclusion

This chapter presents the methodology employed to undertake this research. This thesis is grounded in constructivism ontology and interpretivism epistemology, which are well suited to address the questions of this research. This chapter presented the research questions on decoupling, tight coupling, and barriers to ES tight coupling in institutional culture. While there have been pre-existing studies on ES implementation in higher education campuses, these studies have overlooked how policy-practice and means-ends disconnect occurs, how to effectively tight-couple ES into an institutional culture, and what barriers hinder tight-coupling efforts in NESU. This informed the exploratory, case study and GT approach adopted for the research.

The data collection tool used was a semi-structured interview. Data analysis followed the open, axial, and selective coding process proposed by Corbin and Strauss (2008) to organise the raw data. The constant comparative method was used to analyse and compare the similarities and differences across data sets. This combined approach helped classify data, which aided in developing theory and refining data.

CHAPTER SIX PRESENTATION OF RESEARCH FINDINGS

6.0. INTRODUCTION

This chapter presents the research findings divided into four main sections. The chapter is structured according to the objectives of this study, including 1) Factors of policy-practice decoupling of ES in NESU. 2) Factors of means-ends decoupling of ES in NESU. 3) Tight ES into the culture and the daily routine of NESU's institutional members and 4) barriers hindering efforts to tight-couple ES into the culture of NESU.

6.1. FACTORS OF DECOUPLING BETWEEN POLICY AND PRACTICE OF ENVIRONMENTAL SUSTAINABILITY IN NESU

6.1.1. Causal Indeterminacy-Bounded Rationality

This research confirms causal indeterminacy (bounded rationality) as one factor which furthers policy-practice decoupling of ES in NESU. Respondents from both universities shared similar experiences, which suggests the existence of bounded rationality, such as limited information-processing capabilities around ES matters. Specifically, they confirmed bounded rationality in energy, waste, water, and information management. For example, some respondents reported difficulties obtaining ES data for research purposes (R1, R20, R5 and R8).

“Several times I tried to err to get information, you know, about sustainability research, err funding, you know, from the climate change fund given to university and if I can be part of the team, but I heard nothing back, so I decided to stop” (R1).

“I used to be very much interested in ES research, especially around water management, but those people who circulate information about research funding bids do not include anything about sustainability research. In general, it is always about oil and gas research, so I have no choice but to change research direction although in my research I always will show how it links to sustainability goals” (R8)

“There was a time I was planning to research it [ES], and I asked for data, and they could not provide the data that I requested for” (R20).

Also, bounded rationality was interpreted by some respondents as the lack of data about the university ES performance, such as the amount of energy savings in kilowatts, water savings, etc. For other respondents, bounded rationality is fostered due to issues with ease of accessing ES information.

“...the same goes for our performance data; there is no historical data or information about our campus consumptions like our energy or water usage data” (R8).

“Err, there is very poor level of information out there for people to sign up for environmental schemes” (R9).

“If I want to be sincere, they should make it more prominent on the University’s website because, if you are not interested in the sustainability approach of this university, there is no way you will find information on it. So, you have to dig deep and search every page before finding the information you need. So, if they make it prominent, make it one of their cornerstones [...] make it obvious on the webpage any information on ES (R13).

Numerous respondents also reported a Lack of communication (for example, R4, R7, R8, R10, R11, R13, R16, R17, R18, R19, R22, and R23). For these respondents, lack of communication meant a lack of instructions or directives advising on how to behave sustainably on campus. They claimed that people had no actual knowledge of what was going on in the name of ES, and as a result, it is uncertain how they could support their university in achieving its ES goals. Nonetheless, these respondents confirmed that they observed some ES activities around the university. Still, they insisted that their university had no explicit open communications informing them of what was happening.

“I mean no communication whatsoever. I know some initiatives are supposed to be going around the university, but beyond this, I don’t know the extent these things have gone or how myself or my team can come in to help; if you don’t communicate on these things, how then can you blame people for not participating you see what I mean so for me the university deliberately omit to communicate what they are doing for whatever reason. I think people need to be more informed about what is going on” (R8).

“There are no instructions available to people on what they need to be doing exactly or how they ought to behave responsibly while on campus, so I won’t say that the university schemes are effective because I don’t know much about anything really” (R16).

“There is a lot that forms part of that ES agenda, but it’s not championed, so I think we need to communicate more” (R11).

“So, we don’t necessarily evangelise about what and why we are doing it [ES] if you know what I mean, so there is a lack of communication, or I should say transparency on what we do on environmental issues” (R22).

Another point confirmed in this investigation is that bounded rationality is fostered through selective perception. Selective perception refers to issues of understanding the operation of variables, such as

problems resulting from misinformation. This inquiry confirmed that these universities circulated misinformation about ES, especially around waste management programmes. Some respondents shared similar accounts suggesting that institutional members' rationality of how to undertake proper recycling is bounded due to wrong labelling of bins and lack of accurate information informing the correct way of separating generated waste.

“I am doing research on waste management approaches at this university. I have conducted a kind of site observation, I have visited every building in this university, I have looked at the facilities we have, it’s the same thing in each building, you will discover that bins that are there are wrongly labelled, so bins are there, there are wrongly positioned, bins are there, and you will see a different poster on top of that bin something that is not relevant to waste management, something that is not relevant to sustainability rather than putting a poster that is not relevant to what is going on underneath, they should put signage that is informing people that okay, we have a bin here this is the kind of waste that should be going in there if you don’t inform people correctly, you’ll put them off from undertaking these actions” (R1).

“You know, all those mislabelling are the little things that the university should look into; it is frustrating and annoying even for people like me who take these things seriously, and that is why I will say that they [the university] are not doing recycling because recycling is more than putting things in the bin we are preparing our materials for recycling because, recycling is a technical, chemical and mechanical process “...” and we are at the bottom of the recycling continuum whereby we are to prepare these materials for recycling correctly” (R5).

Furthermore, this research confirms that NESU furthered bounded rationality by displaying inconsistencies in their implemented practices and by sharing weak versions of activities on ES. For example, R5, R6, R9, R12 and R14 expressed this reality, highlighting specific areas where they observed ES inconsistencies occurring. This includes the disconnect between the commercial activities of the university and ES principles. These disconnects, respondents claim, have resulted in a distorted understanding of the university policy on ES.

“There are these inconsistencies and disconnects which make people not see those necessary connections, so this lack of direct connect or link to say SDG’s or climate change stops the behavioural influence from happening [...], every facet of the university needs to demonstrate a linear connection to ES for example where the coffee shop attendant at the university can say you know this cup you are using is recyclable and the lid is not [...] or even that they use the chalkboard for menu rather paper menu is because it’s more sustainable and so on I mean people need to see and hear of these connections every day for it to register” (R9).

“ES seems to be an afterthought rather than the driving business strategy in the sense that we do poorly in what I consider a really basic low-level fruit, which is recycling and not a lot of recycling per se, very, very limited amount of recycling. There are no concrete moves to connect environmental initiatives with social initiatives. For example, we have recycling bins, but we're still using the straws and plastic cups ...” We have a ‘chicken shack’ that serves foods that will not be considered to be, you know, improving the wellbeing of students; there’s a disconnect between the commercial activities of the university and what is considered ES principles....a total disconnect which has led to a distorted understanding of what the university policy is really on ES this is why the institution is not highly ranked for its management systems, it’s a fact that this university is not highly respected in terms of ES” (R6).

“Those people working in the commercial area don’t seem to have a clue about the university policy on waste management. Every time I go there, I see more packaging and err more food, which I am sure will go to waste at the end of the day” (R15).

“We have only one water fountain in this building, and for two semesters straight, that fountain has been and still is out of order; you see this at the entrance there. This is what I mean when I say we condole practices that contradict what we preach. Our sustainability department is faithful, I will say, in giving away their branded water bottles, but the water fountain does not dispense water to allow people to use these refillable bottles; tell me, are they expecting people to drink off the toilet taps” (R14).

It is worth noting that respondents did acknowledge the existence of some good ES initiatives. However, how they spoke of this suggests these practices are still upcoming or work-in-progress. In other words, there are weak versions of ES practices with a vague or subtle connection to policy. Respondents used qualifying adjectives such as.

“Well, I suppose there are some good energy-saving buildings” (R1).

“We have managed to maintain things like car-sharing scheme” (R12).

“I think we do some stuff around transportation like bus-pass discount” (R7).

“I still think though we can single-out solar-energy projects with pockets of excellence” (R6).

“Just a series of things we do around waste management in terms of recycling could be more though” (R8).

“The few we do around biodiversity, like maintaining the natural environment, is quite positive” (R9).

6.1.2. Fragmentation of External Environment

This research confirms that policy-practice decoupling of ES in NESU is furthered through the fragmentation of the external environment. Fragmentation of the external environment refers to the absence of external sanctions to hold the university culpable for poorly complying with ES principles. Some respondents (e.g., R10, R1, and R20) of this research identified the lack of pressure from internal

and external parties demanding accountability from the university, which encouraged the trivialising treatment of ES in their institution. Respondents expressed that the lack of pressure from external sustainability watch organisations (e.g. Environmental Association of Universities and Colleges and People & Planet) and student bodies (e.g. student unions and alum networks) demanding more accountability from their universities contributed to policy-practice decoupling of ES. R10 make this point strongly:

“Look at our clients, and I mean students and even our graduates like the alumina; they are not intrinsically motivated for sustainability. I am not sure if they haven’t realised this is a big problem facing their future, you know, the university playing a part in polluting their environment because if they have realised this, they ought to be pursuing accountability, you know, posing more questions exposing these problems and forcing the university to make big cultural changes and I think the university take advantage this lack of pressure” (R10).

Furthermore, beyond the lack of pressure, NESU further decoupled by actively avoiding public scrutiny. They maintain a low profile, disengaging with green rankings and any ES associations that can assess or evaluate their performance. One respondent believes her university disengages from green rankings under the guise that they do not trust the metrics used by ranking bodies to determine the ES performance of universities. Quotes from R1, R20, R16 and R10 also back this finding’.

“You know, what I think the university did is try to disassociate itself from all those sustainability affiliations; this way, err, those bodies cannot come and check on them, and they simply get away with being environmentally unsustainable” (R1).

“One of our top colleagues here, err, published a paper about green league tables where he critiqued these sorts of ES rankings. He made this convincing argument by questioning the metrics used for selecting winning from losing universities. I think the university has kind of keyed into this interpretation and using this as an excuse not to do anything seriously” (R20).”

“There’s an umbrella Association “...” for ES that the university can become part of, but I don’t think we’ve signed up to that yet, this says in the whole, keep out to these agencies, you know, what doesn’t get checked, don’t get sanctioned, one way right the university protects itself, I know being signatory does not equate to adoption in reality but it is a step towards that direction” (R16).

Also, NESU is not aligning itself with best practices or seeking alignment with espoused standards for ES set out by other universities with leadership in ES. They do this despite being aware that not seeking

to align with sector counterparts will lead to stakeholders lacking trust in the level of organisational commitment to ES and, therefore, actively disengaging with any coupling efforts. For example, R3 emphasised this point strongly.

“We are not making an effort to align ourselves just now with what the rest of the sector are doing, no efforts as it is that we are benchmarking what others in the industry are doing...” (R3)

“We don’t even come close to peers in the sector, not nearly. I think this university should consider positioning itself with the rest. They will need to create a niche or, at the very least, try mimicking, or, I should say, learning from what other best practice universities so we’re par with them...when people begin to see that we are becoming the same or similar to others in our practice of ES then I don’t see why complying with the policy will be an issue as colleagues will come to see the need to support things more seriously since we are working towards building a reputation out there with the rest” (R18).

The evidence shows that NESU opts to remain silent and not expose itself to external scrutiny since it is not fully adopting or living up to its policy commitments to ES.

6.1.3. Internal Fragmentation

This research found internal fragmentation to be another factor furthering the disconnect between the policy and practice of ES in NESU. Internal fragmentation refers to ways a university exempts or deprives its internal structural arrangements or systems of supporting or backing ES. Respondents revealed that their university fosters internal fragmentation through a lack of leadership/senior management support, inadequate strategies/policy, poor practice implementations, neglect of employee involvement and engagement, and centralisation.

6.1.3.1. Lack of Leadership/Senior Management Commitment

This research found that the lack of leadership or senior management support for ES in NESU furthered policy-practice decoupling. Respondents unanimously expressed the lack of someone in a leadership position to give strategic direction and act as a role model for ES in their institution. They claimed that the absence of leadership commitment resulted in internal fragmentation because staff members failed to see ES as one of their organisation’s strategic imperatives and were not motivated to act on it.

“One of the things we’ve had as a challenge for a while is not having a senior leader who has ES as at least one of the things that they are responsible for” (R2).

“Not all of the universities in the sector will be able to point to a vice-principal or somebody at that level who is the kind of a senior management champion for sustainability we haven’t been able to get someone consistently in that role” (R14).

“It’s not a good signal; you know senior management is not perceived as driving this [ES]” (R18).

“When you look at what happens in other agendas such as internationalisation, or equality and diversity issues, or you know the bread and butter for universities in terms of research agendas, there is always somebody who is championing those but not for ES, so, I think, the lack of somebody in that kind of leadership role has kind of held us back” (R21).

6.1.3.2. Inadequate Strategy/Policy

The research data revealed that NESU has deficient ES policy/strategy provisions. For example, R2, R3, R11, R19, R20, and R21 reported that their university had inadequate policy documents for ES. They confirmed their university's ES policy document as too wordy for clarity (R2) or not comprehensive enough (R3). Some respondents outright said they were unaware that their university had any policy on ES (R20 and R21).

“I will give you a copy of our sustainability and social responsibility strategy; it is very wordy. It is the first one we’ve had. It is quite complex to go through and understand; hopefully, the next one will be less wordy” (R2).

“Our policy, I will argue it’s not comprehensive enough. I think that the policy is there to tick a box. I don’t think anybody is following the recommendation inside that policy. When it comes to waste management policy, as a university, we don’t have a separate policy for waste management [...] when it comes to energy use and water use, we should have different policies because these are different behaviours that affect people differently. You can see that energy and water affect everybody in the university, but waste does not affect everybody in the university. There will be some people in this university that are not generating any waste, so we should have a set of approaches for different behaviour to achieve the level we want to be sustainability-wise” (R11).

“I’m not aware of these policies because they are not projected to be important” (R20).

“I can’t remember any policy or strategy stuff, and I can’t remember if it’s in there; if it is, it didn’t stick in my brain” (R21).

Also, it was found that NESU management deliberately chose to keep their ES policy vague. One respondent believes that her university leadership decided to stay with the ambiguous policy to avoid criticisms when the strategy becomes unsuccessful.

“what the university has done is publish a very complex, vague, voluminous policy document...the current narrative is that they have left this open to interpretation so staff can be creative in their implementation of this policy...but I think they reduce the clarity of this document and increased ambiguity so they can get away from being criticised if the strategy is unsuccessful since the policy is open to various interpretations” (R19).

6.1.3.3. Poor practice implementation

The respondents of this research emphasised poor ES practice implementation as another internal factor that furthers the decoupling between ES policy and practice. For example, R2, R3, R4, R5, and R7 identified this factor. A representative quote from R4 and R2 best illustrates this finding.

“I am less involved in the operational end, day to day of what we are doing in terms of energy management or waste management; err, what I do is mostly the administrative stuff around sourcing external funding and such, and we are just a tiny team we don’t have the latitude to walk around campus daily to see how you know the practical things are getting on like err if the bins are tagged correctly....colleagues in estates I think are supposed to do this...it is a problem the way I see it our team being the sustainability dept need to err oversee things like undertaking random checks every day to ensure that things are going as it is supposed to you know, so everyone can see that at least the few things going on are done correctly ” (R4).

“I have been a policy adviser for ten years, ten years this week, but only a portion of that time has been on sustainability issues” (R2).

Also, some respondents (e.g., R12, R13, R14, R18, R15 and R23) exposed a lack of concrete implementation structure informing coordinated integration of ES across their organisation. For these respondents, university management has failed to translate policy into concrete, measurable operational objectives and could not coordinate tasks required to implement their policy on ES. They claim it is unclear what processes or activities employees can follow to achieve the policy set out on ES. For example, representative quotes below show respondents’ perspectives on this.

“There is no structure as it were in which we are saying to everyone or asking everyone what they are doing in terms of ES” (R14).

“This university has no clear structure like a standard operating procedure to guide people in participating in ES activities” (R18)

Furthermore, while acknowledging the lack of implementation structure, some respondents (e.g. R12, R15 and R2) spoke explicitly about the absence of guidance for embedding ES into routine activities. These respondents asserted that without clear, specific, and measurable tasks, employees will be unaware of their responsibilities, objectives they are meant to attain and what they are to do to embed policy into daily work responsibilities. Representative quotes below illustrate this view:

“We have no implementation plan, and I think that it has left things open to various interpretations; pretty much, it is at the discretion of employees, and I mean those who care enough to think about sustainability to figure out how to incorporate it into their work of course when there is no clear guidance for people to follow surely things will fail” (R12).

“I mean, we have no structure to guide the implementation of sustainability at work. We haven’t quite got there yet. It might be that people are not doing anything about sustainability, but it will be nice to ask them the question if they are, but since there is not the structure, we are not able to do things in a coherent way” (R2).

It is worth noting that, although they admitted to a lack of structure for implementing ES, some respondents shared their views on why they thought their university failed to provide the needed structure. For example, R5 commented saying,

“I believe maybe in this issue [having no structure] we will be in a similar position to others [universities] within this region”.

R2 shared the view that:

“I suspect the since the university does not take it [ES] seriously so it’s practically a waste of time providing structure since no one will follow it...it’s like why to bother”.

6.1.3.4. Neglect of Employee Involvement and Engagement

This investigation found that neglecting the aspect of employee involvement and engagement enhances internal fragmentation, which fosters policy-practice decoupling of ES in NESU. Respondents (e.g. R3, R11, R16 and R23) expressed the view that since the inception of ES, their university staff members have not been involved, carried along or engaged in the decision-making process, which has to do with

this practice. They claimed that management lacks commitment to improve engagement levels and continues to overlook employees' insights and contributions, vital to enhancing ES implementations.

As a result, many employees are actively disengaging and less enthusiastic about committing to adopting ES into their everyday routine work. Respondents who expressed this view were consistent in their use of language. For example, words like “*doing less of engaging people (R3)*”, “*not doing enough to gain the participation of employees (R11)*” etc. are prevalent throughout the

“We only pay serious attention and doing those things that will help us not gain bad press or bad reputation or attract fines. What matters, like engaging or convincing people to take these things seriously, we sweep under the rug. As long as we keep doing this, I mean that divide will remain because people will not realise really how we have actioned on our policy claims” (R2).

“The university is not doing enough internally to gain the participation of those individuals [staff] whose actions are required to practice these sorts of activities” (R16).

“Not engaging people means not enacting policies; I mean, only people you engage will go ahead to adopt these things into practice, so when we talk about that policy practice divide, this is one reason that happens” (R23).

6.1.3.5. Centralisation

This research uncovered that NESU fosters internal fragmentation of ES through centralisation. Respondents of this research (e.g. R21, R16, and R6) believe their university subverts ES from becoming embedded into all departments because they relinquished related responsibilities, communication, and leadership to one department. For instance, the estate department and central services were solely responsible for both universities' ES programs. Yet, these departments were located in buildings away from other departments. These respondents believe that the location and the exclusive way ES has been designated to one university unit have resulted in different functional areas and departments being isolated from efforts around this agenda.

Respondents used similar language when sharing their views of the centralised nature of ES with one department. For example, R21 said, “*They are [ES] kind of recorded and pushed on centrally.*” R16

phrased it as, “I think the people in charge are from central services.” R9 said, “Everything comes from the central department. I mean those in charge of estates, our so-called sustainability department.”

“So, everything comes from central services, all sort of decisions, communications and directives come from there, and we sporadically get an email from them instructing us to turn off computers or switch off lights, and I tell you, we get more communication from the IT department about turning off computers than them, but I think it’s because of the software update that happens from time to time (R16).”

“The central department is in charge of everything to do with sustainability, but I believe this is a very important agenda that deserves every department's input. I would like to know what I should be responsible for in my office that I share with colleagues and what my department is responsible for instead of trusting the central department to do everything” (R6).

For some respondents (e.g. R18, R22 and R25), the consequence of leaving ES solely as the responsibility of one department has resulted in the isolation of other departments and arms of the university. They noted that other departments remain unaware of what is happening around ES due to being isolated, so they do not support any tight coupling efforts of the university. The quotes below represent views in this area.

“This university needs to devolve from centralising everything to central services; you know ES should be everyone’s concern; every department, unit, and groups need to be involved in bringing the university to a sustainable path” (R18).

“We need a sort of the KPIs and action plans that draw in a lot of other sections of the university [...] because our approach of pushing everything on centrally is one reason we are not getting far with things” (R22).

6.1.4. Task Compartmentalisation

An emerging theme from this investigation is that task compartmentalisation is a way to further the disconnect between ES policy and practice. Some respondents, for example, R2, R4 and R22 believed that task compartmentalisation is where a university divides ES tasks based on consequences. Greater attention is given to the administrative side of ES because ignoring it can bring about serious negative consequences. Reflecting on their role working in central services (sustainability department), these respondents shared the following views,

“on this job, we have the operational side and sustainability side of things; on the operational side, my job is to ensure that the university is maintaining communication with those it needs to, you know, like making sure our records with monitoring agencies are update and we are maintaining our global ranking and such whereas on the sustainability side my task consists of the everyday housekeeping like managing our car park, our waste management activities, our commercial area and the rest.... there is this strong division in what I do, and as it is, I focus 90% of my time on the operational side of my job, and my bit of 10% is kind of on the sustainability side” (R22).

“As a policy adviser, my role is to make sure that papers which go to management contain information about the sustainability aspect of whatever project that is planned on campus; I also oversee our relationship with partners on sustainability, so you see, my job is very administrative almost rather than the practical stuff of maintaining our campus...although overseeing those practical things we do around campus is important and I agree but because we are a very small team we’ve opted to give priority to administrative things you know because of the consequences that come with not fulfilling them I mean in terms of negative press...we still do our best to make sure we are not completely neglecting the practical things we do just that we don’t do enough of this at the moment” (R2)

As R22 and R2 noted, their job is portioned into administrative and practical tasks. They revealed that they have mainly been fulfilling the administrative part of their roles, such as 1) ensuring that public records about the university are up to date. 2) ensuring management is kept apprised of sustainability implications of planned projects, and 3) Maintaining the university's international rankings on ES. On the other hand, the respondent revealed that the practical side of their job is executed at a low level. In other words, less priority is given to activities that enhance the ES artefacts of the universities. R4 Noted this point succinctly, saying,

“We have partitioned or should say wall off those tasks which address the everyday campus sustainability deliveries that we do. I think it’s this sort of compartmentalisations that we need to address” (R4).

6.1.5. Outsourcing

Outsourcing is another emerging theme that furthers the policy-practice disconnect of ES in NESU. This research investigation uncovered that the ‘outsourcing’ of ES activities without strict control over service providers' implementation quality contributed to policy-practice inconsistencies. For example, it was found in these institutions that waste management activities are outsourced to a third party, and there is lax control over the executions delivered by these service providers. According to respondents,

these contractors deliver their ES services inconsistently. Thus, university contractors' compromised service quality caused deficits, which participants saw as their institution operationalising ES detached from the policy statement.

“Another thing that I have noticed is that the responsibility of waste management not only in this university but is common with most organisations in the UK is that it is outsourced to service providers. For example, contract cleaners are the ones emptying waste bins, they are the ones replacing the bin liners, they are the ones putting the lids on, they are the ones arranging everything, and if you look at these people, their priority is to clean and not to arrange the bins correctly. I believe that’s the main reason why you see these errors, like having a different lid on a different bin, in my view, is the university does not closely monitor its contractors to ensure they are delivering its service optimally” (R25).

Another respondent spoke of subcontracting impacting their university's ability to demonstrate evidence of a tangible outcome from being environmentally sustainable. For example, R1 opined that money could be made from waste resources and such an outcome is needed to convince employees of the benefits of ES activities. This respondent believed that if the university can prove tangible outcomes from waste management, this can be used as evidence to justify to employees the need to take the habit of effective waste sorting more seriously. The university can then use the financial benefits (e.g. money generated) to fund ES research and awareness programs.

“These are the things they [university] can make money from; these resources are not waste. We have a waste contractor who comes and picks these materials and goes, and the university pays these contractors to collect these materials. Why are we giving these people these resources, and even giving them money to take the resources away, and they are going out there to sell these resources and make money for themselves. I wonder why the university does not consider setting up a business-oriented waste management unit. Though I foresee the university may be saying that the money they can generate from such a waste management unit is small, to me, with every little help, we can give jobs to certain people. They deal with separating all these waste streams, and we find a market for them. Like wastepaper, tonnes of wastepaper are being shipped out of this university every week, every month [...] those are the kinds of things that the university can make money from; these monies can be used to promote waste awareness campaigns or even fund ES research and such, but we are given these resources to someone else to make money from it” (R1).

Also, R18 pointed out that outsourcing is conducted without regular interactions between the university and its contractors. As such, this has prevented the university community from noticing the extent of their environmental impacts. For this respondent, the absence of regular interaction with service

providers means the university does not get active data to inform itself of the actual effects they create to know areas to focus change initiatives. She is quoted saying,

“For example, the university can try to learn more from its service providers about the amount of waste it is generating and how much of this waste ends up in landfills or goes on to be recycled. The same goes for everything, like electricity providers, water providers, suppliers of food, paper, and material. This information offers opportunities for us to know where we can direct our efforts. I know this is a stretch, but I also think the university can draw its contractors closer to offer more student learning opportunities, you know we can invite these people in to chat with the students about the realities of ES issues, like how they deal with processing material waste, water waste etcetera” (R18).

6.2. FACTORS OF MEANS-ENDS DECOUPLING OF ENVIRONMENTAL SUSTAINABILITY IN NESU

6.2.1. Goal Ambiguity

This research found evidence of means-ends decoupling of ES in NESU. The evidence suggests that disconnect exists where intended ends are not achieved because the implementation of practice compartmentalises from core goals and because an unclear relationship exists between the ends management routines intend to serve and the means they incorporate to do so. For example, R13, R24 and R11 made the point that in their university, intended outcomes for ES are still to be realised:

“The university cafeteria operates as usual’ and ‘colleagues print every single thing as they always do; honestly, nothing has changed since my eight years here; if this university is serious about ES as it says on its policy, then I suppose there should be some difference somehow” (R13).

“When we talk about impacts, I am not sure; without sounding like a broken record, I don’t see anything different since they began promoting ES. I am sure the university is doing its best, but I can say categorically that if they [university] have a goal for ES, then they have failed in it as I am yet to see or feel anything tangible” (R24).

While some academics and non-academic/administrative staff are of the view that their university realises inconsequential impacts (outcomes) for ES, respondents from central services (estates and sustainability department) were more positive with their response, asserting their university is making progress and realising some impacts, though acknowledging these outcomes have been in piecemeal. Two respondents stated:

“You know, working in the sustainability department, I can say that we are making a difference, so now I am not saying that we realised huge outcomes or made a huge difference, but we can evidence some of the impacts we are making, especially in the aspect of cost-saving for the university, we are making a difference trying to save the university money here and there” (R7).

“I will give some credit with what is going on so far, but I mean, there is still a lot more to do. But the university, I mean, can be more ambitious about the sorts of results. Some of these indicators need to go beyond saving costs or meeting the legal requirements of what we do. We still need to create impact, especially around influencing people, you know, their attitude and behaviour to practice some of the things we are promoting” (R1).

This research found that goal ambiguity results in means-ends decoupling of ES in NESU. Goal ambiguity occurs when goals set out for practice are not formulated clearly. Respondents' accounts suggest unclear goals and targets for ES in their universities. Quotes from R5, R10, and R12 underpin this finding.

“There is inherent ambiguity when it comes to ES. I mean, I am not sure what our goals are, but we need to make it clear where we are at the moment and where we want to go. This sort of clarity makes it easier to have targeted plans put in place so we are sure we will be achieving these whatever goals we want” (R5).

“The university needs to sort out their current baseline, you know, for example, establish a baseline for water use, energy use around transportation, and so on. The purpose of this is to have a point of reference; from this, they can now anticipate and set SMART long-term targets, and from this, their yearly and quarterly goals will be set. My point is that without this sort of common-sense approach, it becomes almost absurd to see what purpose there is in the first place to be pursuing these sustainable actions” (R12)

“I don't know what the carbon footprint of this university is, do you? [pause], I don't know what the carbon footprint of this university is, I don't know how much water we use every year, I don't know well how many tons of plastics we send to either recycling or landfill, and these are quite simple indicators likewise key performance indicators are not being disclosed” (R11).

The above responses make the point that where there are no clear goals or targets for ES, it is unclear what resources or plans to put in place for ES. For example, R12 stressed this firmly, insisting that it becomes difficult to establish a purpose to underpin the pursuit of sustainable actions without clear goals.

6.2.2. Culture

This research found that cultural complexities can cause means-ends decoupling of ES. This finding confirms that ‘cultural complexities’ such as multiple and contradictory values, beliefs and or practices can lead to means-ends decoupling. Relating to the norms and values of the university, this research confirms that existing cultural values (means) in these universities do not serve to influence the behaviours of staff for ES (ends). The below representative quote insinuates this point strongly:

“Having KPIs, assessment systems and being a signatory to declarations, all these do not equate to adoption that will result in pro-environmental behaviour of staff [...], a shift is necessary beyond changing those practical things towards less practical intangibles like our norms and values, really what is needed if ES can become integrated is to transform the current culture and our ideals of what we find acceptable as correct and appropriate” (R11).

For some respondents, existing norms within their university hold inconsistencies which hinder ES from taking root in the organisation. For example, R18 claimed that an individualistic culture within his university supports colleagues working independently. For this respondent, this custom counteracts an ideal norm of collectivism required for ES to thrive. According to this respondent, individualism reinforces isolation and independence, and these need to be replaced with an interactional culture that accepts cooperative working, socialisation, and networking.

“The custom here is that of individualism where everyone tries to be more by themselves, keeping to themselves sort of, and I don’t think this is best for driving ES forward; this has to change because we need to work as a collective in a united front, sharing insights and collaborating to learn from each other. What I mean is that the culture here could be more accepting of cooperative working, more social interactions, networking, etcetera” (R18)

Furthermore, the culture of communication transmission adopted for conveying ES messages was also identified as problematic, thus contributing to means-ends decoupling. For some respondents, their institutional approach and the source/sender of communication around ES have been complicated. They reported that a one-way communication style, which flows from the top to the bottom of the university, is adopted. R12 used the language “*people sited in an ivory tower*” to signify persons of higher authority communicating with employees about ES.

“We have a culture where [...] there is this perception here that some people are sited in this ivory tower very rarely involved with staff unless they're doing something negative [laughs]; for example, some people in the university had their wrist slapped a few weeks ago because of printing which turned out to become a huge deal. So, it's all about how bits of the organisation communicate with each other, what information you give to staff, and the way you present the information. It should be about helping staff members join the dots and see that bigger picture” (R12).

“I think the problem you get in almost every organisation is that the theory tells us that most organisations should have one culture and that this culture stems from the top and then it flows down, which is wrong because all organisations are multicultural, you know the business school has its own different culture from the school of engineering or, the school of architecture so it's crucial for those concern to understand the culture in which they are operating because then they know how best to communicate if you just assume that you are castigating information to a monoculture then you are destined to fail” (R19).

Another cultural practice which respondents identified as furthering means-ends decoupling of ES is the ‘orientation of reward’. According to some respondents, the reward culture in their university predominantly focuses on research performance and not behavioural elements such as sustainability. The reward culture needs to expand for two respondents (R20, R24) to capture ES performance indicators. They believe that separating reward (means) from sustainable behaviours (ends) encourages employees to decouple ES from routine work.

“You should check out our career framework model; you see that there is no place where it says anything about rewarding employees for being environmentally sustainable. I tell you, the most I have seen or gotten is those promotional free go-green mugs and pens. These are all good, but I believe the university can take a systemic look at really framing rewards to cover things of sustainability. So, I am not saying you give big rewards like money or promotion; you know other ways of rewarding can be encouraged, like celebrating unsung heroes or extraordinary green behaviours like they will for a research publication. This is one sure way of defining our culture and getting people pumped to unleash their sustainable behaviours, so we have a system of reward. Still, it needs to be reoriented to encourage and reward individuals for being sustainable” (R24).

“Another issue that I see is around the focus of our reward system. I mean, in this school, the focus has been and will always be on research outputs. Even the aspects of education and professional practice don't get that much attention like research does, so how much more is there around things of ES; I say this because I am a lecturer academic, so I don't do so much research and it is very challenging when I go for those performance review meetings to convince them of my output on education and professional citizenship aspects. So, thinking of it sounds almost silly for me to say to my line manager that one of my contributions is towards ES, that I conduct myself in a sustainable manner; yeah, I am sure

they will just look at me and go, she can't be serious you know. So, you see, right there is no sort of reward to encourage people to take these things to heart seriously; expanding the scope of our reward strategy to cover things like ES will be one way to go forward with it" (R20).

6.2.3. Underestimation of Resources

Respondents of this research reported that underestimating resources (means) needed to keep ES going through space and time delayed intended outcomes from being realised for ES. In other words, there has been insufficiency in the means employed to achieve ES. As R2 puts it...

"I will say it's been challenging; as much as we claim to take ES seriously as an agenda, we have not taken it seriously enough to put in enough resources to back it up".

Three sets of resources identified as being underplayed are human, financial, and time resources. Regarding human resources, some respondents disclosed that their university underrated the quality of personnel and capability needed to drive ES effectiveness. For example, according to R1, R8, R10, and R12, the management of ES is shouldered on managers without adequate experience, knowledge, or qualification for the role. According to them, ES requires employing managers with competencies including discipline knowledge, technical skills, and people management skills.

These participants believe that the underestimation of managerial competency required to lead ES strategy has resulted in the university employing managers who lack specialism knowledge (such as a degree in sustainability or environmental management) and people management skills (e.g. negotiation and influencing) to set the direction for ES. The quotes from R1, R10 and R12 stress this point strongly.

"I think the problem with the management of ES is in this university, is that the responsibility of ES is being shouldered on those who have no experience or no qualification in sustainability or environmental management [...], environmental management efforts are championed by estate or facilities department and don't get me wrong, education may not contribute or be a significant factor [...], but I still believe those who will manage ES should have some kind of degree or qualification in sustainability or environmental management. If they don't, how will they sustainably manage people, how will they pass the sustainability information across to the people, how will they initiate ES scheme and project in the university" (R1).

"Sustainability is not obvious in this university because you cannot act beyond your knowledge; you will only act within your knowledge, and it's only what you

know that you will be acting on. Think what this university can do apart from giving the estate department that responsibility is that there should be a member of staff, it might be teaching staff or non-teaching staff, that is educated to a certain level in environmental management who can provide a good leadership or give good direction for ES initiatives in the University” (R8).

“To drive sustainability, we need people with extensive experience in negotiation and influencing, which I think is fundamentally lacking in our sustainability department. Those managers there for sure need real people skills beyond the technical side of things you know they should be more people-oriented about these things like for example being able to openly discuss changes or potential changes to initiatives with staff, not only that, they should be able to positively influence colleagues to make decisions that ultimately benefit the university like working collegially with people and offering more unsolicited assistance to persons interested in ES especially if it has to do with data for research purposes I mean they never do this they should be able to involve people more like inviting colleagues to brainstorm with them during planning meetings and so on, the list I mean is endless but the point is that this lack of people skills is not good yet again I think the university prefers it this way is all I can say” (R12).

Some respondents, for example, R9, R11, R17, R22, and R25, also believed that ES ambassadors (means) are pivotal in creating awareness and engaging the university community in sustainability (outcome). Respondents claimed their university decouples by failing to make provisions for persons to act as ES ambassadors dedicated to regularly championing ES directly to staff.

“If you look around the sectoral places that appear to be doing very well, generally, what they have is a team that can go out and interact with staff members” (R9).

“Getting someone to speak to staff on an ongoing basis, and encourage them to use our facilities, to switch off the light when they are not needed; to cycle rather than take a car; that is, an issue, and it’s an ongoing thing” (R11).

Second, some respondents spoke of the financial means being insufficient for sustaining ES initiatives in the long term. Respondents pointed out that a university serious about committing to ES is responsible for maintaining the long-term operation of implemented schemes by committing financial resources to sustain it till Infinitum. Thus, insufficiency of the means (financial backing) will cause ES initiatives not to endure, causing long-term effectiveness not to be realised. The representative interview quotes below evidence this point.

“We rely on funding bodies to provide us with monies needed to launch new directions for ES, and I am always critical of this, the fact that the university management is not giving us enough financial backing beyond the normal, like

paying a few salaries or purchasing bins and such. We are not being budgeted for as they do for marketing or student recruitment purposes, and this says a lot about whether they want to maintain momentum on things; in the long run, I believe if we have a year-in-year budget that is substantial like other strategic areas, we can expand our reach” (R17).

Finally, some respondents believe that ‘time’ is one crucial resource that has not been effectively given to ES initiatives within the university. They claim this has caused the sustainability team to be unable to expand their reach and invest meaningfully in interacting with staff members. The quotes from R4 and R22 are representative of this finding.

“The obvious one is principally time; if you look around the sectoral places that appear to be doing very well, they dedicate time to these things” (R4).

“We’ve certainly not got the level of time resource to be able to support that kind of scheme at the minute; we have in the past had voluntary environmental champion schemes which were kind of successful at the outset but now require time inputs to keep them going even back then we didn’t quite have sufficient time to put into it” (R22).

These accounts show that NESU underplays the time, human, and financial resources (means) required to sustain ES initiatives. It is vital to make clear that these respondents did not infer an outright absence of these resources; instead, they think that the resources that are in place are insufficient to support the realisation of meaningful outcomes.

6.2.4. Exiguous Technical Infrastructure

This research found that, in the case study, universities fail to realise meaningful outcomes for ES due to exiguous technical infrastructures. Respondents revealed that existing technological infrastructures in their organisation are inadequate or insufficient to support ES activities. It was revealed in these universities that there is a failure to back up ES with technological innovations. Respondents believe a technological approach is needed to facilitate change in human behaviour. Thus, it is perceived that supporting technologies (means) is pivotal to amplifying and boosting employee daily actions on ES (ends). Representative quotes below made this point, providing explicit examples of technological innovations needed to reduce areas of water, waste and energy use.

“Let’s look at energy, for example, we need to invest in technologies to support it, which means we have to install censored lights in every room so that when people leave that room when the room is empty within 3 seconds or there about the light goes off completely..., they are not doing enough to back up what they are saying with technology infrastructures. Another example is green transport; they are saying we should reduce our travel emissions, yet the university has only one electric car charging point, and even that space is always taken as the university parks one of its fleets there almost permanently, it seems. A colleague of mine who owns an electric car shared her frustration with me, saying she always has to go look for them to remove the car so she can charge hers; imagine, come to think of it, I noticed recently she no longer comes to work in her electric car so you see the lack of technology infrastructure to compliment what we are doing is for me one the things within management control which they can easily change. Still, for some reason, it is not happening” (R1).

“When it comes to water use, there are so many technologies that can be used to influence people’s behaviour. We have the censor tap now, so one doesn’t need to switch it on or off any tap; just by putting your hand underneath the tap, water will come out, and by the time you finish, it goes off automatically; the university needs to install these to prevent water waste. Another thing is hand dryers. Though many people are saying that they are energy efficient to the best of my knowledge, I don’t know how efficient they are energy-wise, though the manufacturers claim that they are in energy consumption. I think the University should install some of them in our restrooms instead of the paper towels we have now” (R21).

6.2.5. Accidental Decoupling

This research identified an emerging factor of means-ends decoupling, ‘accidental decoupling’. This factor adds a fascinating insight into decoupling because it reveals that factors outside the control of a university can force means-ends decoupling to occur. This research inquiry learnt from some respondents that circumstances beyond the control of their university contributed to ES decoupling. It was reported that the unexpected ‘demise of the university sustainability manager’ created a situation where some ES projects and initiatives were stopped entirely. This unanticipated loss was said to have distressed colleagues in the sustainability department as they opted to put their ES projects on hold for a time.

“Err, an unfortunate event, you know, we lost one of our colleagues, the sustainability manager here. I think this took a toll on things” (R3).

“Hmmm, the demise of our sustainability manager had a knock-on effect on the department. It has taken a while now, but his department felt this loss, but I guess that things are taking slow to pick up, so sad” (R22).

“After his death [sustainability manager], things were left for a while because he was really into things; I am guessing it will be difficult to fill his shoes, you know” (R6).

This finding provides evidence that unexpected events can foster means-ends decoupling. For example, as noted by R6, the death of the sustainability manager (means) resulted in delays, implying that the temporary absence of departmental leadership to take on the stewardship responsibility resulted in delays, which caused significant practice gaps observed by institutional members.

6.3. TIGHT COUPLING ENVIRONMENTAL SUSTAINABILITY INTO THE CULTURE AND THE DAILY ROUTINE OF INSTITUTIONAL MEMBERS IN NESU

6.3.1. Coherence

This research found evidence that developing coherence around ES will help tighten it into the culture of NESU. Respondents offered suggestions on how coherence for ES in their context can be developed, including communal specification, differentiation, and individual specification.

6.3.1.1. Communal Specification

Communal specification allows staff to build a shared understanding of ES's aims and potential benefits. Some respondents suggested building a shared understanding of the benefits of ES by enhancing communication and information around the practice, altering current understanding issues, and addressing the poor information-processing capability and selective perceptions held about the operation of ES practices. R3, R2, R12, and R4 opined that enhancing messages and communications will help employees make sense of the operation of this practice. These respondents suggested communication messages should be to ES terminologies such as ‘climate change mitigation,’ ‘environmental impacts,’ ‘regeneration of the planet’, ‘opportunities for future generations and ‘caring for present generations.

“Messages we often get about key management decisions should always include a few words about how maybe such decision furthers our sustainability agenda. For example, we had very recently gotten a circular from our dean saying our faculty buildings will close much earlier than normal [...] now this message was sent out. Of course, many people had issues with it because this communication was sent without any real explanation for why management chose to go down this path. I, for one, think maybe this message would have gone down better if they had included some logic to go with their message, like, among other things, there is an

environmental reason for their decision. Hence, people need to see these connections made through circulated communications” (R7).

“To answer your question correctly, it will all make sense if we link to the elements of climate change, adaptation, and mitigation. We need to give clear information and communication about what we do, the impact that we are having on the environment and showing that the changes we are making are consistent with those values being projected for ES” (R12).

R3 agrees with R7 and R12.

“For me, making that deep-rooted change of embedding ES to become integrated into our culture will entail revisiting our approach to communication and control of information; the narratives we give need to align or be in tune with environmental principles so that there’s a coherent understanding which makes sense” (R3).

R1, while emphasising communication, spoke of communication in terms of the channels used to convey information on ES. He stressed blending and using multiple communication platforms simultaneously when conveying ES communications.

“I am sure the message is there, but I don’t, or I should say people don’t see it enough. Honestly, unless you are looking purposely, you will most likely miss it. So, for me, while I will say there should be more communication on this, I also suggest they review the channels or platforms used to convey these messages. If you ask me, they should use them all. I mean all our communication platforms. As you know, the big screens around campus, our internet portal or website, err staff blog, faculty Facebook, Instagram, Pinterest accounts, etcetera, this agenda is important enough to be in people’s faces all the time, especially as they log on to our platforms” (R1).

Other respondents pointed out that communal understanding in their university requires developing a clear set of values to inspire employees’ sense of motivation and commitment, for example. R20 believes her university needs to reconsider its current values and refine them so that the university’s beliefs about ES are well established.

“Values need to be formulated clearly and concisely articulated so that everyone is reading from the same sheet. For instance, our central services department that is responsible for ES should work with employees and leadership to come with five solid values that everyone can recognise and relate to, so there is this sort of reference that creates a unified understanding” (R20).

In the views of R2, R3, R11, and R21, a complete policy review will aid ES tight coupling into the culture at their university. For these respondents, policy and strategy statements are essential for enhancing understanding because they communicate to employees what strategies their university sets

to adopt in achieving its ES goals. However, they believe the university's current strategy document needed revising to be more concise (R2), comprehensive and transparent goals or targets (R11).

“Starting with our policy, we need to revise it, so it is less wordy. I believe our policy statement is the first and foremost way of communicating the intentions we have ES to everyone, and when it is too long as a book like the way it is now, then no one bothers to look at it” (R2)

“As I said, our policy on ES particularly is not comprehensive; we need to communicate separate policies for the different areas we want to undertake, like different policies for energy, waste, water, transport, biodiversity and so on, and the policy needs to be actionable with clear targets of what we want everyone to work towards so that culture change for me begins with getting that physical, tangible aspect of policy right” (R11).

R14 expressed that having explicit goals will help enhance employees' understanding of their university's direction on ES and serve as a metric for measuring their performance progress.

“We need the goals of the university to be easier to understand, which will then foster a wider understanding of the sort of direction the university is going with this and not only that, it will help serve as a metric on which to measure performance which again will enable people to get what is going on” (R14)

6.3.1.2. Differentiation

This investigation found that ‘differentiation’ is required to foster the ES tight coupling. Differentiation is about ways a practice differs from other existing practices. R20, R9 and R5 pointed out that embedding ES into the culture will require their university to distinguish how working in environmentally sustainable ways differs from the business-as-usual way of working. For these respondents, making this clear distinction will enable employees to see, own, and bond with the differentiating features of this practice. The accounts suggest ‘quality’ as one factor of differentiation. However, respondents had different opinions about ways quality can be demonstrated. For example, R20 believes quality ensures existing ES practices are free from deficiencies or inconsistencies.

“To change our current culture, I think, it requires really exposing how we do things now that are different from what we did previously. For example, we can demonstrate the quality of what we do. We must apply this coherently, removing all the defects we have at the moment where they are promoting one achievement. On the ground, things are completely different, with so many inconsistencies. Our culture will only change if it all makes sense, showing that high quality will enable everyone to see more obviously the new normal” (R20).

For R5, tight coupling requires conformity to best practices. This includes meeting and exceeding the requirements and standards of ES-certifying organisations and ensuring practices are on par with what other sustainable universities are doing. R9 echoed similar views, demonstrating that high-quality ES practice involves improving employee outcomes, such as considering individual preferences and diversifying the university's ES portfolio. In other words, coherence is developed around ES when employees feel implementations directly benefit them.

“I will suggest they diversify their current portfolio of offerings around sustainability; the current schemes on the ground are very limited and do not cater to or take into consideration the preferences of employees. For example, other than the bike and car-share schemes, I am not aware of anything else they offer... what I am trying to say is that people will see things differently when they feel they can attain preferred outcomes for themselves. For instance, I would be interested if they had a community garden project” (R9).

“You see, changing the culture in an academic institution is very challenging, and one way I think to do this is to prove to colleagues that we are ready and serious to do what is needed; showcasing excellence through best practice is key the way to do this, my opinion is for the university to let people see the distinction in the little things we are doing and progressively catching up to what other universities in the sector are doing and eventually with standards set out by regulatory bodies” (R5).

R11 supports that demonstrating quality entails improving outcomes for the employee; however, they insist this should be done by making ES schemes easy and convenient to access. Also, he believes that a complete rebrand of artefacts used to project ES, including logos, colours, and slogans, is crucial to enhance the image and coherence around existing practice.

“For me, two things should be done to show people that things have changed. First, make access convenient for anyone who wants to become part of any of the promoted schemes because right now, it is like a chore, and no one has the time to follow up. Doing this, I think, will help people realise that, hey, it is not business as usual to have these things there, and they are really easy and convenient to access. Also, the current artefacts being projected, I will say, are mundane. People need to see something new and vibrant. So, our current logo, colours, and slogans all need to go after all. Sustainability should be continuous learning, and to show people that we are learning, they should also see how we reflect it through our artefacts” (R11).

6.3.1.3. Individual Specification

This investigation found that building coherence needs ‘individual specification’ to help staff understand their responsibilities within a practice and better understand how their work changes due to

practice implementation. The comments from R10, R16 and R11 suggest individualised responsibilities are required to help staff better understand how their work contributes to and is affected by ES adoptions.

“People can only adapt themselves to sustainable ways of working if they understand what they should be doing in the first place, so my suggestion will be for the university to personalise some of these responsibilities around ES so that people can see precisely how their work play a part in the bigger picture” (R11).

“Just to add to what I have already said about having performance indicators around ES, I believe we will need to filter them down to individual job descriptions. HR and line managers will need to work together and come up with responsibilities for everyone regardless of department, team or job role, the sort of personal responsibilities that inform staff what they must be doing differently on their job...I believe this sort of clarity will make it binding for colleagues who hopefully will begin to gain a better sense of how their work changes” (R10).

“For me, if not for anything else, for the sake of accountability, I think the university needs to break down and assign tasks to everyone instead of their normal way of dedicating sustainability matters to one department. Everyone should be doing something, no matter how small. If we have this sort of clear responsibilities, it is then easier to hold defaulters accountable. So instead of sending out those pointless generic emails, managers can target and follow up those persons who are doing nothing to support the university ES efforts” (R16).

The data shows that assigning responsibilities, such as who does what and when, is crucial for building understanding around ES. Understanding is gained as employees are assigned tasks or jobs to complete. Also, individual responsibilities aid in better accountability as it becomes easier to measure and control individual progress since managers can quickly identify and follow up with non-compliers. R2 supports this point but claims that assigning individualised ES tasks will ensure the actual implementation of relevant activities so that the university can realise tangible ES.

6.3.2. Cognitive Participation

The primary evidence shows that staff personal engagement and commitment to practice, think through, and organise themselves to undertake ES will facilitate its tight coupling into a culture. The data revealed that activation (ES citizenship Behaviours) and initiation are required to garner staff cognitive participation with ES.

6.3.2.1. Activation- Environmental Sustainability Citizenship Behaviours

This research found that staff exercised ES citizenship behaviours to demonstrate cognitive participation and personal commitment to ES. However, many participants thought their commitment was fuelled solely by their passion and motivation to make a difference in their environment and as a consequence of their university intervention. R1 made this point strongly.

“I think we need to borrow Organ’s approach concerning citizenship behaviour. Organ tried to relate organisational setup to a kind of society whereby people are part of that society as citizens. His mindset was that if these people are enrolled or recruited or initiated as citizens of the organisation, there will be a higher-level commitment to engage in any scheme that the organisation is doing” (R1).

All respondents of this research confirmed undertaking some form of personal, environmental citizenship actions, which they claim they do voluntarily while on campus to show they care about the environment while at work. Table 24 summarises the findings of the research in this area. Some respondents claimed they engaged in personal ES activities to show their university that they could contribute to the environmental agenda. For example, R7 and R3 reported that:

“I do these things on a personal level simply because what is going on at the university level in the name of ES is not clear to me, and so I do my bits because I feel I still have a role to play in getting actions going in the university” (R7).

“So, I guess there is a degree to which there is a balance between your personal-moral ethics of how you even consider these things versus an organisational imperative. My personal choice is to do less of what the organisation is promoting because right now, everything is uncoordinated and very difficult to understand, which is very discouraging. So, I opt to do these green behaviours on my while on campus because that’s me and my practice” (R9).

In total, thirty-five personal-level environmental citizenship behaviours were coded from primary data. The most common citizenship actions reported were related to energy savings, waste management, and supporting the university sustainability advisory group.

Table 24: Summary of findings for es citizenship behaviours of university staff

Respondents	Quotes	Citizenship Action
R1	1. "We have a printer room next door that seats on the light all day, and every time I pass, I switch the lights off."	Energy saving
R2	2. "I am involved in a couple of associations that look at things like clean coastal beaches, the protection of coastal areas, and so on."	Environmental Activism
R3	3. "I try to work electronically wherever possible, 4. I try not to turn on the heating, and I wear a jumper rather than sit there in a T-shirt and complain about being cold. 5. I turn my PC's off, 6. I don't drive to work very often. I use public transport most of the time, but not all of the time. 7. I try not to print too much."	Energy saving Curbing Indoor and outdoor air pollution Prevent deforestation. Sustainable travel
R4	8. "I always have a reusable water flask with me; you know it saves me a few pennies when I go to buy coffee, and it is good for the planet, too."	Waste management
R5	9. "I make sure that when I'm the last person to leave the office, I turn off all the lights". 10. "Presently, I am also engaged with the university 'go green' initiative; basically, I support them with garden allotment. The allotment is partially run by [...] go green in conjunction with Field and Allotment Association". 11. I'm also looking to support the sustainability advisory group here; although it has fallen into disarray, I want to push for it to be reinvigorated in the next couple of weeks."	Energy saving Support the university green association. Support university sustainability advisory group
R6	12. "Our campus is extremely beautiful, so I make a habit of taking pictures all the time for inspiration for my blog".	Branding
R7	13. "I engaged, and I am still engaging in activities within the university to promote environmental management in general. For example, I was part of the university sustainability advisory group when it was still active. I had attended meetings with the waste management sub-group when it was still active."	Part of the University Sustainability Advisory Group
R8	14. "I am actively involved in the car-share programme. I share a car with colleagues on my way home every day."	Car-sharing
R9	15. "You know, I know the university is not excellent with sustainability, but there are a few things that are good and worthy of being titled sustainable; for example, they have maintained the riverside ambience, and I play a part in promoting this. I blog about it, and I have my project students meet me outdoors close to the river; I tell you, those meetings that I hold outdoors are always productive."	Promote a sustainable brand image for the university.
R10	16. "In our office, I make sure during the day that the lights are turned off to encourage colleagues to use natural light as much as possible."	Energy saving
R11	17. "I do my best always to think sustainable; I will always think before I do anything like printing, disposing of waste, buying things from the cafeteria. I do my bit to be environmentally friendly".	Sustainable thinking

R12	18. "I have three in-door plants on my desk; you know it helps to curtail air pollution plus keeps my space beautiful."	Indoor Air pollution prevention Work-space Aesthetics
R13	19. "I live 30mins away from campus, and every single time I choose to cycle to work instead of driving, on good weather days, I just walk down; I know it is good for my health, for the planet and for the community that live close to the university."	Walking and cycling
R14	20. "Before I go home every day, I make sure to shut down my desktop computer instead of logging off, you know, to reduce electricity and air pollution, even if I know it will take a few more minutes to boot up the next day."	Indoor Air- pollution prevention, energy saving
R15	21. "I Carry my mug whenever I need to buy a hot drink". 22. "I also drank from the university fountain located downstairs when it was working. You know, not many people use it, but I do, which is my way of reducing waste for the university."	Reduce plastic waste
R16	23. "I am always very observant and conscious when it comes to printing things out. I have always preferred reading things in printouts, but now I have tried to change that behaviour to save the university money from buying more paper and the planet too, you know, saving trees."	Reduce paper waste
R17	24. "I am always doing my best to help out where I can; once, I was invited to a meeting with the sustainability team here, and not too long after this meeting, I was having a conversation with some students and the issue of ES in the university came up, and I did my best to answer their questions positively."	Answer questions about sustainability in the university positively.
R18	25. "I am always patient to sort out my waste; I am always conscious to place recyclable materials in the right container". 26. "Once, too, I walked into the men's restroom, and I found one of the taps was broken and water gushing out into the sink, and I immediately reported this to estates. You know, till this day, I have wondered if I was the only one who saw that problem and reported it."	Recycling Waste Contribute to water waste reduction.
R19	27. "Well, I have always been instrumental in stimulating my colleagues to act sustainably; twice now during Christmas time, you know, Secret Santa, I bought reusable cups for colleagues, and I see them use this every day, which makes me happy as I know they don't buy hot drinks in disposable cups which contribute to the waste problem we are having"	Stimulating others to act sustainably
R20	28. "I try to whenever I get the opportunity to teach people about ways to become green, especially international students who come here to study and during winter, they begin to accumulate bills, and I offer them, you know, tips on how they can save energy."	Teach others to become green.
R21	29. "I always buy organic food products, you know, when we have those charity fundraising events on campus".	Green purchasing Reduce travel

	30. <i>As well, I also try to engage a lot in using online resources to reduce travel emissions. So, I use Skype and Zoom to interact with students. So, instead of meeting students in places in the city or travelling to conferences, I try to do more online interactions and stuff using social media.</i>	
R22	31. <i>"I work with the people who are interested in policy and do every paper that goes to the university management group; I make sure these documents have a paragraph on it which says what the sustainability impacts of projects are."</i>	<i>Contribute to policy development.</i>
R23	32. <i>"I got a plot from the university, from their community garden project, and it has been good to do this, and I tell colleagues about it".</i> 33. <i>"I helped to organise one of those on-campus food produce events; I managed to sell off some of my harvests as it was too much for me to consume alone."</i>	<i>Take part in the Community Garden project.</i> <i>Participate in organising green events.</i>
R24	34. <i>"So, I am an active member of the sustainability group here, and I take it upon myself to ask colleagues to come along with me to our meetings".</i>	<i>Encourage others to join a green group.</i>
R25	35. <i>"I always opt for electronic instead of printed materials."</i>	<i>Reduce paper waste</i>

Source: The Researcher Generated from Fieldwork Data

For R7, their university can encourage and sustain cognitive participation if it opts to formally recognise and reward the citizenship actions undertaken by staff members on a personal level. This finding indicates that staff volunteerism and personal behaviours can be leveraged formally to enhance cognitive behaviours crucial for culture change.

"So, I know many employees while on campus take actions on a personal level; I know one may say it is not much, but I think the university should take notice of these behaviours and try to reinforce it through maybe reward or recognition or anything at all which will send a signal to encourage continuous re-enactment of this behaviour" (R7).

6.3.2.2. Initiation

The evidence shows that having key participants to help drive forward ES is essential to promote staff cognitive participation. R4, R9, R10, R15, R19 and R25 emphasised the need for quality staffing investment to support the delivery of ES initiatives in their organisation. Unanimously, these respondents stressed the need for more people and teams to be assigned the responsibility of interacting

with staff regularly, claiming that their sustainability department does not have enough personnel acting as ambassadors to pursue the engagement of employees.

“If you look around the sectoral places that appear to be doing very well, what they have is people or a well-staffed team that go out and interact with staff members” (R9).

“Getting someone to speak to staff on an ongoing basis, and encourage them to use our facilities, to switch off the light when they are not needed; to cycle rather than taking a car” (R4).

“So, we need people other than energy managers or sustainability managers to pursue the aspect of staff engagement seriously; as I see it, energy managers are to oversee the activities of the university, you know, like monitoring energy consumption, water use, and so on I suspect that it is beyond their remit to follow up on people, you know, to engage them” (R19).

6.3.3. Collective Action

This research's data found that tight coupling ES into culture will require the collective action of staff members. Specifically, Interactional workability, contextual integration, leadership, and Green Human Resource Management (GHRM) were essential for garnering collective action for ES.

6.3.3.1. Interactional Workability

A key finding to emerge from the data was that opportunities for employees to interact, network, and collaborate on ideas and activities with peers from other sub-units and hierarchical levels will facilitate the advancement of culture change. R7, R2, R16, R17, R21, and R12 claim that interactional works both internally and externally will aid in the tight coupling of ES into the culture of their university. They emphasised inter-departmental cross-communications, collaborations and knowledge exchange and used expressions like “collaboration”, “partner with”, and “working with” to bolster their argument.

“When we have our monthly meetings, we need to invite staff members from other departments, like the library, to come over and give us a talk about any new development that has taken place in the library to accommodate ES. We can also invite HR people dealing with particular issues like environmental safety to come and talk to us, maybe once a month, and give us a little bit more information about what they are doing, how we can also be part of it, and how we can assess what they are doing” (R7).

“Hmmm, I mean, we need that working relationship between academic staff and the sustainability department; this will help both parties gain a better understanding of how best to improve the whole student experience around campus with respect to ES. I mean for example, a good working relationship between these sub-units will help both groups,

academics from a research perspective and managers from a practice perspective, to pull their ideas to make our campus become a true living laboratory where students can learn about our planet, nature and biodiversity” (R2).

“Departments in this university need to make it a habit to interact with each other. They all need to establish those important key relationships that will contribute to teams and individual knowledge [...]. For instance, relationship networks with people who have more knowledge and experience of sustainability, like our centre here, and work with them will help bring people together to do the work needed to make our university ecologically sensitive. I have tried as far as I can to sort of branch out further, working with procurement colleagues, working with curriculum colleagues, err, working with the people who are interested in policy and does every paper for university management” (R16).

Further, some respondents made the point that interactional work needed to go beyond the internal, but also with external bodies like charity organisations and local communities, and hosting of events that will involve external parties, such as ES conferences and inter-university partnerships.

“We are doing some things passively, which can be more active. For example, we work with our local community here on community garden projects. This has been good but has mainly been on the down-low, with a few individuals participating, mainly students. So, we need more engagement from staff members as it will help to signal that we are now getting serious about everything” (R17).

“We need to interact more with external parties, like organising conferences that will bring outside participants. We need to enter project partnerships with renowned universities that have established themselves in ES, at least have a good standing on this, or even join those ES networks. This way, we can begin to build ourselves too to show to everyone, especially staff, that we are keen to get things more serious” (R21).

“Collaboration with charities and other universities can become even bigger than it is now. The university can let us bring them closer to our classroom, to come to share with students what is going in their space, how they are part of the solution to those environmental SDGs” (R12).

R1, R20, R16 and R10 firmly pointed out the need to address the low-ranking profile of the university on ES league tables. They insisted that engaging and involving with external ranking bodies and league tables will help to establish a reputation that will encourage employees to engage more seriously to uphold the image of their organisation.

“I agree that perhaps the metrics used by ES ranking bodies need further review; however, we must come to terms with the reality that whether we like it or not, those universities making the top of the league tables benefit from doing so. So, a good reputation is important not just for student attraction but for boosting internal morale, too. I believe those responsible for ES will become more committed to upholding the university position positively, knowing these associations can come in at any time to confirm what we do. The

same goes for the employee; they will become more inclined to act and support the university” (R20)

“So, they need to engage more with ES assessment bodies and open themselves up for scrutiny; this way, employees will better internalise what the university is doing and will have a reason to support the university knowing there is an image, or I will say reputation that the university is trying to protect” (R1).

6.3.3.2. Contextual Integration

This research found that contextual integration, in terms of resources, enhances ES's continuous production and reproduction. R2, R4, R17, R21, and R22 confirmed that time investment and quality staffing are required to facilitate ES tight coupling in their university.

“Err, so you can't just give it [ES initiatives] a bit of time, like one year and then think that it is sorted. No, we need to have a long-term mentality where we allow enough time to these activities” (R22).

“Really, all we need is more time dedicated to these activities so that it stays on for a while” (R21)

“I will recommend giving more dedication and support for initiatives and seeing things from a long-term rather than short-term perspective. I mean, I think especially when it comes to sustainability, we need to think deeply knowing that whatever we decide to project to staff and students should be what we are will be willing to support permanently” (R17)

For these respondents, their university needs long-term direction and quality time dedicated to ES projects and initiatives because this ensures continuous support to carry these practices into perpetuity.

6.3.3.3. Leadership

This research found that university leadership support is required to garner collective action needed to tight-couple ES into the culture of NESU. Almost all respondents in this research stated explicitly that leadership backing is necessary to promote routine incorporation of ES into employees' everyday work and to enhance tight coupling efforts. For example, R25 is quoted saying,

“It [ES] must be led by senior management, i.e. someone who carries executive authority” (R25).

While discussing the vital role of leadership, some respondents spoke of the leadership attributes or qualities that they believed would foster effective culture change. For example, decisive leadership is crucial for R4, while role-model leadership is needed for R9.

“We need someone who can bring about real change to lead this whole ES drive. This should be someone we can say has a transformation mindset, who is not afraid to decide and make real change” (R4).

“The whole talk about culture for me begins and ends with top leadership support for us to forge ahead with this green university talks. We need people from the decision-making level; you know, the higher-ups can truly become role models for ES. Such a leader must be someone staff look up to and trust, who will prioritise sustainable ways of working above anything else—someone who genuinely and consistently thinks about everything we do and its ecological impact” (R9).

Similarly, R19 called for leadership that challenges assumptions and takes risks. According to this respondent, a leader who is open to ideas from subordinates on ways the university can improve towards a more sustainable path is needed. In addition, R22 claimed that culture change demands leadership that seeks and drives continuous technological advancement.

“It is all about someone who is always seeking new ideas. Somebody who can take risks and challenge the existing norm of behaviour at this university” (R19).

“We need the leadership of someone who continuously seeks to drive technological advancement” (R22).

For other respondents, interpersonal and communicative leadership that can effectively interpret the university ES vision is required. It was explicitly noted that deans and heads of departments were in the best positions to deliver the needed leadership within faculties.

“I mean, it’s all about having the type of leadership with very good communication and interpersonal skills to relate with staff, you know, to help them see the future, where things must change for better, and I mean someone saying to people you know, this is what the university says it wants to achieve for sustainability in the next year or so, precisely this is what our department should be doing. Our HoDs’ should be saying this is what each team ought to be doing, and finally, communication should filter down to individuals setting standards and being precise about what needs doing” (R12).

“Our dean should be acting as the spokesperson articulating the university’s ES vision in a way that is practical, appealing and inspiring to staff” (R10).

6.3.3.4. Green Human Resource Management

This investigation found that support from the human resource department and adaptation of human resource functions and activities supporting environmental initiatives will help increase tight coupling into the culture. For example, R1, R13, R8, R12, R15, and R5 believe HR managers must play a support role in helping to gain the psychological engagement of employees in NESU.

“We need to get those people from HR to support these efforts” (R8)

“HR has a really big role to play to get and influence staff” (R5)

“HR must come into the picture” (R12).

“HR is a significant department that can enrol people to participate in these schemes; they can pass that information across effectively” (R15).

“There is currently no support from our human resource department. I mean, they should be responsible for employees; they need to take the lead and implement those effective interventions that will bring about behavioural change in employees (R13).”

“HR is a significant area or point where any initiative can be passed to staff, the reason being that the first point of contact is the HR department when anybody is coming to the university environment so the HR department can, through this initial contact, begin to communicate the university ES goals” (R1)

Another point made by respondents was that human resource policies, practices, and systems, in particular, should be adapted to reflect ES fully. As one respondent puts it, *“Regardless of the stage of the employee lifecycle, HR can adapt its strategy to get people to act on sustainability” (R21)*. Table 25 contains quotes from respondents suggesting strategies that HR needs to foster sustained culture change for ES. These responses indicate that NESU HR recruitment activities (Job description and contract), induction, training, and reward can be leveraged to drive collective action for ES.

Table 25 Summary of findings on GHRM strategies for ES tight coupling into a culture

Respondents	Quotes	GHRM activities
R4	<i>“HR is a significant point where any initiative can be passed to staff [...] through recruitment; the department can make people aware that we are a university that takes ES seriously. Like the job description we advertise should include ES keywords, and interview questions can include a few questions about working sustainably and so on ”.</i>	Green Recruitment
R7	<i>“To build in ES as part of the ethos of all staff, it is important to build that early on from induction training. You know, when such staff newly joins, and they have not mixed up with older colleagues to learn otherwise”.</i>	Build sustainability into Induction training.
R9	<i>“Induction should have a stronger element about sustainability; I would love to see staff contracts or job descriptions, you know, where it says we take energy management seriously, we take carbon and waste management seriously as well”.</i>	Staff Contracts and job descriptions should emphasise sustainability.
R12	<i>“It doesn’t have to be prescriptive about what people will have to do, but at least recognise some individual and collective responsibility. I would just like it to be sort of signposted more that as an individual, you have to support the university interests in ES.”</i>	Green Job description
R15	<i>“HR has a role when they send documents out to potential candidates who are coming in for an interview; the kind of information they can include can be like how they [applicants] can travel sustainably to the university rather than just this where you park when you come to the university. Again, in terms of when someone receives a letter saying congratulations you’ve got the job, there can be a sort of pre-induction information sheet of how to travel sustainably to get to the university that could be personalised travel plans and things like that”.</i>	Include Sustainability Information in pre-induction information sheets.
R16	<i>“The other bit is HR building awareness and providing training, alright. There is an assumption that everyone should know how to recycle, but not everyone does. Not everything is recyclable, and there’s that confusion. The other bit besides recycling is why we do not generate waste in the first place. This is the reduction side of it, so there’s limited training or education in that perspective, and HR should deliver this training.”</i>	Offer green training
R19	<i>“Sometimes we should get an email from HR on these issues; they should follow up on the central service’s communications and find out whether we understand this stuff. Because we don’t know the people from central services, we delete them when we get their email. So, I think HR should follow up by visiting different schools from time to time, maybe once a month or so when we have faculty meetings as we address various issues there, and HR can come along to speak about environmental issues as well.”</i>	Provide green Communications
R25	<i>HR should make it part of the job description. They must also oversee compliance by insisting line managers ask questions during an employee performance review, so it should be</i>	Conduct Green Performance management.

	<i>recognised as part of the performance evaluative exercise; if not, there will be no real incentive for staff to participate.</i>	
R22	<i>“I think this is the part I said about the perception of HR, and I think there’s a perception that HR just sits in this ivory Tower, very rarely involved with staff unless they’re doing something negative... I think they have to be far more proactive; they are supposed to be business partners. They have to go out into the organisation selling these things to the staff on a day-to-day basis, not on an annual basis. A business partner is just that of a business partner, and that means they have to be immersed in the business, taking the messages and communicating all of that into the business.</i>	<i>Provide green Communication</i>
R17	<i>“So, there should be some way of rewarding good behaviours. HR can work with colleagues to identify individual contributions, keep track of, you know, ES heroes, so to say and reward them, celebrate them, give them some sort of recognition to notch them on.”</i>	<i>Undertake Green Reward management.</i>
R11	<i>I think the job of HR is to create that sort of sensitive environment, that sense of togetherness, if you like, where you know the way you do your job, the way you engage with your organisation directly contributes to an output which is ES. For example, it helps us to recruit students, or it helps us to save money, which saves jobs.</i>	<i>Create a sensitive environment;</i>
R8	<i>“What HR should be doing is taking those SDGs and then operationalising them into performance indicators, which are human performance indicators that could be reasonably tracked and understood by staff members.”</i>	<i>Conduct green Performance management.</i>
R13	<i>“So, I think HR’s job is to bolt all that together and present it to staff, as you know, sort of a holistic offering that is part of its psychological contract”.</i>	<i>Make sustainability part of the psychological contract.</i>

Source: The Researcher Generated from Fieldwork Data

6.3.4. Reflective Monitoring

This investigation found evidence that ‘reflective monitoring’ is pivotal for ES Tight coupling into a culture. Specifically, the data indicates that communal appraisal, individual appraisal, and reconfiguration will further the continuity of tight-coupled practices.

6.3.4.1. Communal Appraisal

This research finding shows that communal appraisal, for example, sharing informal experiences through open formal information channels, can help aid practice routinisation. R1, R14, and R11 believe communal appraisal will enable their university to get ‘reality checks’ on what they are doing well and areas for improvement. Their expressions are as follows:

“Monitoring is key; we should have a central way of really tracking how things are going, whether good or bad. Management needs to know exactly what is going on behind the scenes, especially what is hindering colleagues from being compliant with the schemes and projects on the ground, albeit small. So, I will suggest monitoring the effectiveness of the things we do through the eyes of those who are to execute these things, so getting staff to give their feedback regularly through an organised formal channel is essential” (R14).

“I want to say that sharing ideas is key; I think the university should have an idea or experience-sharing platform where anyone really can share their informal quiriness of what they are doing. I tell you this will, over time, turn out to be a good feedback database where interested parties learn about the failures and successes of certain schemes. Still, of course, this platform, you know, will need to be managed carefully so it does turn into one of those testimonial pages” (R1).

“Formal channels that are open and transparent need to be created to allow us to give honest feedback on some of the issues we are facing; as I said, this needs to be transparent so that we can learn from each other and help each other out” (R11).

Similarly, while emphasising the need for collective evaluation of ES activities from all university stakeholders, R10 suggested that employee environmental satisfaction surveys be used to capture and monitor the performance of ES initiatives.

“I think we could have an employee environmental satisfaction survey specifically designed to monitor and evaluate our activities. This survey could be administered to all stakeholders regularly” (R10).

Also, this fieldwork investigation found that ‘reporting’ enhances the monitoring of ES activities. R10 expresses this opinion about how ES reporting enhances monitoring and evaluation.

“Taking ES reporting seriously is important. What this does is that as well as the university being able to keep people informed about their progress, it will naturally help them also to keep a close eye on things” (R10)

R10 emphasised that disclosing the university's carbon footprint data is necessary to establish baselines and help institutional members understand the data. In his view, employees’ positive evaluation of ES effectiveness in the organisation is subject to their knowledge of their university environmental data.

“Transparent disclosure of our carbon footprint information is crucial here; people need to see the impacts this university is creating in data form; with this, people make evaluations for themselves, and they can see whether or not progress is being made so commitment to the disclosure will mean monitoring is taken seriously” (R3).

6.3.4.2. Individual Appraisal

This fieldwork investigation found that personal reflection can help foster ES tight coupling. Some respondents emphasised that opportunities for “personal reflection” will allow staff to review their actions and understand how ES practice affects work and others around them.

“I think everyone should engage in some sort of deep personal reflection of how they are contributing to a negative impact on the environment; this sort of deep-thinking, I suppose, will help to trigger small changes on an individual level which, if collated, you know, adds up to some, benefits but to do this, of course, the university has to create opportunities which encourage people to reflect for example employee performance appraisals, faculty forums and such can be leveraged to do this ” (R23).

“Opportunity giving to staff to appraise how certain implementations affect or not their work is very important, you know, recently I had the opportunity to apply for my HE academy qualification with our CEL department here and the case-study, you know, the one about reflecting on professional practice I tried to reflect on my pedagogy experiences of including ES in my daily responsibilities including how I teach it in the classroom, and surprisingly after completing that process I am amazed how much challenges I faced and how I managed through all that so this sorts of reflection really opened my eyes, and I think the sustainability department if they like, can go access this document and learn about the reflections staff are providing” (R10).

For R8, her university should establish mandates requiring everyone to submit quarterly reflective reports detailing experiences or contributions to the organisation's ES practice area.

“This university can require everyone to submit a very brief report, perhaps quarterly or yearly, detailing individual experience or even contributions to ES in the university. I believe that sort of thinking process will maybe get people reflecting, although I sense this will be difficult as people will in no time see it as another administrative paperwork to complete” (R9)

6.3.4.3. Reconfiguration

This investigation found that reconfiguring organisational systems is necessary for ES to tighten its coupling into a culture. Respondents were asked how their university could better embed ES into their culture, and R15 suggested close monitoring of ES activities. However, she added that benchmarking and learning from other institutions are crucial to monitoring the university's ability to keep its practice on par with industry best practices. She also believes that by becoming a learning university, her

university can continuously monitor ES trends in its sector and use this information to evaluate internal implementations' efficacy.

“We need to learn more from best practice; we need to ask ourselves critical questions, you know, about how and what the rest of the sector is doing to define themselves; we should be benchmarking and monitoring the trends out there and use this information to our advantage where we can then take some of the clues we get to evaluate the efficacy of the things we are trying to do ” (R15).

Also, some respondents noted that ‘restructuring’, such as reconfiguring roles and processes, will ensure that ES practices are tightly coupled. For example, R3, R4, and R22 pointed out that relocating the sustainability departments' sites and modifying existing practices are essential to improving and enhancing the flow of ES information around the university.

“For me, I think we need to reorganise the structure of departments in this university. We must stop treating the sustainability department as separate from other departments. You see, the sustainability department is situated in the central services building away from the academic department, and it worries me, you know. It is time that sustainability colleagues share the same room, I mean the office, with colleagues from other departments; this way, we can rub off on each other, and it will be easier for them to pass on ideas, information and update and interact more about what the university is doing” (R4).

R22 also stated that practice discrepancies observed around the university, especially in the commercial hub area, should be rectified. R22 claimed site evaluation should be undertaken regularly to address emerging issues that disconnect from correct or appropriate practices. For example, this respondent spoke about tackling waste issues by removing general waste bins from communal areas to discourage waste dumping, boost waste sorting, and implement waste technology solutions.

“Reconcile all these inconsistencies we see is what I will suggest. If we don't want people generating landfill waste, then we insist all the shops on-campus use only recyclables. If we want people to separate their waste correctly, then remove all general waste bins that are easy to access. These days, we have waste collection solutions like reverse automated waste vending machines where people get refunds or rewards like discount vouchers or points for shopping or free coffee, lunch and such when they dispose of their waste through the machine; the university can install one of these on-campus so everyone including the local community around here can use it...so ensuring that the physical contradictions we see or observe around campus regularly are addressed they university will need to ensure that practice contradictions are eliminated” (R22).

6.4. BARRIERS HINDERING EFFORTS TO TIGHT-COUPLE ENVIRONMENTAL SUSTAINABILITY INTO THE CULTURE OF NESU

6.4.1. Individual/psychological Barriers

The result of this inquiry uncovers that NESU will encounter behavioural challenges when seeking more significant ES tight coupling into culture. The primary investigations found behavioural constraints such as lack of interest, lack of capability, lack of institutional reputation for ES and busy schedule.

6.4.1.1. Staff Lack of Interest in Environmental Sustainability

This research shows that employee lack of interest is one barrier that will subvert any tight coupling effort for ES. According to R4, R6, R9 and R25, some employees lack interest in ES and do not involve themselves in adopting sustainable working methods while on campus. Specifically, R4 and R25 claim they have witnessed some colleagues display a lack of interest in ES when they fail to execute simple 'housekeeping' activities such as turning off lights, printing less, and discarding old working methods.

“Some staff at the university are not engaging in those simple actions that make a difference, like printing less or turning off lights or paying attention when sorting waste. So, to me, it comes down to a lack of interest. Some colleagues here are just not interested in these things, which will be a big challenge for the university to overcome when they become ready to turn things around” (R25).

“You will find that some older colleagues who have been with the university for 9, 10 years now are not participating; they are used to old ways of working and simply are not interested in some of these efforts, which most likely will disrupt their normal way” (R6).

“I mean, our housekeeping is terrible; we have a printer room next door that seats on the light all day and every time I pass, I switch the lights off, but err, there are very few people flipping the lights off, and I think that is because they don't care” (R4).

While expressing their views on the lack of employee interest, some respondents shared their opinions on why their colleagues are uninterested in participating in ES activities. For some, this is due to their university's lack of a reputation for ES. For example, R3, R7 and R11 believe that lack of interest stems from a perception held by employees that the ES agenda is not taken seriously since their university has no real interaction with sustainability bodies or groups (e.g. green rankings, signatory to sustainability

treaties etc.) and no reputation at stake. According to respondents, this lack of institutional reputation fuels employees' disinterest in being green. Also, they perceive their university as having no reputation or prestige, which indicates an unwillingness to pursue environmental imperatives.

“We lack any real identity or reputation in ES, which I think fuels the lack of interest we see in this practice. Not creating a reputation sends the message that we are reluctant to do this. The university needs to interact with external bodies more like the people and planet and others; this way, people will see that we have something at stake to lose if we do not take things seriously” (R11).

“We need to critically rethink as an institution who we are in the debate on sustainability in general, what we can do to drive this agenda, and most importantly, where we want to be going forward; clarifying these critical questions will help to redirect the interpretations we offer to staff and how we can influence their actions [...] like the issue of green ranking I think this is working against the university as I see it, people will remain uninterested as long as they see the university is not interested” (R7).

6.4.1.2. Staff Lacking ES competencies:

Some respondents identified a lack of capability as a barrier to tight coupling. Some employees claimed to lack the knowledge or skills to adopt ES into their daily work. For example, R8 believe some employees are not knowledgeable of the practical ways they can help reduce negative environmental impacts, nor have they mastered how to effectively use the few technologies adopted in the university to reduce their negative environmental impacts.

“I think this sort of gets them discouraged, and so they show no interest to use some of the few solutions we have on the ground [...] for example, colleagues should be able to access the university internet from off-campus and should be able to use our meeting apps like zoom and the rest, to attend meetings instead of driving down emitting carbon, but they don't for many of them it is purely because they don't know how to use these technologies” (R8).

Some respondents opined that the lack of capability is evident in waste management practices. They claimed that behavioural discrepancies could be observed, which are inconsistent with the principles of good recycling, showing that some institutional members lack the skills to sort waste effectively.

“I honestly, I don't understand how things are supposed to work, really. When you visit the main areas on campus, I mean where people convene, like the business school cafeteria area or the school of architecture reception area, you will see that the university has installed very large general waste bins there.

What they are saying indirectly is hey, don't bother sorting your waste; dump it there and be on your way. I mean, some people do not really get what goes into the green or blue bins as long as they can get away with using general waste bins. So, for me, the university should begin by removing completely those large bins from these places" (R6).

"I believe that some people here genuinely do not know how things work. I tell you, maybe before you leave you should go to the commercial hub, you know, where the cafeteria is, and you will see it's all a big joke. I mean, I can maybe understand if students make these mistakes, but staff who ought to know better, you will see, ignore those recycling bins mixing up everything, they just dump everything into anything, and it drives me crazy" (R9).

6.4.2. Systemic barrier

This research found high work pressure as one systemic issue that impedes tight coupling efforts.

6.4.2.1. High Work Pressure

The busy schedule of employees was echoed by some respondents (e.g. R15, R19, R22, R24 and R25) as another reason why employees may choose not to be involved with adopting ES considerations into everyday routine. According to these respondents, pressures emanating from multiple priorities and deadlines set out by their university do not allow them enough room to be involved and engage in ES activities. For example, one respondent claiming to be a rebel for the green environment mentioned that the heavy workload for teaching and research constrained him from attending the university-scheduled green events.

For another respondent, the heavy workload creates multiple priorities, resulting in their non-engagement with ES activities at the university over time. For example, they stopped attending their university ES sub-committee meetings. However, it is worth mentioning that though these respondents confirmed they are not participating in green initiatives at the university level, they claim to undertake environmental actions on a personal level.

"I'm kind of a rebel for the green environment, so I do as much as I can within my time limit because we are constrained by our teaching and research. So, I don't have the time to take part in some of the activities I see going on. For example, the other day, I thought they had a green fair, but I just walked past because I had back-to-back lectures that I had to attend, and by the time I was

done, the event was over. So, although I don't do much of what the university is promoting, I try my personal best to be as green as possible" (R19).

"One of the personal things has to do with my commitment to myself and my commitment to the university as an organisation. I need to set my more important priorities. I have deadlines and many things that I need to fulfil within a certain period, so I am contributing to the university's sustainability efforts. However, I must admit I have not been able to balance my priorities well. Over time, I lost interest in anything to do with sustainability at the university; I no longer attend the sustainability sub-group meeting like I normally do because my priority is to meet my teaching and research deadlines" (R24).

6.4.3. Resource Constraint Barrier

The primary finding of this research was evidence that resource constraints can hinder the tight coupling of ES into everyday work. Respondents reported the issue of limited funding from funding bodies to keep successful ES schemes or programs remains a significant challenge for NESU. Respondents (e.g. R6, R8, R15, R24, and R25) spoke of financing challenges for ES. For example, R2 expressed his view, noting the lack of funding for behaviour change programs. At the same time, R15 shared his experience of running out of funding.

"See, we need funding to invest in behaviour change initiatives. For example, I thought we could sponsor things like cultural week, student union events, and fashion week or even hold monthly sustainability events or programs. Still, we can't because we don't have the finances to do so. My motto is that the more people see these things we are projecting, err, the more they are likely to become conscious of what we are doing" (R8).

"I will give you an example: we had the cycle to work scheme in the university which started, we tried our best to communicate this to staff and students and things, I mean we began to pick off, just then we ran out of money you know, we inform management, but nothing was done to continue the funding for this programme. It's such a shame to say that the one thing that I saw got the interest of people stopped, and I always feel so bad sitting here and telling people when they come around that we have suspended things" (R15).

R6 and R24 shared a similar opinion but noted instead that internal funding for ES in their university was slashed due to the university's cost reduction drive. Thus, the sustainability department relies on external funds to boost its finances. They made further claims that the expectations of external funding bodies harm tight coupling efforts. According to respondents, funding organisations set unrealistic expectations for securing sizable funding, such as requiring universities to demonstrate a new direction for ES from previous projects before funding can be awarded.

The pressure for new ideas and direction is problematic, as universities struggle to meet this expectation consistently. According to R6, this has created a situation where universities are unable to fully maintain or sustain ongoing projects, as they are in a hurry to move on to the next new project to satisfy the expectations of the funding organisation.

“I think lots of places are probably contracted in terms of what they are doing, in terms of the direction that they are going to be able to invest in sustainability, and I will say there is real pressure on universities from funding agencies to seek out new directions every time we go to them for money. It is a huge struggle for us because, first, it means we are always on the hunt for new ideas, and second, we are not able to keep track of what we have on the ground to see that it yields the envisioned outputs. The harsh reality is that we seek out these funding years in and year out because if we don't, we run the risk of losing out completely, so we have a big challenge keeping up with those requirements from our funding partners” (R2).

“The problem with the climate change fund was that at the end of every year, or 18 months, or however the money lasted, a) the money ran out, which they always knew, but b) if there were going to get more money from the climate change fund, we had to change focus completely. So, it couldn't be the same project we got money for” (R6).

“The EAUC will probably point to this as well. There was a period where they were quite reliant on specific project funding; it kept coming up to this kind of brick walls where once the project funding was over, they could no longer get support” (R24).

Also noted by R8 and R15, the continual expectation that universities must change direction to gain funding for their ES activities poses a problem, as successful schemes eventually fail due to a lack of financing.

“Unless there is long-term funding for the bits that are successful of those schemes, what we run the risk of is that for some time we have this sort of tremendous resource and energy around a particular kind of ES issues, but then it sorts of completely stops. So those areas we are already successful on we need to push on because we are successful, but it does not mean our staff are inculcating the required changes” (R8).

CHAPTER CONCLUSION

This research investigates policy-practice decoupling, means-ends decoupling, tight coupling, and barriers to ES tight coupling in the culture of NESU. Table 26 summarises the primary findings of this research. In total, seventeen factors were identified across the four themes of the research. Themes shaded blue are the emerging findings of the study. Overall, the evidence proves a disconnect exists between the policy and practice of ES, which is driven mainly by rationality, fragmentation, and compartmentalisations.

Tight coupling ES into organisational members' culture and everyday work entails adopting an integrated process involving building coherence and cognitive participation, among other things. Three categories of barriers were identified that can threaten tight coupling efforts as NESU seeks greater embedding of ES into the culture.

Table 26: Summary of research primary findings

Main Theme	Sub-themes
Factors of Policy-Practice decoupling	Causal Indeterminacy-Bounded Rationality
	Fragmentation of External environment
	Internal Fragmentation
	Task compartmentalisation
	Outsourcing
Factors of Means-ends decoupling	Goal Ambiguity
	Culture
	Underestimation -Human and Financial resources
	Exiguous Technical infrastructure
Tight coupling ES into the culture	Accidental coupling
	Coherence
	Cognitive participation
	Collective action
Barriers to ES into the culture	Reflective Monitoring
	Individual/psychological Barriers
	Systemic Barrier
	Resource constraint barrier

CHAPTER SEVEN DISCUSSION OF RESEARCH FINDINGS

7.0. INTRODUCTION

This chapter discusses the findings of this research. It is structured according to the four themes of the research. The chapter concludes by presenting the study's conceptual framework, thus directly addressing this research's overarching goal of establishing a conceptual framework of factors that further ES decoupling, tight coupling, and barriers to ES tight coupling into the culture of NESU.

7.1. FACTORS OF DECOUPLING BETWEEN POLICY AND PRACTICE OF ENVIRONMENTAL SUSTAINABILITY IN NESU

The institutional theory is adopted in this research to capture the obvious and non-obvious arrangements that inform how organisations function and change internally in response to demands from their environment (Boons and Strannegård 2000). The theory proposes that organisations' internal structural arrangements can be subjected to decoupling to balance strategic imperatives and expectations of the outside world. Therefore, organisations use decoupling to appear responsive to external demands without changing their systems or norms to support the adopted practice (Paino 2013).

This study's primary findings reveal that ES implementations exist in NESU but are operated in a decoupled or disconnected way. This result validates the institutional theory that decoupling is a symbolic approach adopted to establish legitimacy while underlying operational processes hold inconsistencies. The interviewees (sections 6.1.1., 6.1.2, 6.1.3., 6.1.4, and 6.1.5) revealed that NESU detaches ES from daily institutional routine through policy-practice decoupling. In NESU, there were visible signals of ES around campus; however, the underlying operational processes did not fully support ongoing practices. This finding also collaborates with claims within existing literature that it is not surprising to find that ES in some institutions can be carried out in parts of a university while other operational units of the same university lag (Dahle and Neumayer 2001).

Policy practice, a typology of decoupling within institutional theory (Bromley and Powell 2012), is the focus of this research. The thesis literature proposes the definition of policy-practice decoupling as

inconsistencies between policies and the implementation of programs (see section 4.3). According to Orton and Weick (1990), three reoccurring decoupling factors exist. These include causal indeterminacy, fragmentation of the external environment, and fragmentation of the internal environment. The findings of this research reveal that policy-practice decoupling of ES in NESU is fostered through causal indeterminacy (bounded rationality), fragmentation of the external environment, internal fragmentation, task compartmentalisation and outsourcing. These findings shed light on the complex dynamics of policy-practice decoupling, providing a deeper understanding for academic researchers, policymakers, and university administrators.

The respondents played a crucial role in this research, revealing instances of causal indeterminacy (bounded rationality) that led to a lack of communication, misinformation about initiatives, and uncoordinated operation of environmental initiatives on campus. Their insights shed light on the rationality/understanding challenges faced by employees who chose to ignore ongoing ES activities within their university. For instance, they reported regular misinformation about undertaking specific environmental actions, such as mislabelling and wrong positioning of recycling bins and a lack of information on waste generation and separation.

Furthermore, insufficient communication from relevant departments about implemented ES schemes caused awareness and understanding issues, which meant that employees were not able to adopt this practice into their work or routine. Some respondents expressed their frustration about their university not having an information dissemination database for ES and the difficulties they encountered when attempting to access information about their university's environmental performance. The evidence suggests that NESU did not keep up-to-date records of their campus ecological performance.

This research also found that inadequate strategy/policy provisions were to further policy-practice decoupling. This finding supports existing studies that state that policy issues can lead to practice adoption problems (Verhulst and Lambrechts, 2015; Fiselier, Longhurst and Gough, 2018; Lozano, 2006; Filho et al., 2018). In the case of NESU, there were policy issues, including a) a lengthy/wordy

policy document. b) The policy does not contain a clear execution strategy, and c) the document is incomplete. It does not capture all relevant areas of the environmentally sustainable campus (e.g. waste, energy, transport, water, and biodiversity). These policy issues combined posed challenges for employees to gain clarity and understanding.

The findings of this research validate the institutional theory and are consistent with previous research (Lozano 2006, Leal Filho et al. 2019a). They affirm the institutional theory premise that causal indeterminacy is a strategy of policy practice fostered through bounded rationality (e.g., limited information-processing capabilities). The research demonstrates that ‘misinformation about sustainability’, ‘lack of awareness,’ ‘lack of communication’, and ‘policy document issues’ are strategies of decoupling used in NESU to create rationality issues which further policy-practice decoupling of ES.

Furthermore, respondents revealed the disconnected ways with which their university practised ES. Their accounts exposed conflicts such as where the university's actual activities contradict projected environmental messages. For example, both universities promote paper waste reduction, yet paper-based promotional materials such as paper flyers and pamphlets are excessively used. In one of the studied universities, branded reusable water bottles were distributed on campus to encourage plastic waste reduction. Yet, they had only one water dispensing fountain installed throughout the university, and this fountain had not dispensed water for over a year to allow people to use their refillable bottles.

Likewise, it was exposed in these universities that waste recycling is promoted; however, non-recyclable packaging is used for packaging food sold on campus. Food waste reduction is encouraged, yet commercial food stalls on campus cook more food than is consumed. This research also identified shortcomings in ES implementation related to waste management. Participants highlighted the lack of adequate waste separation systems within campus hubs. Specifically, they mentioned the strategic placement of general waste bins within hubs, encouraging dumping instead of sorting waste. This finding validates institutional theory by supporting Orton and Weick's (1990) argument that

uncoordinated actions and sharing a few or weak versions of ES practice leads to policy-practice decoupling.

In addition, the findings align with existing empirical research studies. For example, the practical ways NESU decouples ES activities are consistent with reports from other studies, e.g., Sule and Greig 2017, Sharp 2009, Hopkinson, Hughes, and Layer 2008. These studies reported that a university could place expensive recycling bins in public places while allowing waste generation to escalate. NESU contradicted the core principles of ES. Specifically, allowing increased waste generation through non-recyclable food packaging, encouraged dumping through strategically placed general waste bins, and failed to provide clear instructions at recycling points, hindering proper waste sorting practices.

External environment fragmentation leads to decoupling due to the absence of external stimulus or sanctions from normative and conceive stakeholders pushing for embedded integration (Orton and Weick 1990). Indeed, NESU utilised External environment fragmentation to further policy-practice decoupling of ES. It seemed that they successfully managed to shield themselves from their external environment because both their external and internal stakeholders have little or no information on which to assess or judge their ES performance accurately. This research found lack of pressure from clients and failure to measure up with sector peers, i.e. (other universities) are implicit indications that a university is not committed to taking ES seriously. Clarke and Kouri (2009) argue that this strategy is effective because clients are likelier to choose an organisation with no public profile than a university with a demonstrably poor reputation on the ES rating system.

Behnam and MacLean (2011) added to institutional theory, arguing that 'if inspection, evaluation, and control activities are minimised or limited by external regulatory bodies, institutional activities risk becoming a façade of conformity. This research validated these positions as the data revealed that NESU kept a low ES profile and did not engage seriously with external ES rankings to avoid public scrutiny. Through disengaging with sustainability validation bodies (e.g. green league tables and charter agreements), NESU reduced their visibility of being observed for violations. This research aligns with

Moratis (2016), who argues that organisations can conceal non-compliance by evading scrutiny from external bodies and ranking tables.

Institutional theory (Sociological institutionalism I) purports that the social environment of organisations affects their behaviours, practices, and ideas, and so organisations must remain 'isomorphic' with their environment to attain and maintain legitimacy and resources required for survival (DiMaggio and Powell 1991a, DiMaggio and Powell 2004). This theory is validated within this research as respondents pointed out that their university maintaining a low external profile on ES, failing to measure up or imitate successful sector peers, and the lack of pressure from internal and external stakeholders enable them to abide and respond superficially to institutional pressure calling on them to adopt new structures for ES without implementing the related practices.

This finding implies that NESU adopts a window-dressing approach to ES, making it difficult for them to meaningfully contribute to addressing ES challenges in their context. NESU's current ES disposition demonstrates a moral organisational failure (Bromley, Hwang and Powell 2012), which can lead to jeopardised legitimacy (Legitimacy Façade) if found out by society or stakeholders (Snelson-Powell, Grosvold, and Millington 2016). Thus, mimetic isomorphisms, such as seeking alignment with best practices and normative isomorphism, e.g. seeking alignment with espoused standards for ES set out by educational/professional authorities, will enhance legitimacy.

Institutional theorists have identified internal fragmentation as an organisation's strategy to decouple policy from practice. Stål and Corvellec (2018) established that internal separation allows organisations to buffer their business model while decoupling from emerging demands. This investigation uncovered that the internal systems, structures, and processes in NESU support ES poorly or only partially. Internal factors are utilised to distance policy from practice, including the absence of leadership, inadequate policy and strategy, lack of implementation structure, and lack of employee engagement and centralisation.

Orton and Weick (1990) proposed that Internal fragmentation, such as cultural diversities and bureaucracies, can cause decoupling. Supporting this position, Dick (2015) argued that if individuals experience red tape between practices and due processes, they may lose legitimacy for institutionalised practices. This research found no evidence supporting the claim that the existence of bureaucracy causes policy-practice decoupling in NESU. This discrepancy can partly be explained by the fact that bureaucracies may not yet exist since ES is still at pre-institutionalisation levels. Current implementations for ES are not good enough to add bureaucracy or constraints to work activities as there are yet to be transparent processes to guide practice adoption.

Also, this investigation found no evidence to support that specific characteristics such as size, accreditations, and international orientation impact university decisions to decouple ES, as Moratis (2016) claims. However, the researcher is cautioned not to conclude that these characteristics do not affect decoupling since the methodology adopted for this research and the focus of the investigation did not set out to test these assertions directly.

This investigation adds to institutional theory, capturing other internal factors that advance internal fragmentation. First, this investigation revealed that NESU used 'centralisation' to further policy-practice decoupling of ES. They exclusively dedicated and concentrated ES planning, responsibilities, decision-making, and control to one department (e.g. central services or estates department). This finding demonstrates that treating ES as the sole responsibility of one department without efforts to ensure these departments are working to engage other departments and functions of the university enabled NESU to fragment ES from different functional areas of the university. Respondents believed that due to the high centralisation of ES to one department, colleagues in other parts of the university perceive upholding ES practices as outside the scope of their responsibility.

A second contribution of this research to institutional theory is the finding that 'Outsourcing' is an internal fragmentation mechanism used to foster policy-practice decoupling of ES. This investigation uncovered that NESU outsourced the waste management aspect of its ES activities to contractors. These

contractors have complete independence to execute their service without close monitoring from the university sustainability department. Contract cleaners tasked with waste management activities, including collection and handling, do not prioritise proper waste sorting and bin placement.

Thus, outsourcing ES activities to third parties without close inspection or monitoring from the university to ensure service providers deliver quality executions results in policy-practice decoupling. Also, outsourcing makes it easier for institutions to shield reality from institutional members who remain oblivious to their ecological impacts as one respondent argued that the lack of close interaction with contractors has caused the university community to remain unaware of the actual amount of waste being generated on campus or how waste generated is processed since the university lacked data on the amount of waste being recycled or which eventually ends up in the landfill.

In addition, outsourcing impacts a university's ability to demonstrate tangible outcomes for ES. One respondent noted that outsourcing results in missed opportunities to prove financial benefits from waste management and, by extension, evidence for ES. This respondent believed that creating a business waste management unit rather than subcontracting this activity would be more beneficial to mitigate policy practice decoupling (section 7.2 gives more details on this).

This investigation found that 'Task compartmentalisation' is another internal factor used to decouple ES from practice. This finding adds knowledge to institutional theory as it captures a new internal factor used to facilitate policy-practice decoupling previously overlooked in previous reports. The evidence revealed that the sustainability department in NESU compartmentalised their day-to-day ES tasks, duties, or jobs by dividing it into two aspects: a) the administrative side and b) the operational side.

The sustainability team prioritised fulfilling the administrative side of their job because it enables them to fulfil their ES regulatory obligations and avoid deeper scrutiny and close inspection. Respondents affirmed that it is vital for them to dedicate more focus to those tasks, which will help the university maintain a positive image and avoid sanctions from government regulatory agencies. They

acknowledged that little devotion is given to the operational side of their jobs, such as the day-to-day tasks of energy management, waste management, and staff engagement.

The implications of high task compartmentalisation are that it enables NESU to avoid being caught out by regulative processes that enforce compliance with them. For example, Respondents shared that they ensure mandatory public documents are promptly updated and that they put forward new or renovated buildings for inspection to pass compliance checks. In other words, task compartmentalisation enabled the university's sustainability department to prevent its institution from facing deeper scrutiny by controlling the scrutiny process and avoiding close inspection.

NESU controls external scrutiny by dividing ES work tasks and prioritising those tasks that benefit them in fulfilling their regulatory obligations. They promptly update mandatory public documents to appear responsive and, therefore, minimise or limit the control activities of relevant regulatory bodies. This finding adds to institutional theory and provides a tangible example of how a university implements ES symbolically by signalling its benefits without incurring the costs of high-quality implementation.

Likewise, internal leadership and top managers neglect to provide strategic direction for ES, leading to policy-practice decoupling in NESU. Respondents pointed out that lack of management or leadership support caused employees to side-lined ES and remain unmotivated to act or support this practice. While this finding confirms existing research claims that leadership play a significant role in advancing environmental commitment (Lozano 2006; Jang, Zheng, and Bosselman 2017; Sammalisto, Sundström and Holm, 2015; Gwozdz, and Hvass 2018; Lozano and Garcia 2020). It adds new knowledge to institutional theory by directly linking leadership to policy-practice decoupling.

7.2. FACTORS OF MEANS-ENDS DECOUPLING OF ENVIRONMENTAL SUSTAINABILITY IN NESU

Means-ends decoupling is the second type that organisations can adopt to respond to external demands without changing systems or norms to support an adopted practice. This thesis proposed the definition of means-ends decoupling as where resources or methods (means) implemented or used for driving forward ES fail to achieve the desired environmental outcomes or intended goals (Ends). (Graafland and Smid 2016; Bromley and Powell 2012) (section 4.3). The fieldwork evidence (sections 6.2.1, 6.2.2, 6.2.3, 6.2.4 and 6.2.5) revealed that through goal ambiguity, culture, underestimation (human and financial resources), exiguous technical infrastructure and accidental decoupling NESU further means-ends decoupling of ES.

This investigation revealed goal ambiguity, including having no clear performance targets, indicators, and baselines for ES, leads to means-end decoupling. This finding collaborates with the premise that when goals are not formulated clearly, intended outcomes are missed (Orton and Weick, 1990). Thus, having clear, measurable goals is essential for a university to realise tangible outcomes for this practice (Stål and Corvellec 2018).

Furthermore, institutional theorists argue that cultural complexities, such as multiple and contradictory values, beliefs, and practices, can be used to further decoupling (Browaeyns and Baets 2003, Rasche and Gilbert 2015). This research found evidence supporting this premise. ‘Culture’ was reported as a factor in means-end decoupling. Institutional culture is the second foundational theory underpinning this research. It offers a valuable lens enabling a deeper understanding of cultural complexities within NESU, which, according to decoupling theorists, is a factor of means-ends decoupling.

This research defines institutional culture as a sum of the values, beliefs, and behaviours of university members, which are developed and transmitted by language or symbols identifiable through stories, unique languages, and norms emerging from an individual and organisational level. Thus, understanding institutional culture requires recognising and identifying visible components of culture

such as structures, policies, procedures, services, technologies, and financial resources (Khan et al. 2010; Heidrich 2014).

Three types of culture were found at play in NESU, contributing to ES's means-ends decoupling. These include orientation of reward, culture of communication transmission, and individualism norm. Communication is a level-one cultural factor classified as an artefact by Schein (1988). The data revealed that the source that encodes and sends expected ES communications to employees were people viewed as higher-ups (situated in an ivory tower) who use ES messages to reprimand employees perceived to be erring on the side of sustainability. This shows that the language and culture of transmitting communication is a one-way, top-to-bottom approach, which respondents believe works against ES as employees overtime, instead of disregarding any communication being circulated to object to management incisiveness. Respondents felt that leadership communications about ES must be persuasive rather than authoritative.

This finding collaborates with institutional theory as it demonstrates that an organisation's information dissemination practices can be used to foster means-end decoupling. The content, tone and language used in messages communicating about ES, the frequency of message transmission and the sender/encoder of ES messages were identified as creating a culture where employees normalise decoupling ES from actual from their day-to-day practices. This finding also affirms the study by Behnam and MacLean (2011), which found that communication issues (e.g. documents, emails, and other written reminders) cause decoupling from actual organisational practice.

The orientation of reward is the second cultural component identified in this research. 'Reward orientation' refers to an orientation focused on the degree to which ES is seen as an integrated part of the institutional reward system. Herman's Iceberg Model of culture identifies financial resources as visible (apparent) aspects of culture. According to Ghinea and Bratianu (2012), the classification of culture as a 'reward' comes under the normative element of culture. This makes reward a cultural tool deployed to define ideals, values, and rules for what is acceptable, expected or encouraged. This

research found that the culture of distancing the reward framework of the university from recognising and supporting ES led to means-end decoupling. Respondents expressed that the current reward orientation at their university caused employees to disregard ES as a relevant value and rule of the university.

This finding also validates existing literature that reward plays a vital role in establishing rules, motivating employees, and encouraging positive, sustainable behaviours (Bertels, Papania and Papania 2010). Thus, it is unsurprising that employees attribute substantial value to rewards for ecological behaviours. Respondents believe that displaying green behaviour is not an established rule since their university has no systems to reinforce such behaviours. Interestingly, respondents emphasised non-financial rewards such as celebrating unsung heroes and extraordinary behaviours and including ES criteria in the career and promotion framework. Therefore, staff 'engaging in sustainable behaviours (end)' require 'reward (means)' to fuel their interests.

This research also found 'individualism' to be another cultural factor that fosters means-end decoupling of ES. Schein's (1990b) theory of culture underpins this finding. Schein established values, beliefs, and norms as the second level of culture, which define ways of integration or adaptation in an organisation. Norms and beliefs drive the process by which organisational members justify the actions and behaviours of group functioning. Individualist culture was found to define employees' behaviours towards ES. The cultural climate at NESU endorsed employees working independently or in isolation with little or no interaction with peers.

Respondents reported facing extreme pressures and workloads, which fuelled a norm of isolation and high independence. They described the nature of their work, noting that on typical days, staff had packed timetables with lectures, tutorials, emails, drop-ins, and meetings, which, by the end of a workday, they do not have enough time to interact or socialise with colleagues. They claimed that when it seemed like a staff member had no teaching commitments, they isolated themselves to get research work done.

This existing norm is problematic because collaboration, cooperative working atmosphere, social interactions, and networking are essential to create a culture and environment which values and actions on ES. Indeed, this finding collaborates with institutional theory because it gives strength to the argument that cultural complexities such as the existence of values, beliefs, norms, and practices which are contradictory to ES principles will lead to decoupling (Browaeys and Baets 2003, Rasche and Gilbert 2015). Furthermore, this finding validates Ghinea and Bratianu (2012) that the behavioural aspect of culture, such as learned norms, defines behaviours as a way of life.

This research found that underestimating human resources is a factor in means-end decoupling at NESU. As institutional theory purports, decoupling can result from resource limitations such as lack of skills, time and cost. Some authors supporting this position argued that a university may choose to decouple upon the realisation that more resources are required to develop and maintain ES than was initially expected (Moganadas, Corral-Verdugo, and Ramanathan, 2013; Bellantuono et al., 2016). This investigation found that NESU decouples ES from its core organisational practices by underplaying the quality of human resources regarding skills and competencies required to support ES.

Respondents believed managers with little or no disciplinary expertise shouldered the responsibility of planning, organising, managing, and controlling ES initiatives and schemes around campus. For example, respondents expressed that sustainability managers in their university had no formal degree in sustainability or environmental management and limited people management skills needed to effectively deliver on and influence employees towards ES. In other words, the means (managers) involved in developing and maintaining ES lacked adequate competency to deliver meaningful outcomes, thus resulting in the symbolic manipulation of the practice.

Furthermore, this research found an underestimation of funds and further means-end decoupling. This finding supports the idea within institutional theory, which suggests that decoupling will occur if schools face resource constraints (Rasche and Gilbert 2015). NESU gave limited funds to support ES schemes. Doing so caused ES projects to fall into disarray after a while. Respondents expressed that

funding is used to manipulate ES implementation as the university focuses on funding elements of ES activities, which helps them project and maintain ES legitimacy to the outside world.

Another finding from the primary data analysis is that the lack of investment in technological infrastructures needed to enhance ES implementations and encourage behavioural change led to the means-end decoupling of ES in NESU. There have been insufficient technological infrastructures to support ES initiatives on campus. For example, popular workplace green technologies such as censored lights, water control censored taps, sufficient electric car charging spaces, and new heating, ventilation, and air conditioning systems in old buildings were yet to be installed throughout the university. This finding adds new knowledge to institutional theory, directly linking technology limitations to means-ends decoupling.

While existing research has alluded that decoupling found in organisations is primarily driven by deliberate attempts by these organisations to make such disconnection (Elmaghrabi, 2014; Scott, 2014; Bromley, Hwang and Powell, 2012; Haack et al., 2012; Dambrin et al., 2007). This research found contrary evidence that practice decoupling can also occur due to unexpected organisational events. This research terms this finding as ‘accidental decoupling’ and is defined as unforeseen circumstances or events which occur abruptly or without notice, forcing decoupling to happen. This investigation uncovered that an unanticipated/unexpected event, the demise of the university sustainability manager, resulted in the means-ends decoupling of ES. This finding adds new evidence to institutional theory by demonstrating that influences outwit the control of organisations can force means-ends decoupling to occur.

This finding highlights the problems which occur when vital issues are left in the hands of a few individuals. For example, ES's decisions, ideas, and leadership came mainly from one manager at one of the case study universities. However, when this manager suddenly passed away, the university's entire ES programs, initiatives, and projects slowed and eventually stopped for a significant period. According to this data, it can be inferred that when a practice solely depends on one personnel or

manager's stewardship, it can result in decoupled implementations if the personnel/manager suddenly cannot fulfil their responsibilities.

As one respondent reported, following the demise of their university sustainability manager, it was difficult to fill his position, implying that other staff in this department lacked the necessary higher-level skills to fill in for the vacant managerial responsibilities. This caused delays, which resulted in significant practice gaps observed by institutional members as failed implementations. Although the university did not anticipate a sudden skill gap, they could have been better prepared for employee turnover by ensuring staff at all levels are skilled to adapt, fill in and take on responsibilities when unlikely events or absences occur. Also, they would devolve responsibilities involving multiple personnel rather than relinquishing responsibility solely to one individual. This broadly collaborates with the idea of Sharp (2009), who suggested that it is not unheard of that a university employs just one person and charges them with an overburdening responsibility of having to “coordinate, communicate, and project manages sustainability across an entire campus.

7.3. TIGHT COUPLING ENVIRONMENTAL SUSTAINABILITY INTO THE CULTURE AND THE DAILY ROUTINE OF INSTITUTIONAL MEMBERS

Tight coupling ES requires a transformational change to the culture, including artefacts, values, and assumptions. The NPT proposed by May et al. (2009) was adopted as the theoretical lens for categorising and interpreting findings relating to tight coupling of ES. Coherence, cognitive participation, collective action, and reflective monitoring of change proposed in this theory are validated by the findings of this investigation as effective for tight coupling ES into the culture of NESU.

7.3.1. Tight coupling ES into institutional culture through building Coherence

The literature establishes that coherence is about meaning and sense-making (Owens and Charles 2016). For a practice to become embedded, organisations must ensure that employees conceive appropriate meanings and work out reasonable uses for the imported practice before it can become accepted (May et al., 2018). In other words, environmental practices must first make sense as a cognitive and

behavioural ensemble for actors to collectively invest meaning into it (May et al., 2009). This research (section 6.3.1.) found that through communal specification, individual specification, and differentiation, coherence can be fostered around ES, leading to its tight coupling into a culture.

Communal specification' is about enabling employees to build or gain a shared understanding of a practice's aims and potential benefits (May et al., 2018; Owen and Charles, 2016; Wood, 2017). Respondents of this research shared the view that building shared understanding in their institution will entail strategies such as enhancing communication and information and improving the policy and values on ES. These findings back NPT and existing literature that improving information and communication around ES will enhance employees' awareness of their organisation's conservation efforts. They will be more likely to engage in green behaviours (Lozano 2006; Levy and Marans 2012; Bertels, Papania and Papania 2010; Behnam and MacLean 2011; and Azar and Al Ansari 2017).

For communication to be effective in building coherence, respondents suggested that a) ES communications. It should come from both the sustainability department and the Human Resource Department. B) the communication channels to convey sustainability messages must be carefully considered. A blend of communication channels beyond email and fliers, such as the university website, social media pages (e.g. faculty blogs, Facebook, Instagram, and Pinterest), digital signage, and interactive touch screens around campus should be adopted to educate and not just inform about ES. For example, respondents shared that their universities utilised fliers and email as the primary medium for communicating about ES. However, these have been ineffective because, according to them, emails are often ignored and leaflets discarded and littered throughout the university.

Furthermore, this research confirmed that meaning and sensemaking could be fostered through shared values. As discovered in this research, some respondents believe their university needed clear values for ES, claiming it would encourage a communally shared understanding, belief, and expectation of the practice. Also, the finding collaborates with the studies of Graafland and Smid (2016), Filho et al. (2018), Kang and Xu (2018) and Ramísio et al. (2019) that having ES policy aids understanding as

policy statements communicate an organisation's environmental intention and strategy which guides implementation.

The findings of the research reveal problems with the environmental policy at NESU. Thus, for an ES policy to be effective, it must be concise (less wordy), with clear goals or targets and comprehensive, i.e. there should be separate policies for the different ES areas, e.g., energy, waste, water, transport, and biodiversity. This finding adds to NPT as it links institutional values to coherence building. The finding also backs the argument that reflecting change through visible aspects of culture (e.g. Artefacts, policies, mission statements) is necessary to signal to staff the extent to which matters related to ES are valued and central to institutional activities (Adams, Martin and Boom 2018; Kang and Xu 2018; Galpin, Whittington and Bell 2015; Fiselier, Longhurst and Gough, 2018).

This inquiry confirms NPT as it found that practice differentiation will help build the coherence required to tight-couple ES into the culture. NPT defines differentiation as demonstrating how imported practice differs from the usual way of working (May et al., 2009; Owen and Charles, 2016; Wood, 2017). Respondents believed their university failed to demonstrate how existing working methods differ from the ecologically sustainable ones. The blurred line between the old and supposed new ways of working bounds the understanding of how best to embed ES in daily work routines. The finding of this research further shows that differentiation can be demonstrated through the implementation of 'quality' practices. Respondents defined quality as,

- a) Operationalising ES that is free from deficiencies or inconsistencies.
- b) Practising ES to conform to best practices such as following mimetic, normative and regulatory expectations set out by the institutional environment. This finding collaborates with institutional theory and the writings of DiMaggio (1988) and DiMaggio and Powell (2004).
- c) It improves employees' outcomes by providing knowledge and guidelines for incorporating ES into routine work. This supports the idea of Aravind and Christmann (2011).

- d) Diversify the ES schemes offered at the university to make them easy and convenient to access and consider the preferences of individual employees.
- e) Continuously updating the university's ES artefacts, including logos, colours, slogans, etc., used to project ES.

Finally, to build coherence, this investigation found that 'individual specification' will enable employees to understand their responsibilities and better understand how their work changes due to adopting ES. This finding validates NPT, suggesting that providing actors with opportunities to understand the benefits and importance of new practice (internalisation) is pivotal to holding the loosely coupled system together (May et al., 2018; Owen and Charles, 2016; Wood, 2017). Some respondents believe employees did not participate in ES because they were not assigned personal responsibilities. They think assigning individual responsibilities or job descriptions will help employees better understand how their work contributes to and or is affected by ES. As one respondent claims, this brings benefits of enhanced awareness and improved accountability as it will become easier to identify and follow up non-compliers.

7.3.2. Tight Coupling ES into institutional culture through cognitive participation

NPT proposes that 'activation' is required to normalise an implemented practice. Activation is defined as the personal commitment of actors (e.g. university staff) to embed environmentally responsible practices into routine work (May et al., 2018). Actors' engagement reflects the cognitive contribution to thinking through and organising themselves to undertake a new practice. This investigation found evidence that all research respondents displayed cognitive participation by acclaiming themselves as university citizens. Though not directly related to their jobs, they acknowledged engaging in personal-level voluntary behaviours to help their university reduce ecological impacts.

The citizenship actions of respondents were related to personal energy savings, waste management, and supporting their university sustainability advisory group. This finding is significant because it reveals

those personal, informal, and voluntary sustainability actions indicative of ES's cognitive participation. This finding implies that university managers can draw insights from these to educate other employees on individual/personal actions they can take while on campus to help foster their university ES efforts formally. This finding supports the findings of Adams, Martin and Boom (2018) and Kang and Xu (2018) that reflecting change through invisible aspects of culture (e.g. behaviours) is necessary to define or shape modes of behaviour and motivations for work.

NPT established that the 'initiation' of crucial participants to help drive forward a practice will aid in the full normalisation of such practice into culture (McNaughton et al. 2020). This research uncovered that adequate human resources (staffing) are needed to effectively deliver sustainability activities (Moganadas, Corral-Verdugo and Ramanathan, 2013). Respondents revealed that their university faced staff engagement issues due to the lack of a dedicated team to interact with employees consistently on an ongoing basis.

The lack of staffing comes as no surprise, given that the sustainability department consists of a small team of employees. In both case studies of this research, the universities employed only three employees in their sustainability departments and saddled them with the narrow function of ensuring that the university maintains regulative legitimacy. This finding also corroborates Sharp's (2009) writing that sustainability departments in some universities are understaffed, which makes them unable to coordinate, communicate effectively, and project manage ES across an entire campus.

Existing literature contributing to NPT has suggested that cognitive participation demands increasing staff autonomy and freedom to organise their work and define activities and procedures which they believe are needed to implement and sustain ES in daily routine (Wood 2017). However, the current study's findings do not support the previous research. The data showed that allowing autonomy while ES is at the pre-institutionalisation level will likely lead to boycotts. Respondents believed that very few of their colleagues were committed to exhibiting sustainable behaviours. They claim many of their colleagues preferred old, unsustainable ways of working. It is possible, therefore, to infer that

employees, in the name of autonomy, can opt to disregard sustainable ways of working. Thus, unless ES practice is fully operational in NESU, allowing employees autonomy can become problematic for tight coupling because the university risks having uncoordinated deliverables. With less control, some employees can opt out of participating since they have professional autonomy to decide what and how to undertake their work.

7.3.3. Tight Coupling ES into institutional culture through Collective Action

NPT theory states that practices become embedded or normalised in social contexts because people work collectively to enact them (May et al. 2009). Collective action exposes individual and organisational activities needed to couple a decoupled practice. It focuses on adopting a new practice or innovation (McEvoy et al., 2014; Owens and Charles, 2016; Wood, 2017). This investigation found evidence supporting that individual and organisational activities are required to tight-couple ES as the culture of NESU (section 3.9.3). These include interactional workability, contextual integration, leadership, and GHRM.

This research supports NPT, confirming that interactional workability is essential for tight coupling ES into culture. Interactional workability refers to activities and opportunities created by a university to foster interactions, networking, and collaborations to encourage employees to share and exchange knowledge on ES (Owens and Charles, 2016; Hautala, Helander and Korhonen, 2018). This study confirms that internal and external interactional opportunities will help increase collective action towards ES (Bellantuono et al., 2016).

Respondents shared that enhancing inter-departmental cross-communication, collaboration, and knowledge exchange will help to improve relationships and bridge the isolation culture that is currently prevalent in this context. For example, some respondents suggested that there needed to be a closer working relationship between academic and research employees and the sustainability centre. This finding directly confirms the Internal interactional workability proposed in NPT. Furthermore, this result collaborates with Hautala, Helander and Korhonen (2018) that vertical coupling, which is the

coupling of coordination hierarchically between different levels in organisations, aids in the reversal of decoupling. Also, support is given to Sharp (2009), who states that practical interdepartmental, interdisciplinary, and multitier collaborations help advance sustainability efforts on campus.

This research found that interactional workability (external), such as increasing collaboration with external bodies, charity organisations, and local communities and hosting events involving external parties, including ES conferences and inter-university partnerships, will help improve employees' interest and learning opportunities. Hautala, Helander and Korhonen (2018) referred to this as inter-institutional coupling (i.e. the coupling of coordination, linking to other schools and organisations). This finding also confirms the work of Bellantuono et al. (2016), who state that resource integration, both internal and external, helps foster greater adoption of ES on campus.

Leadership is an essential factor for fostering ES tight coupling into culture. This research showed that leadership was absent in supporting the ES strategy at NESU. Thus, all respondents stressed the importance of leadership support. This finding corroborates the findings of a great deal of the previous work, e.g. Jang, Zheng and Bosselman (2017), Kantabutra and Saratun (2013), Sammalisto, Sundström and Holm (2015), De Rijdt et al., (2016) and Lozano and Garcia (2020). However, this finding stands out as it also highlights attributes of leadership required for ES to tighten its coupling into the culture in the context of NESU. Respondent indicated that leadership needed in their context should have the following.

- a) A transformational mindset to translate a university ES vision and communicate this clearly and consistently. d
- b) Act as a model for sustainable behaviour, prioritising sustainable working methods.
- c) Deans and heads of departments champion departmental leadership for ES because they have closer dealings with employees and are the icons or faces of leadership within departments.

NPT theorises that contextual integration, such as physical resources and time, is required to support a practice's continuous production and reproduction (May et al. 2009; McEvoy et al. 2014; Owens and

Charles 2016; Wood 2017). This research directly collaborates with NPT and states that contextual integration is crucial for ES tight coupling into a culture. In terms of time, respondents exposed that there needed to be more time dedicated to ES projects and initiatives to ensure its continuity for the long term. For example, one respondent shared the experience of how their university launched a programme to raise awareness about the ES activities/schemes running at the university. However, this program did not carry on for long, even though it had the potential to yield success. Respondents attributed this problem to the insufficient time to sustain activities and allow success to be attained.

One interesting finding of this research is that GHRM is a factor which can facilitate ES tight coupling into culture. This finding adds new knowledge to NPT and higher education literature. The contribution of this finding to NPT is that it adds GHRM as a factor required to support the continuous production and reproduction of a practice. Furthermore, the contribution is made to Higher Education literature as this finding draws explicit attention to the role of the Human Resource Department in driving support for ES in universities. Respondents made the point that Human Resource Department support is required to gain employees' psychological engagement and engagement with ES initiatives. University HR managers can adapt their university's HR functions and activities to support their university's ES efforts.

This investigation confirms that HR activities, including recruitment (job description, selection, and induction), training, and reward, can garner collective action for ES. Respondents recommended integrating ES actions into recruitment activities such as job descriptions, employee selection questions, job contracts, and induction training. They also proposed integrating ES into performance management, employee training and development, HR communication, and reward management activities.

Training and developing employees for ES give support to existing studies that individuals are more likely to make environmentally responsible choices when they feel competent to undertake such actions successfully (James and Card, 2012; Kantabutra and Saratun, 2013; Misangyi, 2016; Rijdt et al., 2016). Furthermore, offering and implementing a green reward strategy can help drive ES forward. However,

the result shows that non-financial rewards (e.g. awards, celebrating unsung heroes, etc) will be most effective in motivating staff. This also collaborates with the arguments of James and Card (2012) that reward needs to be applied cautiously, carefully targeted, and paired with other strategies to be effective.

While GHRM is not a new concept in academia, it is captured for the first time in research investigating ES in a university context. A practical implication of this finding is that it informs and directs on how the HR department in universities can better support their institution in implementing strategy and effectively transforming its culture towards greater ES. HR can facilitate culture change through effective communications and by working closely with their university sustainability centre to help create a sensitive environment where employees become motivated to portray and sustain ecological behaviours.

7.3.4. Tight coupling ES through Reflective Monitoring

NPT established that reflective monitoring would lead to sustained tight coupling of implemented practice (see section 4.5.1.4). Reflective monitoring refers to accessing and appraising practice through evaluation and feedback (May et al., 2009; McEvoy et al., 2014; Owens and Charles, 2016). Accessing the advantages and disadvantages of implemented practice will help develop actors' comprehension of the effects of such practice (McEvoy et al., 2014). The data of this research (Section 6.3.4.) collaborates with NPT, confirming that reflective monitoring, including communal appraisal, individual appraisal and reconfiguration, is required to ES tight coupling into the culture of NESU.

Communal appraisal involves collating formal feedback from employees to help track progress and enhance ES effectiveness (McEvoy et al., 2014; Posner and Stuart, 2013). Respondents of this research recommended their university establish a formal, open, and transparent feedback channel. They claimed that having a robust feedback-capturing system will enable the university to receive real-time feedback on the performance of ongoing ES initiatives and schemes. Strategies such as developing and administering employee environmental satisfaction surveys regularly, increasing environmental reporting, and publicising the university's carbon footprint data were recommended to obtain and share

communal feedback on ES. This finding supports the arguments of Winkler, Etter and Wehmeier (2017), Townsend and Barrett (2015), Tan et al. (2014), and Azar and Al Ansari (2017) that increasing organisational transparency around sustainability will foster insight, accountability, and participation.

This investigation uncovered that individual appraisal, such as opportunities for “personal reflection”, allows staff to review their actions and understand how ES practices affect their work. For example, one respondent suggested that their university demands employees to submit quarterly reflective reports detailing their experiences and contributions to ES at the university. However, it is worth noting that though individual appraisal can help tight couple ES into employee routines, it may, however, be challenging to operationalise in practice as some employees may perceive this effort as adding to administrative workload and pressure (Dick 2015).

Finally, this research found that reconfiguring organisational systems is necessary to tight-couple ES into institutional culture. Respondents recommended that their university benchmark other universities to learn and match up with what their sector peers are doing to promote ES (Mimetic Isomorphism) (Powell and DiMaggio 1991). This finding confirms Shriberg (2004), who found that benchmarking other universities will yield invaluable benefits such as enhancing monitoring of campus sustainability and organisational learning.

Also, the data revealed that reconfiguration of institutional structures is necessary when seeking ES tight coupling into culture. Respondents suggested reconfiguration by way of restructuring, such as moving the physical location of their sustainability department into closer proximity with other departments to encourage better interaction between the sustainability department and other functional departments (i.e. vertical coupling) (Hautala, Helander and Korhonen 2018). Furthermore, reconfiguring all ES activities is necessary to redress existing practice contradictions in the case study universities. For example, respondents called for rectifying practice inconsistencies around campus (e.g., commercial hub areas).

7.4. BARRIERS HINDERING EFFORTS TO TIGHT-COUPLE ENVIRONMENTAL SUSTAINABILITY INTO THE CULTURE OF NESU

The final objective of this research was to identify context-specific barriers that can hinder efforts to tighten ES into NESU's culture. Numerous obstacles to culture change were identified within existing literature (section 4.6.). However, this research found three main categories of barriers to ES tight coupling into a culture: individual/psychological, systemic, and resource constraint barriers (sections 6.4.1, 6.4.2, 6.4.3).

As NESU seeks firmer ES Tight coupling into culture, change managers will face individual/psychological barriers, including staff's lack of interest in ES and ES competencies. The literature defines individual/psychological barriers as human or employee limitations, drives, motivation, emotional and opportunity issues which can hinder culture change efforts. Respondents expressed that some of their colleagues had no interest in ES because they failed to execute simple 'housekeeping' activities such as turning off lights, printing less, sorting waste, etc. This finding is consistent with that of Moratis (2016), who found that internal commitment rather than resource constraints caused the decoupling of responsible management education.

The researcher also observed that although all participants indicated they were interested in ES with claims of personal-level contributions through citizenship actions, it was apparent that some participants were not too keen about participating in or engaging with ES initiatives being promoted at the university level. One reason echoed by some respondents which fuels the detached interest in ES is the university's lack of external reputation for ES. Respondents believe that peers felt there was no need to be involved with environmental initiatives on campus since their university had no image, prestige, or goals to uphold for ES. This is an exciting finding that adds new knowledge to the literature. The university's lack of a reputation for ES has not been previously identified as a factor that drives staff's apathetic attitudes towards adopting ES into routine work.

Furthermore, a lack of ES competency was reported as another individual-level barrier impeding tight coupling efforts. Some respondents identified that some of their colleagues lacked the knowledge or

skills to practice ES effectively. As a result, they are more likely to resist change efforts for fear of being exposed for lack of competency. This finding reflects those of Lozano (2006), who also found that a feeling of incompetency can impede culture change efforts.

This investigation uncovered systemic barriers within NESU that can hamper ES's tight coupling into culture. Systemic barriers are challenges relating to administration and bureaucracies. It was discovered that staff at NESU faced extremely high work pressures, which impacted their ability to engage with ES activities on campus. This barrier poses challenges to staff non-engagement with university-level ES initiatives. This finding correlates with the study by Verhulst and Lambrechts (2015), which found that high work pressure and lack of time are barriers to a culture of sustainability in universities.

Respondents echoed resource constraints, specifically lack of funding, as a leading barrier to ES tight coupling into culture. Literature (section 4.6) defines resource constraints as barriers related to issues of time, staffing, financing, and funding. This research found that NESU relied heavily on external grants to fund and support environmental projects. However, accessing these external funds has been arduous for the sustainability department due to funding bodies setting exaggerated expectations.

This inquiry gathered that funding bodies pressure universities to change ES projects or direction before they can be awarded funding support. That is to say, a university must demonstrate an entirely new investment focus before monies can be secured from funding bodies. The expectation of funding organisations poses serious tight coupling challenges because NESUs are forced to frequently and continually change project focus to obtain project funding. This impedes tight coupling as they cannot sustain the continuity of existing and often successful ES projects. Thus, the pressure for new ideas and direction for ES is a barrier to tight coupling because it prevents NESU from continuing environmental initiatives long enough to achieve tight coupling. This finding correlates with the studies of Hoover and Harder (2015) and Ralph and Stubbs (2014), which state that a lack of funding negatively impacts embedding sustainability into the culture.

7.5. RESEARCH CONCEPTUAL MODEL

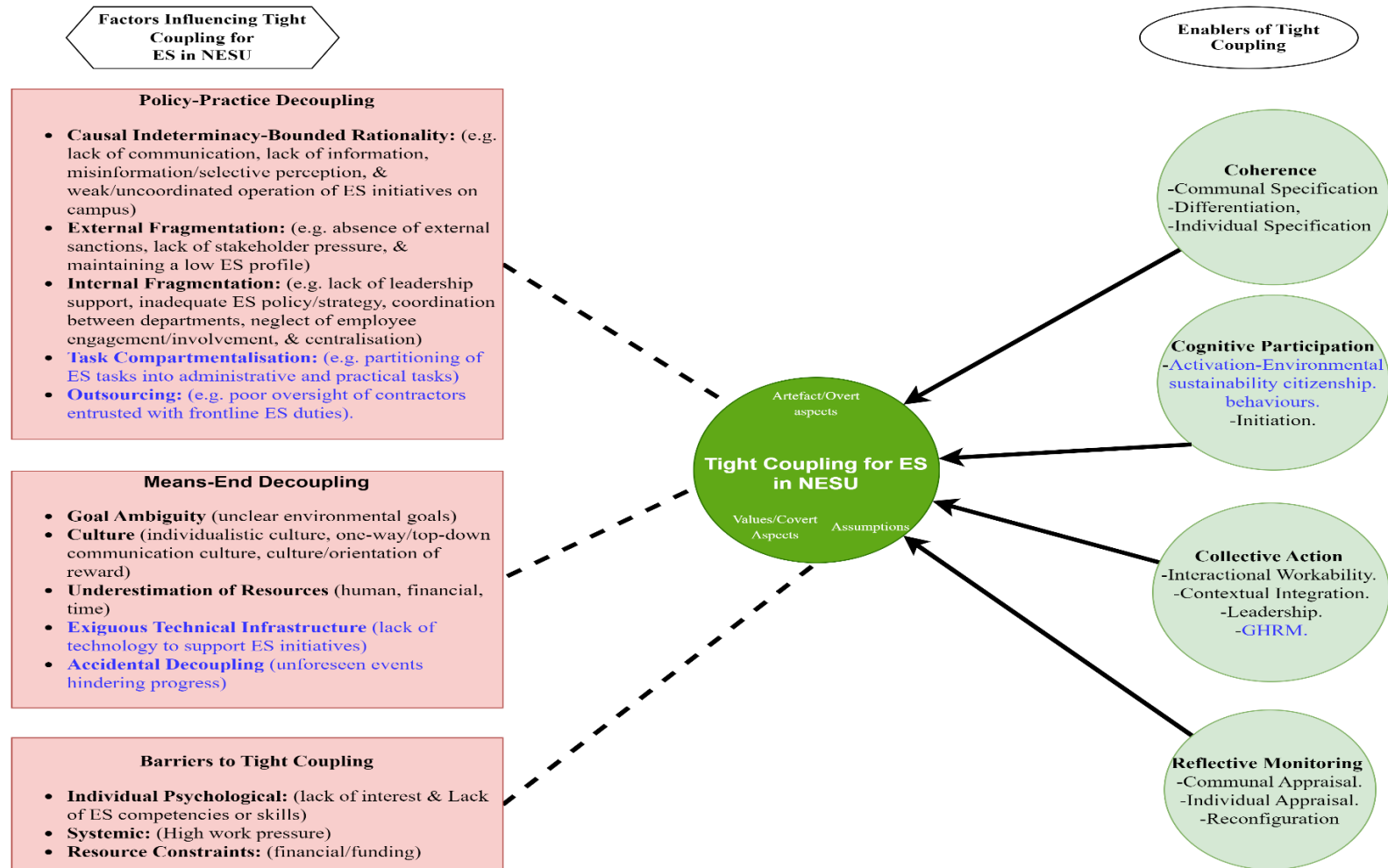
Building upon the key findings of this research, a conceptual framework (Figure 14) visually depicts the critical themes identified in this study and their intricate interactions. This framework serves as a practical tool, illustrating the key factors influencing the development of tight coupling for ES within the context of NESU. It provides a clear understanding of the complex dynamics involved in this process.

Tight coupling, positioned at the centre of the framework, represents a state where ES goals and practices are seamlessly integrated into the university's culture and operational fabric. The left side of the framework delves into the various factors that negatively influence tight coupling for ES in NESU, including 1) policy-practice decoupling factors (which highlight potential discrepancies between stated policies and actual practices related to ES), 2) means-end decoupling factors (disconnects between intended ES goals and achieved outcomes) and 3) barriers to attaining tight coupling for ES within NESU's culture.

The right side of the framework is dedicated to the enablers of tight coupling within NESU. These factors play a crucial role in creating a university environment that is conducive to successful ES Tight Coupling. The enablers, which include Coherence, Cognitive Participation, Collective Action, and Reflective Monitoring, are instrumental in fostering a positive culture. The emerging findings from this research, highlighted in purple text, contribute significantly to our existing knowledge and theory on decoupling and achieving tight coupling for ES in universities.

The conceptual framework underscores the dynamic interplay between barriers and enablers. It highlights the need for a balanced approach in addressing these factors. By effectively addressing the obstacles on the left side, we can pave the way for a more favourable environment where the enablers on the right can flourish. This balanced approach ultimately leads to the development of tight coupling, where ES becomes a well-integrated, embedded, and sustained practice at all levels of the university culture.

Figure 14: Research conceptual framework of factors of decoupling (Policy-Practice, Means-Ends), tight coupling and barriers to ES tight coupling into the culture of NESU



CHAPTER EIGHT

CONCLUSIONS AND RECOMMENDATIONS

8.0. Introduction

This chapter presents the research's conclusions and how each objective set out for this research has been achieved. In addition, it presents the research's contributions to theory and practice and its recommendations for NESU. This chapter concludes by discussing the research limitations and suggestions for further study.

8.1. Addressed Research Questions

Academic literature evidence (section 4.7.) suggests that implementation of ES has since begun in many UK universities. However, tight coupling ES into institutional culture remains difficult for some universities to achieve. Thus, the rationale for undertaking this research (see section 1.2.) is to contribute towards a better understanding of ways of realising cultural transformation for ES in universities and to advance knowledge by proffering practical solutions that can aid in tight coupling and normalising ES in the norms, values, and assumptions of universities.

Furthermore, gaps in knowledge exist about conditions that lead to ES decoupling (policy-practice and means-ends decoupling) from the perspective of university employees. Thus, this research chose NESU to explore these issues because evidence suggests that universities within this context struggle to move ES beyond the implementation phase. Also, there is limited primary research in this context. The background of this research led to the formulation of four interrelated research questions.

8.1.1. RESEARCH QUESTION ONE - WHAT FACTORS CONTRIBUTE TO THE POLICY-PRACTICE DECOUPLING OF ES IN NESU?

This investigation aimed to establish the factors that further the policy-practice decoupling of ES in NESU. Institutional theory was adopted as the theoretical foundation underpinning this research goal. This theory was deemed suitable for this research because it provides a structured analytical frame for capturing the multi-faceted and complex nature of practice decoupling (see section 3.5). Policy practice is a typology of decoupling identified within the institutional theory, and it is defined as the inconsistencies between policies and the implementation of programs.

The results of this investigation (sections 6.1. and 7.1.) show that policy-practice decoupling of ES in NESU is fostered through causal indeterminacy (bounded rationality), fragmentation of the external environment, internal fragmentation, task compartmentalisation and outsourcing. This investigation suggests that Bounded rationality led to policy-practice decoupling of ES. This result leads to the conclusion that policy-practice decoupling of ES will occur when,

- a) Employees observe contradictions in the implementation of ES practices,
- b) There is misinformation about how to undertake environmental actions effectively and correctly, and,
- c) There is a lack of ES communication from relevant departments (see sections 6.1.1. and 7.1.).

Fragmentation of the external environment (sections 6.1.2 and 7.1) found in this investigation shows that NESU adopts a window dressing approach to ES. They avoid public scrutiny by disengaging with green rankings under the guise that they do not trust metrics used by ranking bodies in assessing the ES performance of universities. Thus, this research concludes that Policy-practice decoupling of ES occurs when a university,

- a) Keeps or maintains a low external profile on ES,
- b) Fails to measure up or imitate successful sector peers and

- c) Has no pressure from normative and conceive stakeholders (e.g. staff, students, alumina and business partners/clients, government, NGOs, etc.)

Internal fragmentation contributes to policy-practice decoupling of ES in NESU (see sections 6.1.3. and 7.1.). Internal factors are utilised to distance policy from practice, including the absence of leadership, inadequate policy and strategy, lack of implementation structure, and lack of employee engagement and centralisation. The most exciting result amongst these findings shows that ‘centralisation’, such as when ES planning, responsibilities, decision-making, and control are exclusively concentrated in one department (e.g. central services or estates department), leads to policy-practice decoupling.

Furthermore, one of the more significant findings to emerge from this study is that ‘Outsourcing’ ES activities to third parties without close inspection or monitoring from the university to ensure service providers deliver quality execution results in policy-practice decoupling (6.1.5 and 7.1). The research has also shown that compartmentalising ES tasks or duties leads to Policy-practice decoupling (see sections 6.1.4 and 7.1.). This involves a) compartmentalising tasks into administrative (duties that help maintain a positive image) and operational side ((includes the day-to-day energy management, waste management and staff engagement), and b) Giving priority to fulfil the administrative tasks because it enables fulfilling of regulatory obligations and avoiding deeper scrutiny and close inspection.

8.1.2. RESEARCH QUESTION TWO - WHAT FACTORS CONTRIBUTE TO THE MEANS-ENDS DECOUPLING OF ES IN NESU?

This research also sets out to uncover ‘what factors further means-ends decoupling of ES in NESU’. Guided by institutional theory, the primary data (sections 6.2. and 7.2.) confirmed that through goal ambiguity, culture, underestimation (human and financial resources), exiguous technical infrastructure and accidental decoupling, NESU further means-ends decoupling of ES. The results of this investigation led to the following conclusions:

- a) Goal ambiguity, such as having no clear performance targets, indicators, or baselines for ES, leads to means-ends decoupling (see sections 6.2.1 and 7.2).

- b) The culture of Communication, including 1) the content, tone and language used in messages communicating about ES, 2) the frequency of message transmission and 3) the sender/encoder of ES messages, if not carefully managed, leads to means-ends decoupling (section 6.2.2 & 7.2).
- c) Means-ends decoupling occurs when a university's orientation and reward framework is disconnected from ES.
- d) Means-ends decoupling of ES occurs in a work climate of individualism, where the university culture normalises employees working independently, in isolation, and with little or no interaction with peers.
- e) Means-ends decoupling occurs when the human resources dedicated to developing and sustaining the ES initiatives lack the necessary quantifications (in sustainability and environmental management) and people management expertise to deliver on and influence employees toward the practice (see sections 6.2.3 and 7.2).
- f) The absence of technological infrastructures to complement or drive behavioural change furthers means-ends decoupling of ES (see section 6.2.4).
- g) Factors outside the control of an organisation, such as unforeseen circumstances or events which occur unexpectedly or abruptly, can force means-ends decoupling of ES (see section 6.2.5)

8.1.3. RESEARCH QUESTION THREE - HOW CAN NESU, BY LEVERAGING THE PERSPECTIVES OF UNIVERSITY EMPLOYEES, REVERSE ITS CURRENT DECOUPLING PRACTICES AND ENABLE THE TIGHT COUPLING OF ES INTO DAILY ROUTINES AND CULTURE?

The third objective of this study was to investigate how NESU can reverse its current practice of decoupling and tight-coupling ES into the institutional culture and the daily routine of staff members. The NPT proposed by May et al. (2009) was adopted as the theoretical lens for categorising and interpreting findings relating to tight coupling of ES. This theory is a good fit for this research because it makes theorisations about practice embedding and integration. This study aimed to understand how ES tight coupling into the culture and daily routine of institutional members can be achieved at NESU.

NPT also offers a simplified yet open lens for capturing emerging cultural factors (see section 4.5.) This primary investigation (sections 6.3. and 7.3.) has shown Coherence, Cognitive Participation, Collective Action, and Reflective Monitoring process as effective for tight coupling ES into the culture of NESU. Thus, the conclusion of this research is that,

- a) Through communal specification, individual specification, and differentiation, coherence can be fostered around ES, leading to its tight coupling into culture (see sections 6.3.1 and 7.3.1).
- b) Activation- ES Citizenship Behaviours and initiation are required to garner staff cognitive participation with ES (see sections 6.3.2 and 7.3.2).
- c) Interactional workability, contextual integration, leadership, and GHRM are pivotal to garnering collective action for ES (Section 6.3.3 and 7.3.3).
- d) Reflective monitoring, including communal appraisal, individual appraisal, and reconfiguration, is required for ES to be tightly coupled to the culture of NESU (Sections 6.3.4 and 7.3.4).

8.1.4. RESEARCH QUESTION FOUR - WHAT BARRIERS MIGHT HINDER NESU'S EFFORTS AS IT STRIVES TO TIGHTEN THE COUPLING OF ES INTO ITS CULTURE?

The final goal of this research was to determine what barriers can hinder NESU's efforts as they seek a more significant tight coupling of ES into institutional culture. Empirical research on barriers to culture change was reviewed (section 4.6.). This resulted in identifying eleven potential obstacles to ES tight coupling into a culture. The primary data, however, revealed, in the context of NESU, three main barriers to ES tight coupling into the culture. These are individual/psychological barriers, systemic barriers, and resource constraint barriers (see section 6.4. and 7.4).

This data shows that as NESU seeks to tight couple ES, they will encounter behavioural constraints such as lack of interest, capability, and busy schedule, threatening their efforts. Furthermore, systemic issues such as high work pressure will threaten to impede tight coupling efforts. Resource constraints,

specifically, lack of funding to sustain ongoing successful ES projects, schemes and initiatives, will prevent NESU from continuing environmental initiatives long enough to achieve tight coupling.

8.2. Research Contributions to Knowledge

This research claims two-fold contributions to knowledge, including filling gaps in existing literature and contribution to theory (institutional theory and NPT).

8.2.1. Research Contributions to Literature

This research significantly advances knowledge in ES within universities by addressing critical gaps identified in the existing literature (Section 4.7).

1. **Deepening Understanding of ES Embedding:** This study surpasses existing research, which primarily focuses on ES implementation. It delves deeper by investigating "tight coupling," a state where ES becomes embedded within the fabric of university culture, influencing daily routines and activities. This approach provides a richer understanding of how ES is embedded within universities, moving beyond a superficial implementation focus.
2. **Unveiling Organisational Dynamics of Decoupling and Tight Coupling:** Current research often lacks a nuanced understanding of the organisational factors that influence the success or failure of ES initiatives. This study contributes significantly to this area by examining policy-practice decoupling, means-ends decoupling, and tight coupling of ES in the context of NESU. The empirical findings offer a fresh perspective on these dynamics, providing valuable insights into the interplay of organisational structures and processes with environmental sustainability outcomes.
3. **Developing a Cohesive Theoretical Lens:** While institutional theory and NPT are utilised in the field of ES, their combined application has been limited. This research pioneers using these theories as a cohesive lens for examining ES in a university context. This framework sheds new light on factors influencing decoupling and tight coupling, such as centralisation, outsourcing,

technology limitations, and "environmental sustainability citizenship behaviours" (voluntary actions promoting ES).

4. **Enriching NPT by Identifying New Sub-Factors:** NPT identifies key constructs for practice embedding. This research expands upon NPT by identifying new sub-factors, such as "environmental sustainability citizenship behaviours," contributing to core constructs like cognitive participation. This advancement underscores the importance of integrating informal, voluntary actions into formal sustainability initiatives, fostering a more holistic approach to cultural change.
5. **Focusing on the Role of GHRM in Supporting NPT:** Existing research lacks a clear connection between NPT and GHRM. This study highlights the crucial role of GHRM in supporting collective action, a critical factor for sustaining ES practices within universities. This link strengthens the theoretical foundation of research and provides valuable insights for future investigations into the interplay between HRM practices and ES initiatives.

In conclusion, this research addresses critical knowledge gaps and strengthens the theoretical foundation for understanding ES within universities. It offers valuable insights for future research and provides practical guidance for policymakers and change agents seeking to cultivate a culture of ES within their institutions.

8.2.2. Research Contributions to Institutional Theory

This research significantly strengthens institutional theory's explanatory power in understanding ES within universities by addressing two crucial aspects of decoupling: policy-practice decoupling and means-ends decoupling.

1. **Deepening the Understanding of Policy-Practice Decoupling:** Institutional theory traditionally highlights the potential disconnect between formally espoused policies and actual practices (decoupling). This research delves deeper by identifying previously unexplored internal factors that influence the degree of decoupling in the context of university ES

initiatives. Specifically, it sheds light on the crucial roles of centralisation, outsourcing, and task compartmentalisation. These findings advance an understanding of how internal organisational fragmentation can significantly impact the effectiveness of implemented ES practices. By highlighting these internal dynamics, the research offers valuable insights for policymakers and university management seeking to bridge the gap between policy pronouncements and practical implementation of ES initiatives.

2. **Enhancing the Explanation of Means-Ends Decoupling:** Institutional theory has primarily focused on how external pressures for isomorphism (conformity to prevailing standards) can lead to adopting formalised practices that may not necessarily translate into desired outcomes. This research broadens this perspective by demonstrating how technology limitations can contribute to a form of means-ends decoupling in university ES practices. Furthermore, the university sustainability manager's unforeseen departure illustrates how unexpected events beyond an organisation's control can disrupt the alignment between means (practices) and ends (goals). These findings offer critical insights into the factors contributing to the compartmentalisation of ES practices, ultimately hindering the achievement of core sustainability goals. This underscores the need for a more integrated approach to university management and policymaking, ensuring alignment between practices and core ES objectives.

Overall, this research expands the conceptual boundaries of institutional theory by illuminating previously unexplored internal factors influencing decoupling within universities. The findings provide a more nuanced understanding of the challenges of translating ES policies into effective, sustained practices. In terms of informing practice, these findings highlight the importance of considering internal and external contextual factors to ensure the successful tight coupling of ES initiatives.

8.2.3. Research Contributions to NPT

This research advances the burgeoning practice embedding and normalisation field by illuminating the pathways towards achieving tight coupling of ES within university cultures. Employing the NPT as a robust theoretical lens, the study sheds light on the crucial mechanisms for fostering this critical integration of ES practices.

The first contribution lies in fortifying the theoretical foundations of NPT. The research confirms the continued relevance of NPT's core constructs: coherence, cognitive participation, collective action, and reflective monitoring, but it also provides valuable empirical validation for their application in the context of university-based ES initiatives. This validation strengthens the NPT framework by demonstrating its effectiveness in elucidating the processes by which ES practices become embedded within complex organisational settings. Furthermore, the research underscores the criticality of each construct, highlighting the necessity of cultivating a shared understanding of the imperative for ES (coherence), widespread individual buy-in and engagement (cognitive participation), collaborative efforts directed towards sustainability goals (collective action), and continuous evaluation and refinement of practices (reflective monitoring) for successful ES tight coupling.

The second contribution is enriching NPT's explanatory framework by identifying new sub-factors. The research delves deeper by identifying "environmental sustainability citizenship behaviours" as a sub-factor contributing to the core construct of cognitive participation and 'GHRM' a sub-factor of collective action. This finding is unique because it expands the scope of NPT by acknowledging the significance of informal, voluntary actions undertaken by individuals and HRM practices in supporting collective action for sustaining ES initiatives within universities. This adds to practice embedding and normalisation as it reveals the potential for harnessing personal initiatives and HRM practices that promote ES to cultivate a more widespread understanding and commitment to ES within universities. This advancement broadens the applicability of NPT by recognising the multifaceted nature of achieving cognitive participation and collective action.

In conclusion, this research transcends mere confirmation; it actively strengthens the theoretical foundation of practice embedding and normalisation. This research actively unpacks the mechanisms for achieving tight coupling of environmental sustainability (ES) within universities, highlighting the critical interplay of formal and informal actions alongside effective human resource management practices for successful Tight coupling of ES initiatives into institutional culture.

8.3. Research Contributions to Practice

This study unveils a critical challenge in achieving environmental sustainability (ES) within universities: superficial adherence. NESU exemplifies this challenge by employing a symbolic approach to ES. They enact a limited number of structural changes, creating a façade of environmental responsiveness. These tokenistic implementations serve a strategic purpose: to cultivate legitimacy among stakeholders by projecting an image of ecological responsibility. However, this approach neglects cultivating a genuine commitment to ES within operational practices and employee behaviours. Daily activities proceed primarily devoid of any conscious consideration for environmental impact.

This research takes a solution-oriented approach, progressing beyond problem identification. It offers a practical toolkit for universities like NESU to bridge the gap between ES policy and practice. By dissecting the shortcomings of NESU's current approach, the study equips decision-makers with a roadmap for abandoning ineffective practices. The research pinpoints specific, controllable factors contributing to policy practice and means-end decoupling. This actionable knowledge empowers university management to implement readily rectifiable solutions and pursue a more impactful path towards achieving genuine ES.

For instance, the research pinpoints NESU's failure to create a robust framework of supporting structures, systems, and processes as the primary cause of the observed decoupling. This deficiency stems directly from management's shortcomings in fulfilling its oversight responsibilities. Effective oversight necessitates ensuring a high-quality manifestation and adoption of ES principles across all university levels and departments. In response, the conceptual framework proposed within this research

advocates for implementing tailor-made strategies designed to tightly couple ES with both the overt and covert aspects of NESU's culture.

A crucial contribution of this research lies in its actionable recommendations for policymakers. Here, the study highlights key questions that should guide self-reflection:

- What is the current cultural context within NESU, and does it facilitate the attainment of effective sustainability practices?
- What internal and external organisational workings, encompassing informational, strategic, and operational dimensions, contribute to the emergence of ES disconnects within the university system?
- Do the necessary infrastructures (human resources and technological resources) exist to support effective ES implementation? If not, what actions are required to move forward?

By identifying context-specific barriers to cultural transformation within NESU, this study not only informs but also empowers sustainability managers to formulate impactful planning and strategising initiatives. The research offers a roadmap for universities seeking a more tightly coupled relationship between ES and university culture, instilling confidence in the ability of sustainability managers to lead this transformation.

8.4. Recommendations for NESU

This research transcends problem identification by offering a practical roadmap for universities seeking to achieve tight coupling of ES into their institutional culture. The findings decisively demonstrate the reversibility of policy-practice and means-end decoupling, providing a framework for bridging the gap between ES policy and enactment. Sustainability managers are empowered to adopt and implement the suggested strategies for cultivating coherence, cognitive participation, collective action, and reflective monitoring. By translating these theoretical constructs into actionable directives, this research equips NESU with the knowledge necessary to initiate a transformative journey towards a deeply embedded culture of ES, providing reassurance and guidance in the process.

The proposed recommendations target NESU's current approach and foster a more impactful integration of ES principles within the university's institutional fabric.

1. **Information Dissemination:** NESU is strongly encouraged to establish robust systems for capturing and disseminating ES information. Regular, multi-channel communication strategies are essential. By establishing robust systems for capturing and disseminating ES information, NESU can cultivate widespread awareness and understanding of its ES initiatives. This multi-channel communication strategy should leverage social media, emails, campus displays, university publications, events, radio broadcasts, staff societies, and club networks.
2. **Contractor Management:** Outsourcing ES tasks requires vigilant monitoring of service providers to mitigate policy-practice decoupling. NESU should prioritise close oversight of contractors entrusted with frontline ES duties. Regular assessments should ensure compliance with established protocols and the delivery of high-quality outputs. In collaboration with HR personnel, sustainability managers should integrate ES considerations into the contractor selection and bidding processes. Selection criteria should assess contractor proficiency in university-specific ES expectations, goals, and standards. NESU should establish mandates that require contractors to demonstrably train their on-campus personnel in the university's ES culture.
3. **Scenario Planning:** To bolster the resilience of environmental sustainability (ES) programs, NESU's sustainability managers should actively engage in annual scenario analysis. This proactive approach necessitates systematically exploring potential vulnerabilities within the university's systems that could negatively impact the progress or success of ES initiatives. By anticipating these unforeseen disruptions, sustainability managers can formulate robust contingency plans. These pre-emptive strategies will equip NESU to effectively mitigate challenges and safeguard the continued progress of its ES programs.

4. **Financial Sustainability:** This research underscores the disruptive potential of funding bodies shifting priorities with each funding cycle, jeopardising the continuity of successful environmental sustainability (ES) projects. To mitigate this challenge, NESU should prioritise the internal financial sustainability of such initiatives. Integrating budget allocations for ES projects into the broader university financial planning will lessen reliance on external grants. A critical element of this strategy involves conducting financial feasibility studies at the outset of each ES project. These studies facilitate the development of long-term recurrent expenditure plans, ensuring project continuity and circumventing premature abandonment.
5. **Employee Engagement:** To foster a culture of ongoing environmental citizenship among faculty and staff, NESU should actively implement engagement programs. These programs should acknowledge and reward positive contributions towards ES. Recognising individuals who actively champion conservation principles is crucial to this strategy. NESU can then strategically recruit these individuals as change agents. By providing them with support and resources, they can act as cultural liaisons with their colleagues, fostering a culture of ES within the university. Reconnecting with these individuals through a revived ES action committee offers a valuable opportunity to cultivate a network of internal consultants and thought leaders on sustainability matters.
6. **Strategic Alignment:** A critical policy priority for NESU should be the unequivocal articulation of its commitment to ES. ES objectives must be comprehensively integrated into the university's core strategic documents and policy frameworks to achieve this. This strategic alignment will demonstrably illustrate NESU's dedication to fostering a culture of environmental responsibility across all university functions.
7. **External Engagement:** To cultivate a dynamic environment of continuous learning and knowledge exchange in the domain of ES, NESU should strategically enhance its interaction with external stakeholders. This proactive approach necessitates actively engaging with ES ranking bodies, participating in established ES reporting initiatives, and organising a diverse

range of ES-focused events such as conferences, symposia, and green fairs. Additionally, fostering collaborative partnerships with other universities presents a valuable opportunity to facilitate the exchange of knowledge and best practices. By embarking on these initiatives, NESU can leverage the collective expertise of the broader sustainability community, accelerating progress towards achieving its shared sustainability objectives.

8. **Perseverance and Commitment:** This research underscores the importance of unwavering perseverance for NESU to achieve tightly coupled ES. To cultivate a sustainable university culture, NESU must demonstrably commit to a long-term course of action encompassing structural and behavioural transformations. A failure to embark on this transformative journey can have many detrimental consequences. These consequences include impeding progress towards mitigating climate change, fostering adverse work environments characterised by low morale and potential disengagement, incurring increased operational costs associated with inefficient practices, and exposing the university to heightened legal risks. Ultimately, a lack of perseverance in achieving tightly coupled ES can damage NESU's institutional image, portraying the university as lagging behind its peers in its commitment to environmental responsibility.

8.5. Summary of the Limitations of The Research

This multi-case study successfully achieved its research objectives. However, acknowledging inherent limitations in qualitative research design is crucial. Recognising these limitations fosters a transparent understanding of the study's scope and paves the way for future research directions. One fundamental limitation of the research lies in the inherent trade-off between depth and breadth in the chosen exploratory multi-case study design. While examining two universities provided valuable insights into diverse contexts, it could have compromised the depth of analysis within each case. The research employed a focused interview strategy, meticulously tailoring questions to specific areas of investigation. This approach facilitated the gathering of rich data despite studying multiple cases.

Another limitation concerns the exploratory paradigm. While it facilitated initial understanding, definitive testing and verifying explanations remain challenging. Data interpretation issues are addressed using member checking, which involves participants directly reviewing and verifying the accuracy of their data after the researcher interprets it. The researcher sought feedback and validation from relevant experts to ensure the findings' robustness.

The study acknowledges generalizability limitations due to the two-university sample and the single data collection point (March 2017 – August 2017). However, the research emphasises the transferability of its findings. The rich qualitative data offers valuable insights that other universities can adapt and apply within their unique contexts. Furthermore, future longitudinal studies are needed to explore how the identified factors evolved.

The chosen theoretical framework, NPT, has limitations in data analysis. The pre-determined themes could force data into rigid categories. To address this limitation, the researcher employed a flexible coding approach. During analysis, codes emerged organically from the data, with NPT themes used for supplementary interpretation. Furthermore, the research prioritised clear definitions of all NPT constructs, minimising the risk of misinterpretations during analysis. This research Recognizes the potential influence of the researcher's values on the methodological approach (see section 4.15), and the study employed several strategies to ensure research objectivity. These strategies included frequent debriefing sessions with supervisors facilitating open discussions about potential biases. Peer scrutiny through conference presentations and examiners' feedback also strengthened the findings' objectivity.

In conclusion, while acknowledging these limitations, this study employed various mitigation strategies to enhance the robustness and trustworthiness of its findings. These strategies contribute significantly to the overall quality of the research and offer valuable insights for future endeavours in the field of ES within universities.

8.6. Suggestions for Further Research

This research delved into the inner workings of NESU by applying a specific lens of institutional theory-decoupling. However, this targeted approach presented a limitation. By focusing solely on decoupling, the research omitted the equally important concept of isomorphism within institutional theory. Isomorphism explores how organisations conform to institutional pressures, potentially providing insights into NESU's sustainability practices. This limitation, however, opens doors for exciting future research opportunities.

One such avenue explores the simultaneous examination of isomorphism and decoupling of sustainability across all Scottish universities. By comparing these findings with the present study, future research can illuminate how these factors evolve. Additionally, a more comprehensive comparative perspective could explore potential differences between factors in Scottish universities and those in other UK regions and sectors. Furthermore, employing a mixed-methods approach would allow for empirical testing and identification of the most influential factors associated with isomorphism, decoupling, and tight coupling outcomes.

Expanding the research scope to include students through broader samples can offer a more expansive view of this phenomenon. This research also suggests further investigation into specific areas; for instance, the impact of outsourcing on integrating ES into institutional culture warrants further exploration. Additionally, uncovering other occurrences that may lead to accidental decoupling presents a valuable research avenue. Furthermore, examining the intersection of GHRM and ES citizenship behaviours within universities holds promise. Finally, future research can explore the concept of decoupling and tight coupling in the context of social and economic sustainability dimensions, enriching our understanding of these practices across a broader spectrum.

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Appendices

Appendix 1: Participant Information Sheet



Project Title:

Decoupling, Tight Coupling and Barriers to Sustained Culture Change for Environmental Sustainability in North-East Scottish Universities

Purpose:

This research is being conducted as part of the primary research for a Doctoral degree in Management.

What is this research project about?

The purpose of this research is to establish tailored solutions that can aid in the effective and sustained tight coupling of ES, as well as to identify the ways in which decoupling and culture barriers impact ES embedding into NESU institutional culture.

What will you have to do, and how long will it take?

Participation in this research is entirely voluntary, and if you are willing to participate, the interview will take a semi-structured approach and will last between 30-40 minutes. Your response will be recorded and held confidential. Please suggest a convenient date, time, and preferred ideal location, and I will do well to attend. You will be asked to give consent prior to the interview and may also be asked to provide consent at a later stage. If, after the interview, you no longer wish to participate, you are free to do so without giving a reason, and any data obtained from you will be destroyed.

What will happen to the information collected?

The researcher will use the information collected to write a dissertation for her Doctoral degree. Only the researcher and supervisor will be privy to the notes, documents, recordings, and paper written. Afterwards, notes and documents will be destroyed, and recordings will be erased. The researcher will keep transcriptions of the recording but will treat them with the strictest confidentiality. No participants

will be identified in the publications, and every effort will be made to protect the participants by disguising their identities.

Declaration to participants

If you take part in the study, you have the right to:

- Refuse to answer any question and to withdraw from the study at any time (including after the interview has been completed).
- Ask any further questions about the study during your participation.

Who's responsible?

If you have any questions or concerns about the research, either now or in the future, please feel free to contact either:

Researcher:

Maureen Kehinde

Research Room 540

Aberdeen Business School

Robert Gordon University

Garthdee Road, Aberdeen AB10 7QE

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Or Supervisor:

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Appendix 2: Consent form

Decoupling, Tight Coupling and Barriers to Sustained Culture Change for Environmental Sustainability in North-East Scottish Universities

Consent Form for Participants

I have read the **Participant Information Sheet** for this study and have had the details of the study explained to me. My questions about the study have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I also understand that I am free to withdraw from the study at any time or decline to answer any questions in the study. I know I can withdraw any information I have provided up until the researcher has commenced the analysis of my data. I agree to provide information to the researchers under the confidentiality conditions set out on the Participant Information Sheet.

I agree to participate in this study under the conditions set out in the **Participant Information Sheet**.

Signed: _____

Name: _____

Date: _____

Researcher:

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Appendix 3: Interview Guide

Introduction

1. Please tell me what your role here at this university is.
2. How long have you been employed at this university?
3. What do you understand by environmental sustainability?
4. How do you see your university implementing environmental sustainability?

Theme 1: What factors further policy-practice decoupling of ES in NESU?

5. Do you think your university is typical of others in the sector in their practice of ES? (If so, please tell me how.)
6. In what ways do you find the university deviating from its ES strategy?
7. In what ways have you experienced separation/disconnect between the university policy and its practice of ES?

(Interviewer notes: ask participants for specific examples of areas of ES practice)

Theme 2: What factors further means-ends decoupling of ES in NESU?

8. What impacts have you seen or experienced since the university started its implementation of ES?
9. What do you think is preventing intended outcomes from being realised for ES at this university?

Theme 3: How can NESU reverse the current practice of decoupling and tight-couple ES into the culture and the daily routine of institutional members?

10. What advice would you give for how the university can better tight couple or embed ES to become the core of its culture?
11. What do you think can be done by the university to improve the coherence (understanding) of ES practices among organisational members?
12. In your view, what can be done to encourage the buy-in, commitment, and participation of institutional members in ES?
13. What do you suggest the university does to mobilise collective action for ES from all employees?
14. What do you think can be done to enhance the monitoring of ES in this university?

Theme 2: As NESU seeks greater tight coupling for ES, what are the barriers that can hinder its efforts to tight-couple ES into its culture?

15. In your view, are there barriers you think will seriously hinder efforts to tight couple/embed ES into the culture of this university?

Appendix 4: Sample of Interview Transcript

Participant Overview

S/N	Respondent initials	University	Role	Length of employment with the university	Gender	Interview Time and Duration
R1	AO	B	Academic Researcher	4 years	Male	4 pm, 1hr 18mins

Hello, my name is Maureen Kehinde. As I informed you earlier, as part of my PhD study, I am conducting a study to gain insight into the ways decoupling and cultural barriers impact ES at your university. The ultimate goal of this research is to understand better ways universities in the North-East Scottish Region can sustain the tight coupling of ES into their culture. There are no right or wrong answers; your views are all that matter. Any data collected from you today will be held in strictest confidence. I assure you that any information obtained from you will be used solely for research purposes. I also guarantee that your data will be stored securely, and for added peace of mind, I will not require you to disclose any personal or identifying information. Once again, I appreciate your taking the time to help me by granting me this interview. Please confirm again that you are happy for me to continue this interview.

Introduction

1. Please tell me what your role here at this university is.

Err, at the moment, I'm a lecturer and research assistant. I have been working on different projects, and err, I have completed three projects already and err then the fourth one. And err the two, two of those projects are based on err consumer behaviours which have to do with green and ethical behaviours and err the third one has to do with err student's experience that is students transferring from colleges to universities; we try to understand their difficulties, their anxieties and their challenges when moving to the university. So, that is my role at the university.

2. How long have you been employed at this university?

Err, I did my MSc here, and after the MSc, I am now working here, so if I exclude my MSc period, I have been here since 2013.

3. What do you understand by ES?

That's a very tricky question, you know. Err, the reason why it is tricky is this: we don't really know the accurate picture of what is going on or the extent of damage we've done to the environment. It isn't easy to quantify, though people who talk about climate change will speak about global warming. Still, most of the findings so far are based on simulations, and my own sentiment is this: is to what extent can we rely upon these stimulations? However, we can say that we have some evidence of Err climate change or global warming, like Err melting ice, sea levels, Err rising, and all these famines in Africa and some other developing countries. But suppose you look at the issue of the world. In that case, these problems have been with us since the inception of the world, so I don't see anything new. Hence, it's just that, Err, the earth is repeating itself, repeating what has happened in previous ages, and that's what we are experiencing now. So, if you say I believe in it, the main reason why I will say I believe in institutional theory is that, err 1) not because I want to conserve or preserve something for future generations because I don't know what the future generation might need so it's very difficult for me to plan for them. Still, the reason why I say I believe in it is that Err, we are taking too many resources away from the soil or the earth, and because of that Err, we are shooting Err the earth's capacity beyond its reach. At the end of the day, it may have a detrimental effect on us, and err; I will not talk about the future generation anyway; I will focus my attention on the present generation because, Err, there are so many people still struggling, there so many people still suffering, there are so many people still confronting with or confronted with so many disease and problem we should care for them rather than taking a bow for the future generation. Err, I believe that it is important, but it depends on what we define or what we mean by sustainability and the way we look at it. I believe in sustainability, and I believe in environmental sustainability. Still, the way people are constructing the word sustainability these days, Err, is making me lose my faith or my belief in sustainability. Err, when people talk about sustainability, especially at the corporate level, to me and to my own understanding, err is a means of err, let me say it's just a marketing strategy, you know, err, to influence consumer behaviour or to persuade a consumer that err what we are selling is ethical. Yes, you will say that if I believe in sustainability, I do. If you say I believe in environmental sustainability, then yes, I do.

4. What are the ways in which you see your university implementing ES?

If I want to be sincere, I will say nothing. Err, I will say no initiative. Err, the car-sharing scheme, we have a car-sharing scheme. The car sharing scheme Err is not well publicised, and I am not sure whether the number of I don't know a number of people that are aware of the car sharing scheme and Err am not sure the level of information that is out there for people to sign for the scheme. So, I won't say that err the scheme is effective. Err, I don't know much about it. Though there is err, there was a time when

I was planning to research it, and I asked for data, and they couldn't provide err the data that I requested for.

Another thing that has to do with waste management is that I think it's been promoted by the student union. Err, but mainly they are focusing more on food waste in residential hostels and err, I think it's just because of the approach of the [...] city council because they are focusing on students' approach to food waste and how to minimise food waste. I think that is motivating the [...] Union, you know, to do something in that perspective. Still, if you look at ES as a broad topic, I will say that this university has not been doing anything serious when it comes to ES.

5. Do you think your university is typical of others in the sector in their practice of ES? Sustainability?

As I have just said, nothing much is going on when it comes to environmental sustainability at this university or at least for the time being, so comparing this university with other universities, I think we rank really poorly; err, yet again, this is purely my own assessment of things.

6. In what ways do you find the university deviating from its ES strategy?

Hmmm, you should ask if we have a strategy in the first place before one can begin to consider how the university is deviating from it. I am not aware of any strategy per se on sustainability, but in terms of policy, I think they have an environmental policy. Err, but I will argue that, Err it's not comprehensive enough. They do have, but it's not comprehensive enough. Err, to me, I think that policy is there to tick a box, that's what I will say, to thicken a box err it's not being implemented err I don't think anybody is following the recommendation inside that policy and when it comes to waste management policy, as a University we don't have a separate policy for waste management and that should be one of the requirements. Err, when it comes to energy and water use, we should have different policies and approaches because these are different behaviours that affect people differently. You can see that energy and water affect everybody in the university, but waste does not affect everybody in the university. There will be some people in this University who are not generating any waste, so we should have a set of approaches for different behaviours in order to achieve the level we want to be sustainability-wise.

7. In what ways have you experienced separation specifically between the university policy and its practice of ES?

Well, you know, we see this sort of disconnect every day. For example, there is, err, a significant disparity between what the university claims it wants to do in sustainability research and what it actually

ends up doing; several times, I tried to get information, you know, about sustainability, research, err funding you know, from the climate change fund given to university or I mean, if I can be part of the team but I heard nothing back so I decided to stop. I am also doing research on the waste management approach at this university. I have conducted a kind of site observation; you know, I have visited every building in this university. I have looked at the facilities we have, it's the same thing in each building you will discover that bins are there, there are wrongly labelled, bins are there, there are wrongly positioned, bins are there, and you will see a different poster on top of that bin something that is not relevant to waste management, something that is not relevant to sustainability rather than putting a poster that is not relevant to what is going on underneath, they should put signage that is informing people that okay come that we have a bin here this is the kind of waste that is going on there or else you'll them put-off you know what I think the university did is disassociate itself from all those sustainability affiliations, this way err those bodies cannot come and check on them and they get away with it. You know, as I said before, I don't know the university strategy or the university plan; err, these are the things they can make money from, these resources they are not waste, you know, we have waste contractors; waste contractors will come pick these materials and go, and we are paying these contractors to collect these materials. Why are we giving these people these resources and even giving them money to take the resources away? They are going out there to sell these resources and make money for themselves? So why do we not have a waste management unit, you know, a business-oriented unit? However, the university may be saying that the money is small, but to me, every little helps; we give jobs to certain people, they deal with separating all these waste streams, and will find a market for them like wastepaper, tonnes of wastepaper are being shipped out of this university every week, every month those are the kind of things that the university can make money from, we are given these resources to someone else to make money from. So, I really do believe the university tries to distort reality around ES; there is a general Lack of knowledge about what is going on because information and communication are not provided, which is encouraging the disconnects we see in the practice of ES. For energy use, for example, if you don't have information on how, let's say, ok, let me step out of my knowledge about sustainability, let's say I do not know about sustainability, I don't know how to reduce energy use, I don't know how to reduce water use, even I don't know to talk to my colleague to do the same, it will be very difficult for me to do without any information or any awareness about it you know.

8. What impacts have you seen or experienced since the university started its implementation of ES?

As I already said, the reality here is that we have a long, long way to go in driving environmental sustainability as the mainstream activity of this university. So, from where I stand, much can be done; however, I will give some credit, you know, with what is going on so far, like, err, well, I suppose there are some good buildings. However, I mean, there is still a lot more to do, but err, the university, I mean, can be more ambitious about the sorts of results you know what they want to achieve. Some of these indicators need to go beyond saving costs or meeting the legal requirements of what we do; we still need to create an impact, especially around influencing people, you know, their attitude and behaviour, to practice some of the things we are promoting.

9. What do you think is preventing intended outcomes from being realised for environmental sustainability in this university?

Well err let's talk about the leadership in the University err I think the problem with the management is that err it's not only in this University, I think it's a, it's a work place thing you know, the responsibility of sustainability you know is being shouldered by those who have no experience or no qualification in sustainability or in environmental management you will discover that err the environmental management of this University, and sustainability efforts of the University is being championed by estate or facilities department and err don't get me wrong, err education may not contribute or may not be a significant factor in determining whether people will engage in sustainability or not but those who will manage sustainability should have some kind of degree or qualification in sustainability or in environmental management if they don't, how will they manage people in a sustainable way, how will they pass the sustainability information across to the people, how will they initiate sustainability scheme or sustainability project in the University. I think what this University can do is err apart from giving the estate that responsibility; there should be a member of staff, you know. When I say a member of staff errs, it might be teaching staff or non-teaching staff that is educated to a certain level within environmental management or sustainability management. I think by then, we can provide good leadership and a good direction for the sustainability or environmental management initiatives at the university. Let's look at err energy, for example, err initially we need to invest in technologies to support that which means we have to install err censored lights, you know in every room whereby when people leave that room when the room is empty within 5mins or 3 seconds or there about light is off completely We have censored lights, we have LED, and so on we have all this kind of new technologies now that we can use to reduce our energy bills. Still, we have to invest at the initial stage, and universities may not want to do that; they are not doing enough to back up with technology. So, the

initial investment may be preventing them from using technological approaches to change human behaviour.

10. What advice would you give for how the university can better tight couple or embed ES to become the core of its culture?

I think what we call ground rooting should be done. Err ground rooting means that err looking at what we have what we have done and then trying to draw a baseline so by the time people are talking about environmental sustainability in front of the University, you will be able to draw a kind of comparison between the two because, err I did that in my own research, I visited some organisations, and I discovered that err what people in that organisations are saying about sustainability, about environmental management is not a true reflection of what is happening in that organisations you know. As I said, the University may provide everything we need, you know, to be used in a sustainable way. Another question is whether people are using those facilities or those resources. Are we complying with the Err University strategy or the university's Err approach to sustainability, and how many people are aware that the university has this strategy somewhere you know? Those are the things you can do. Go to the university website and review what they have in terms of sustainability or environmental management. I think you will be able to get Err good information about what the University has done, what they are doing and what they are trying to do. To the best of my knowledge, err Estates is the department championing this err sustainability. We have many lecturers, many academic lecturers who are doing research in sustainability, but I don't know their level of involvement in the University's sustainability effort. Well, I suppose one area to emphasise concerns the quality of managers we allow to be in charge of sustainability initiatives at this university. I agree that our sustainability manager here has the technical know-how. Still, I don't think he has the people skills, which I believe to be very critical to buy-in people; you know, he and his team, I believe, can be more people-centred in a way, you know, like taking care of the psychological aspect involved with err negotiating their err I mean staff compliance.

11. What do you think can be done by the university to improve members' coherence (understanding) of ES practices?

Communicating and informing people is what I will say: creating values that everyone can relate to. This is what the University should address. Err. I have not seen any email from anybody talking about environmental sustainability, creating a kind of awareness about water use, creating a kind of awareness on energy use, and how to reduce our energy or water consumption. So, on this, I want to say that, err, sharing ideas and information is vital in helping all these initiatives take root. The university needs to take all these communication mediums, as you know, the big screens around the campus, internet portal,

err staff blogs and what not to share more err concrete not assumed ideal realities of sustainability so that err, I mean, we can learn from actual experiences, not those textbook ideals. We have TVs or screens in every building of the university, so why are we not using all this to promote our sustainability efforts? Why are we not using this to advertise what we want to do? At the same time, I said we sent a central emailing system; they send an email out every Friday. Why not include the sustainability effort of the University in those emails so staff and students will be aware of what is going on? And err, another thing they can do if I want to be sincere, is to make it prominent on the University's website; err, if you were are not really really interested in the sustainability approach of this University, there is no way you find information on it. So, you have to dig deep and search every page before you can find it. If they make it prominent, make it one of their cornerstones that this university is sustainability inclined. Then, it is evident on a page that ok if you want any information on sustainability, you just need to go to this page. You will see information about the university's sustainability initiatives. I think those are the little, little things the University can do. They don't need to spend any money, to be honest with you, it's a very cost-effective approach. People should be aware of what is going on. If people are not aware of what is going on, there is no way they will engage in it.

12. In your view, what can be done to encourage buy-in, commitment, and participation of institutional members with ES?

HR, I think, is a significant area or point where any initiative can be passed not only to staff but even to students. Err the reason being that err the first point of contact is the HR department. Anybody who is coming to the University environment or a member of staff has to go through a recruitment department; they are dealing with people, and they can circulate information during induction about environmental sustainability at the university and enrol them on these schemes from the beginning so we may have all these fantastic schemes car sharing and the rest. If we don't enrol people to participate in it, all these schemes will be useless, and the only area or department that can effectively pass that information is HR.

13. What do you suggest the university does to mobilise collective action for ES from all employees?

I don't know if you are familiar with the concept of citizenship behaviour for sustainability; I think we need to borrow the idea from Organ's approach concerning citizenship behaviour. Organ tried to relate organisational setup to a kind of society whereby people are part of that society as citizens; his mindset was that if these people are enrolled or recruited or initiated as citizens of that organisation, there will be a higher level of commitment to engage in any scheme that that organisation is doing. I think the university needs to mobilise collective voluntary actions by motivating people through rewards and such. For instance, I personally do a lot. For example, we have a printing room next door that has lights

on all day long, and every time I pass, I switch the lights off. I have always been very observant with health and safety issues; one time, I noticed an exposed wiring in our office. I quickly reported it to the estates. I am able to do these things because I am intrinsically motivated to do it due to the extensive knowledge, I have gained from researching this area. However, for my colleagues, I think the university needs to create a culture that naturally encourages employees to act voluntarily when confronted with potential breaches in sustainability. So, at a university level, I will say there is no commitment, there is no support to staff, and when I mean staff, I mean both academic and non-academic staff and even students. I will say there is no support whatsoever. Err every initiative, every effort in [...] at the moment as based on individual initiative; I have been to some member of staff offices and many of them will not on their light and when I ask them questions they will say that it is their way of you know contributing to err sustainability or reduce energy use in the University you know those are little little things that we can do at our level not only to help the University, reduce the expenses, energy or water expenses but also to contribute to environmental improvement. So, back to your question, the University should encourage these behaviours.

14. What do you think can be done to enhance the monitoring of environmental sustainability at this university?

Hmmm, we have to commit to environmental sustainability reporting. If we report, then we have the monitor to get data on which to report, so one another will be to set up feedback mechanisms that will allow everyone, and anyone, to have a say about how well things are faring that that, err this is all I can say at the moment.

15. In your view, are there barriers you think will seriously hinder efforts to tight couple/embed ES into the culture of this university?

Err, there is personal-level resistance the university will face. One has to do with trust in the University as an organisation. Also, there is a problem of interest. For example, I need to set my priorities; which one is more important. I have a deadline, you know; I have many things that I need to fulfil within a certain period, so is contributing to the University's sustainability my priority or achieving all these deadlines? That could be one of the challenges err because I have to balance the two together and err at the same time. If you look at the whole setup, to me personally, I will say that err apart from deadlines and my schedule, err I will say naturally, nothing is preventing me from engaging in anything that has to do with environmental sustainability in the University other than motivating myself to create time and interest for it. So, though I personally don't have much of a problem, many colleagues I know do err [short pause]. I may be guilty, though I err, and when I say I am guilty, err naturally; if I want to conserve energy, I need to shut down my computer entirely, but it comes back to my schedule and my

priority again. I am working on a particular file, and I've not finished my work on it; it will be difficult for me to close it. I shut down my computer, but what I will do is lock my screen and switch off my screen. My CP is still working, so it's still using energy, you know. If I want to be 100% in compliance with my values as somebody who is contributing to sustainability, I should be able to shut down entirely. Still, I need to balance my priorities with university sustainability as well.

Interviewer: Thank you very much for your time.

Appendix 5: Open Codes

Open codes	
<p>Code 001: inconsistencies in waste management practices</p> <p>Code 002: disconnect between commercial activities and environmental sustainability principles</p> <p>Code 003: recycling is promoted, but non-recyclable packaging is used for food sold on campus.</p> <p>Code 004: branded reusable bottles and mugs are distributed on campus, but the water fountain does not dispense water to allow people to use the refillable bottles</p> <p>Code 005: organic food and healthy eating are promoted, but food sold on campus is unhealthy for students</p> <p>Code 006: disconnect between environmental concerns and safety</p> <p>Code 007: expectations to include sustainability in teaching without guidance</p> <p>Code 008: food waste reduction is encouraged, but commercial food stalls on campus cook more food than is consumed</p> <p>Code 009: Operational-side and sustainability side of things</p> <p>Code 010: limited information on sustainability research funding & bids</p> <p>Code 011: no available data for researchers</p> <p>Code 012: Misinformation</p> <p>Code 013: wrong/mislabelled recycling bins</p> <p>Code 014: lack of correct information on separating waste</p> <p>Code 015: wrongly positioned bins</p> <p>Code 016: posters on top of bins not relevant to recycling</p> <p>Code 017: stakeholders lack understanding of environmental sustainability operated at the university</p> <p>Code 018: no changes made to commercial activities</p> <p>Code 019: lack of pressure from external sustainability watch organisations like EAUC, P&P, etc.</p> <p>Code 020: waste sorting is promoted, yet general waste bins are situated in strategic areas within hubs.</p> <p>Code 021: people working in the commercial areas lack awareness of the university waste management policy</p> <p>Code 022: lack of environmental sustainability information in the area of water management</p> <p>Code 023: more packaging for products</p> <p>Code 024: commercial area cooks more food than is consumed</p> <p>Code 025: absence of sanction from external stakeholders' university accountable</p> <p>Code 026: universities disengaging with green rankings</p> <p>Code 027: university keeps low profiles</p>	<p>Code 135: HRD should identify things they can materially change</p> <p>Code 136: sustainability colleagues should share an office with colleagues from other departments, so it is easier for them to pass on ideas and information and interact with employees.</p> <p>Code 137: HRD can enrol people to participate in environmental sustainability</p> <p>Code 138: HRD can pass environmental sustainability information across to staff effectively</p> <p>Code 139: Departments should invite staff from other departments to monthly meetings to share information about new developments.</p> <p>Code 140: library staff should be invited to share if new developments have taken place in the library.</p> <p>Code 141: invite HR dealing with crucial issues like environmental safety to talk to staff once a month.</p> <p>Code 142: HRD should provide more information about what they do to support environmental sustainability.</p> <p>Code 143: HR managers should inform staff of how they can be part of what they are doing.</p> <p>Code 144: encourage staff participation in the community garden project</p> <p>Code 145: host charity events on campus</p> <p>Code 146: host trade fairs and sell organic produce from community garden projects</p> <p>Code 147: organise environmental sustainability conferences</p> <p>Code 148: create partnerships with universities that have established themselves in environmental sustainability.</p> <p>Code 149: bring charity organisations into the classroom to share with students how they are solving environmental SDG challenges.</p> <p>Code 150: The sustainability department should branch out and work with policy development, procurement and curriculum colleagues.</p> <p>Code 151: involve in behaviour change programs</p> <p>Code 152: stop treating the sustainability department as a separate entity from other departments</p> <p>Code 153: involved in what is done voluntarily through university and college climate and public bodies duties</p> <p>Code 154: use information obtained from benchmarking other universities to evaluate the efficacy of implemented environmental practices</p> <p>Code 155: Include Sustainability paragraphs in all management group documents.</p> <p>Code 156: have risk register for new capital projects.</p>

<p>Code 028: student union not intrinsically motivated for sustainability</p> <p>Code 029: students not holding the university accountable</p> <p>Code 030: The university does not sign up for sustainability commitment</p> <p>Code 031: universities fail to align with best practice peers in the sector.</p> <p>Code 032: internal processes do not capture sustainability</p> <p>Code 033: no stakeholder engagement mechanisms</p> <p>Code 034: no disruptions to usual ways of working</p> <p>Code 035: sustainability given as responsibility to only one department</p> <p>Code 036: The sustainability department is separated from other departments</p> <p>Code 037: Sustainability recorded and pushed on by central services</p> <p>Code 038: Sustainability pushed on centrally by the estates' department</p> <p>Code 039: Lack of someone or a team to speak to the staff and students on an ongoing basis.</p> <p>Code 040: The responsibility for waste management given to cleaners</p> <p>Code 041: Cleaners' priority is to clean & not arrange bins correctly</p> <p>Code 042: The university has less control over outsourced responsibilities</p> <p>Code 043: subcontracting impacts on universities' ability to evidence tangible outcomes for sustainability.</p> <p>Code 044: a lost opportunity to make income from waste material</p> <p>Code 045: contractors get free waste materials from the university,</p> <p>Code 046: install automated waste collection and refund vending machines on campus</p> <p>Code 047: contractors generate income from sales of free materials collected from the university.</p> <p>Code 048: set-up business-oriented waste management unit</p> <p>Code 049: The university has no regular interaction with service providers</p> <p>Code 050: draw contractors closer to offer more student learning opportunities</p> <p>Code 051: subcontracting shields universities from observing actual impacts</p> <p>Code 052: no tangible change since the introduction of sustainability</p> <p>Code 053: applied processes for sustainability not suitable</p> <p>Code 054: intended impacts not realised.</p> <p>Code 055: impact realised only in cost savings for the university</p>	<p>Code 157: dedicate quality time to environmental sustainability projects and initiatives</p> <p>Code 158: Assign people and teams to interact with staff and students on an ongoing basis.</p> <p>Code 159: have ambassadors pursue employees' engagement</p> <p>Code 160: engage with green league tables and rankings.</p> <p>Code 161: Join environmental sustainability networks.</p> <p>Code 162: reward and recognise citizenship actions undertaken on a personal level</p> <p>Code 163: Commit to regular disclosure of the university's carbon footprint data.</p> <p>Code 164: energy saving</p> <p>Code 165: activism</p> <p>Code 166: out-door pollution prevention</p> <p>Code 167: waste management</p> <p>Code 168: Support University Green Association</p> <p>Code 169: being part of the university sustainability advisory group</p> <p>Code 170: promote a sustainable brand image for the university</p> <p>Code 171: car-sharing</p> <p>Code 172: indoor air pollution prevention</p> <p>Code 173: reduce plastic waste</p> <p>Code 174: minimise paper waste</p> <p>Code 175: answer questions about environmental sustainability positively</p> <p>Code 176: recycle waste</p> <p>Code 177: contributing to water waste reduction</p> <p>Code 178: stimulate others to act sustainably</p> <p>Code 179: teach others how to become green</p> <p>Code 180: green purchasing</p> <p>Code 181: reduce travel</p> <p>Code 182: contribute to policy development</p> <p>Code 183: take part in the community garden project</p> <p>Code 184: participate in organising green events</p> <p>Code 185: sustainability must be led by someone in senior management</p> <p>Code 186: leaders should model sustainable behaviour</p> <p>Code 187: leaders should have a transformation mindset and not be afraid to make real change.</p> <p>Code 188: leaders should not be afraid to challenge existing norms.</p> <p>Code 189: leaders should genuinely and consistently put sustainable ways of working above anything else.</p> <p>Code 190: leadership should lead the continuous drive for technological advancement.</p> <p>Code 191: deans should act as spokespersons articulating the university's vision on sustainability.</p>
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<p>Code 056: practice environmental sustainability to meet the standards of certifying organisations</p> <p>Code 057: practice environmental sustainability to par with other sustainable universities</p> <p>Code 058: diversify environmental sustainability schemes or portfolio offerings</p> <p>Code 059: make access to environmental sustainability schemes easy and convenient</p> <p>Code 060: environmental responsibility should be given to everyone regardless of department, team or job role</p> <p>Code 061: Have an idea or experience sharing a platform</p> <p>Code 062: underestimate managerial competencies required to lead sustainability</p> <p>Code 063: The responsibility of sustainability is shouldered on people with no qualification in sustainability or environmental management.</p> <p>Code 064: insufficient financial backing for environmental sustainability</p> <p>Code 065: more priority is given to cost-saving than behaviour and culture change</p> <p>Code 066: unclear goals for sustainability</p> <p>Code 067: no performance targets</p> <p>Code 068: no sustainability baseline</p> <p>Code 069: no information capturing system.</p> <p>Code 070: develop long-term targets</p> <p>Code 071: conduct a baseline audit</p> <p>Code 072: develop yearly and quarterly targets</p> <p>Code 073: establish key performance indicators (KPI)</p> <p>Code 074: existing culture does not support sustainability</p> <p>Code 075: colleagues work independently</p> <p>Code 076: isolation</p> <p>Code 077: should be more accepting of cooperative working</p> <p>Code 078: social interactions and networking</p> <p>Code 079: sharing insights</p> <p>Code 080: collaborating</p> <p>Code: 081: communication comes from people sited in an ivory tower</p> <p>Code 082: present sustainability information in a way that will help staff join the dots and see the bigger picture</p> <p>Code 083: communication used for wrist-slapping and chastising</p> <p>Code 084: staff rarely communicated unless doing something negative</p> <p>Code 085: It is best to communicate not assuming the information is castigated to a monoculture</p> <p>Code 086: communications for environmental sustainability should be persuasive rather than authoritative</p>	<p>Code 192: a leader with communication & interpersonal skills.</p> <p>Code 193: green recruitment</p> <p>Code 194: build environmental sustainability into induction training</p> <p>Code 195: staff contract & job description should emphasise environmental sustainability.</p> <p>Code 196: include environmental sustainability information in pre-induction information sheets.</p> <p>Code 197: offer green training</p> <p>Code 198: provide green communications</p> <p>Code 199: conduct green performance management</p> <p>Code 200: undertake green reward management</p> <p>Code 201: make environmental sustainability part of the psychological contract</p> <p>Code 202: monitor and track how well things in terms of environmental sustainability are doing through employee feedback.</p> <p>Code 203: encourage the sharing of informal personal stories.</p> <p>Code 204: Create a formal feedback channel.</p> <p>Code 205: Formal feedback channels should be open & transparent</p> <p>Code 206: put systems in place before setting targets</p> <p>Code 207: emphasise environmental satisfaction survey rather than leading indicators like employee & consumer satisfaction.</p> <p>Code 208: create opportunities for deep personal reflections</p> <p>Code 209: provide employees chances to assess their performance</p> <p>Code 210: benchmark and learn from other universities</p> <p>Code 211: adapt & modify existing practices</p> <p>Code 212: relocate the site of sustainability departments</p> <p>Code 213: reconcile practice inconsistencies</p> <p>Code 214: Less involved in the operational end, day-to-day energy management or waste management.</p> <p>Code 215: lack of structure</p> <p>Code 216: lack of staff involvement & participation</p> <p>Code 217: sustainability managers lack required people skills beyond the technical side</p> <p>Code 218: not enough time dedicated to things of sustainability</p> <p>Code 219: lack of long-term legacy funding for successful sustainability schemes</p> <p>Code 220: lack of communication</p> <p>Code 221: Only one electric car charging point in the university</p> <p>Code 222: The sustainability agenda is not really championed.</p>
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<p>Code 087: The existing orientation of reward focuses on research performance and not behavioural elements.</p> <p>Code 088: reward needs expanding to capture sustainable behaviours</p> <p>Code 089: The university career framework does not capture sustainability contributions</p> <p>Code 090: encourage other ways of reward</p> <p>Code 091: celebrate unsung heroes and extraordinary behaviours</p> <p>Code 092: existing technological infrastructures not suitable to support sustainability</p> <p>Code 093: insufficient technical resources</p> <p>Code 094: employees lack technical know-how</p> <p>Code 095: remove general waste bins from commercial areas</p> <p>Code 096: demise of sustainability manager</p> <p>Code 097: communicate separate policies for the different environmental sustainability areas, including energy policy, waste policy, water policy, transport policy, and biodiversity policy</p> <p>Code 098: Formulate values for environmental sustainability</p> <p>Code 099: Enhance messages and communications to link to climate mitigation.</p> <p>Code 100: link messages to environmental impacts</p> <p>Code 101: link messages to addressing future and present generation needs</p> <p>Code 102: environmental policy should be less worthy or lengthy</p> <p>Code 103: demonstrate quality environmental sustainability initiatives</p> <p>Code 104: operationalise environmental sustainability free from deficiencies or inconsistencies</p> <p>Code 105: Involve in environmental sustainability reporting</p> <p>Code 106: Solar energy projects with pockets of excellence</p> <p>Code 107: Some suitable biodiversity activities like maintaining the natural environment.</p> <p>Code 108: Some renovated buildings</p> <p>Code 109: some good energy-saving buildings</p> <p>Code 110: managed to maintain things like the car-sharing scheme</p> <p>Code 111: some stuff around transportation like bus-pass discount</p> <p>Code 112: biodiversity is like maintaining the natural environment</p> <p>Code 113: fair waste management activity in the area of recycling</p> <p>Code 114: leverage performance appraisals and faculty forums to encourage people to reflect on their environmental impacts</p>	<p>Code 223: no correlation between initiatives & climate change</p> <p>Code 224: lack of Institutional Identity & reputation on Sustainability</p> <p>Code 225: sustainability funding bodies create expectations that universities must demonstrate a new direction for environmental sustainability from previous projects before funding can be awarded</p> <p>Code 226: The installation of censored lights, water taps, and energy-efficient hand dryers throughout university buildings is needed.</p> <p>Code 227: lack of support from the HR department</p> <p>Code 228: paper waste reduction is promoted, yet paper promotional materials such as paper flyers and pamphlets are used and littered throughout the university.</p> <p>Code 229: lack of concrete data about university sustainability performance.</p> <p>Code 300: lack of instructions advising ways of becoming more sustainable.</p> <p>Code 301: It is difficult to find and access sustainability information</p> <p>Code 302: Sustainability policy is too wordy for clarity.</p> <p>Code 303: sustainability policy not comprehensive</p> <p>Code 304: no policy on sustainability</p> <p>Code 305: lack of leadership commitment</p> <p>Code 306: inadequate commitment to day-to-day operational elements of sustainability</p> <p>Code 307: split between the operational side and the sustainability side</p> <p>Code 308: heavy teaching & research workload</p> <p>Code 309: employees lack the required knowledge or skills to practice environmental sustainability</p> <p>Code 310: people do not know what goes into the green or blue bins</p> <p>Code 311: Conduct regular site evaluations</p> <p>Code 312: lack of investment in technological innovations to support environmental sustainability</p> <p>Code 313: Strict funding settlement for universities in Scotland.</p> <p>Code 314: staff ignore recycling bins.</p> <p>Code 315: Use various platforms simultaneously, including screens around campus, university websites, staff blogs, faculty Facebook pages, Instagram pages, and Pinterest pages to share sustainability information.</p> <p>Code 316: pay serious attention to sustainability matters that will help avoid bad press & Sanctions</p> <p>Code 317: devote no attention to behaviour change initiatives</p>
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<p>Code 115: create an opportunity for staff to exercise skills</p> <p>Code 116: Adapt HR activities, processes and systems to support environmental sustainability</p> <p>Code 117: assign people of calibre to be responsible for environmental sustainability matters</p> <p>Code 118: input quality financial investment</p> <p>Code 119: add in quality technology</p> <p>Code 120: rebrand artefacts used to project environmental sustainability, including logo, colours and slogans</p> <p>Code 121: requires employees to submit brief reports quarterly or yearly detailing their personal experience or contributions to environmental sustainability in the organisation.</p> <p>Code 122: Collaborate with charity organisations</p> <p>Code 123: The sustainability department should access staff reflection documents to learn of ways to address issues raised by employees.</p> <p>Code 124: staff should see innovation around their job</p> <p>Code 125: transform daily processes to improve staff mental wellbeing</p> <p>Code 126: improvements should enable greener and more innovative ways of working</p> <p>Code 127: filter down KPIs into individual job descriptions</p> <p>Code 128: HR & line managers to work together to develop clear responsibilities for all staff regardless of department.</p> <p>Code 129: Personal responsibilities given to staff should clearly inform what should be done differently on the job.</p> <p>Code 130: personalised responsibilities make it binding for employees</p> <p>Code 131: tasks assigning helps for easier accountability and to hold defaulters accountable</p> <p>Code 132: emails sent out should target and follow up with persons defaulting on their responsibilities</p> <p>Code 133: HRD has a role to play</p> <p>Code 134: HRD can influence & build environmental sustainability as part of staff ethos</p>	<p>Code 318: we need to create responsibilities that give 50:50 to both the sustainability side & operational side.</p> <p>Code 319: The operational side of the job is to ensure that the university is maintaining communication</p> <p>Code 320: The sustainability side of the task includes everyday housekeeping like managing our car park, our waste management activities, and our commercial area.</p>
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Appendix 6: Axial Codes

Axial Codes	
<p style="text-align: center;">THEME 1: SUSTAINABILITY DECOUPLING FACTORS</p> <p>THEME 1: POLICY-PRACTICE DECOUPLING. <u><i>Causal indeterminacy-Bounded Rationality</i></u> Code 010: limited information on sustainability research funding & bids Code 011: no available data for researchers Code 012: Misinformation Code 013: wrong/mislabelled recycling bins Code 014: lack of correct information on separating waste Code 015: wrongly positioned bins. Code 016: posters on top of bins not relevant to recycling Code 017: stakeholders lack understanding of environmental sustainability at the university. Code 220: lack of communication Code 018: no changes made to commercial activities. Code 021: people working in commercial areas lack awareness of university waste management policy. Code 022: lack of environmental sustainability information in the area of water management Code 023: more packaging for products Code 024: Commercial areas cook more food than is consumed. Code 020: waste sorting is promoted, yet general waste bins are situated in strategic areas within hubs. Code 222: The sustainability agenda is not really championed. Code 229: lack of concrete data about university sustainability performance. Code 300: lack of instructions advising ways of becoming more sustainable. Code 223: no correlation between initiatives & climate change Code 301: It is challenging to find and access sustainability information. Code 002: disconnect between commercial activities and environmental sustainability principles. Code 001: inconsistencies in waste management practices Code 003: recycling is promoted, but non-recyclable packaging is used for food sold on campus. Code 004: branded reusable bottles are distributed on campus, but the water fountain does not dispense water to allow people to use the refillable bottles. Code 005: healthy eating is promoted, but food sold on campus is unhealthy for students. Code 008: food waste reduction is encouraged, but commercial food stalls on campus cook more food than is consumed.</p>	<p><u><i>Differentiation</i></u> Code 124: staff should see innovation around their job Code 125: transform daily processes to improve staff mental wellbeing. Code 126: improvements should enable greener and more innovative ways of working. Code 103: demonstrate quality environmental sustainability initiatives. Code 104: operationalise environmental sustainability free from deficiencies or inconsistencies. Code 056: practice environmental sustainability to meet the standards of certifying organisations. Code 057: practice environmental sustainability to par with other sustainable universities Code 058: diversify environmental sustainability schemes or portfolio offerings. Code 059: make access to environmental sustainability schemes easy and convenient. Code 120: Rebrand artefacts used to project environmental sustainability, including logos, colours, and slogans.</p> <p><u><i>Individual specification</i></u> Code 127: filter down KPIs into individual job descriptions Code 130: personalised responsibilities make it binding for employees. Code 131: assigning tasks helps with easier accountability and holds defaulters accountable. Code 128: HR & line managers to work together to develop clear responsibilities for all staff regardless of department. Code 129: Personal responsibilities given to staff should clearly inform what should be done differently on the job. Code 132: emails sent out should target and follow up with persons defaulting on their responsibilities. Code 060: environmental responsibility should be given to everyone regardless of department, team or job role.</p> <p>SUBTHEME 2: COGNITIVE PARTICIPATION</p> <p><u><i>Activation-Environmental Sustainability Citizenship Behaviours</i></u> Code 162: reward and recognise citizenship actions undertaken on a personal level. Code 164: energy saving Code 165: environmental activism Code 166: out-door pollution prevention Code 167: waste management Code 168: Support University Green Association Code 169: being part of the university sustainability advisory group. Code 170: promote a sustainable brand image for the university.</p>

Code 228: paper waste reduction is promoted, yet paper promotional materials such as paper flyers and pamphlets are used and littered throughout the university.

Code 006: disconnect between environmental concerns and safety.

Code 007: expectations to include environmental sustainability in teaching without guidance.

Confirmed environmentally Sustainable Practices in North-East Scottish universities

Code 106: Solar energy projects with pockets of excellence

Code 107: Some good biodiversity activities like maintaining the natural environment.

Code 108: Some renovated buildings

Code 109: some good energy-saving buildings.

Code 110: managed to maintain things like car-sharing scheme.

Code 111: Some things related to transportation, like the bus-pass discount.

Code 112: biodiversity is like maintaining the natural environment

Code 113: fair waste management activity in the area of recycling

Fragmentation of External Environment

Code 025: absence of sanction from external stakeholders' university accountable

Code 026: universities disengaging with green rankings.

Code 027: university keeps low profiles.

Code 028: student unions and alumni are not intrinsically motivated for sustainability.

Code 029: students not holding the university accountable.

Code 030: The university does not sign up for sustainability commitments.

Code 031: universities fail to align with best practice peers in the sector.

Code 019: lack of pressure from external sustainability watch organisations like EAUC, P&P, etc.

Fragmentation of Internal Environment

Code 032: internal processes do not capture sustainability.

Code 033: no stakeholder engagement mechanisms

Code 034: no disruptions to usual ways of working

Code 035: Sustainability is the responsibility of only one department.

Code 036: The sustainability department is separated from other departments.

Code 037: Sustainability recorded and pushed on by central services.

Code 171: car-sharing

Code 172: indoor air pollution prevention

Code 173: reduce plastic waste.

Code 174: reduce paper waste.

Code 175: answer questions about environmental sustainability positively

Code 176: Recycling waste.

Code 177: contributing to water waste reduction.

Code 178: stimulate others to act sustainably.

Code 179: teach others how to become green.

Code 180: green purchasing

Code 181: reduce travel.

Code 182: contribute to policy development.

Code 183: take part in the community garden project.

Code 184: participate in organising green events.

Initiation

Code 158: Assign people and teams to interact with staff and students on an ongoing basis.

Code 159: have ambassadors pursue employees' engagement.

Code 117: assign people of calibre to be responsible for environmental sustainability matters.

Subtheme 3: COLLECTIVE ACTION

Interactional Workability

Code 139: Departments should invite staff from other departments to monthly meetings to share information about new developments.

Code 140: library staff should be invited to share if new developments have taken place in the library.

Code 141: invite HR dealing with crucial issues like environmental safety to talk to staff once a month.

Code 144: encourage staff participation in the community garden project.

Code 145: host charity events on campus

Code 146: host trade fairs and sell organic produce from community garden projects.

Code 147: organise environmental sustainability conferences.

Code 148: create project partnerships with universities that have established themselves in environmental sustainability.

Code 122: Collaborate with charity organisations.

Code 149: bring charity organisations into the classroom to share with students how they are solving environmental SDG challenges.

Code 150: The sustainability department should branch out and work with research, procurement and curriculum colleagues.

Code 160: engage with green league tables and rankings.

Code 151: Involvement in behaviour change programs.

Code 161: Join environmental sustainability networks.

Code 038: Sustainability pushed on centrally by the estates' department.

Code 214: Less involved in the operational end, day-to-day energy management or waste management.

Code 218: not enough time dedicated to things of sustainability.

Code 215: lack of structure

Code 302: The sustainability policy is too wordy for clarity.

Code 303: sustainability policy not comprehensive

Code 304: no policy on sustainability

Code 305: lack of leadership commitment

Code 306: inadequate commitment to day-to-day operational elements of sustainability

Code 227: lack of support from the HR department

Code 216: lack of staff involvement & participation

Task compartmentalisation {Emerging theme}

Code 009: Operational-side and sustainability side of things

Code 316: pay serious attention to sustainability matters that will help avoid bad press.

Code 317: devote no attention to behaviour change initiatives.

Code 318: we need to create responsibilities that give 50:50 to both the sustainability side & operational side.

Code 065: more priority is given to cost-saving than behaviour and culture change.

Code 319: On the operational side, my job is to ensure that the university maintains communication.

Code 320: The sustainability side of the task includes everyday housekeeping like managing our car park, our waste management activities, and our commercial area.

Outsourcing {Emerging Theme}

Code 040: responsibility for waste management given to cleaners.

Code 041: cleaners' priority is to clean & not arrange bins correctly.

Code 042: The university has less control over outsourced responsibilities.

Code 043: subcontracting impacts on universities' ability to evidence tangible outcomes for sustainability.

Code 045: contractors get free waste materials from the university,

Code 047: contractors generate income from sales of free materials collected from the university.

Code 044: lost opportunity to make income from waste material.

Code 048: set-up business-oriented waste management unit

Code 049: The university has no regular interaction with service providers.

Code 153: involves what is done voluntarily through university and college climate and public bodies' duties.

Code 156: have risk register for new capital projects.

Contextual Integration

Code 157: dedicate quality time to environmental sustainability projects and initiatives.

Code 118: input quality financial investment

Code 119: add in quality technology.

Leadership

Code 185: sustainability must be led by someone in senior management.

Code 186: leaders should model sustainable behaviour.

Code 187: leaders should have a transformation mindset and not be afraid to make real change.

Code 188: leaders should not be afraid to challenge existing norms.

Code 189: leaders should genuinely and consistently put sustainable ways of working above anything else.

Code 190: leadership should lead the continuous drive for technological advancement.

Code 191: deans should act as spokespersons articulating the university's vision on sustainability.

Code 192: a leader with communication & interpersonal skills.

Green Human Resource Management

Code 133: HRD has a role to play

Code 134: HRD can influence & build environmental sustainability as part of staff ethos.

Code 135: HRD should identify things they can materially change.

Code 137: HRD can enrol people to participate in environmental sustainability.

Code 138: HRD can effectively pass environmental sustainability information across to staff.

Code 142: HRD should provide more information about what they do to support environmental sustainability.

Code 143: HR managers should inform staff of how they can be part of what they are doing.

Code 116: Adapt HR activities, processes, and systems to support environmental sustainability.

Code 193: green recruitment

Code 194: build environmental sustainability into induction training.

Code 195: staff contract & job description should emphasise environmental sustainability.

Code 196: include environmental sustainability information in pre-induction information sheets.

Code 197: offer green training.

Code 050: draw contractors closer to offer more student learning opportunities.

Code 051: subcontracting shields universities from observing actual impacts.

THEME 2: MEANS-ENDS DECOUPLING

Code 052: no tangible change since the introduction of sustainability

Code 053: applied processes for sustainability not suitable

Code 054: intended impacts not realised.

Code 055: impact realised only in cost saving for the university.

Goal ambiguity

Code 066: unclear goals for sustainability

Code 067: no performance targets

Code 068: no sustainability baseline

Code 069: no information capturing system.

Code 070: develop long-term targets.

Code 071: conduct a baseline audit

Code 072: develop yearly and quarterly targets.

Code 073: develop key performance indicators (KPI)

Culture

Code 074: existing culture does not support sustainability.

Code 075: colleagues work independently.

Code 076: isolation

Code 077: cooperative working should be more accepted.

Code 078: social interactions and networking

Code 079: sharing insights.

Code 080: collaborating.

Code 081: communication comes from people sited in an ivory tower

Code 082: present sustainability information in a way that will help staff join the dots and see the bigger picture.

Code 083: communication used for wrist-slapping and chastising.

Code 084: staff rarely communicated unless doing something negative.

Code 085: It is best to communicate, not to assume that information is castigated against a monoculture.

Code 086: communications for environmental sustainability should be persuasive rather than authoritative.

Code 087: The existing orientation of reward focuses on research performance and not behavioural elements.

Code 088: reward needs to expand to capture sustainable behaviours.

Code 089: The university career framework does not capture sustainability contributions.

Code 090: encourage other ways of reward.

Code 091: celebrate unsung heroes and extraordinary behaviours.

Code 115: create an opportunity for staff to exercise skills.

Code 198: provide green communications.

Code 199: conduct green performance management.

Code 200: undertake green reward management.

Code 201: make environmental sustainability part of the psychological contract.

SUBTHEME 3: REFLECTIVE MONITORING

Communal Appraisal

Code 204: Create a formal feedback channel.

Code 202: monitor and track how well things in terms of environmental sustainability are doing through employee feedback.

Code 061: Have an idea or experience sharing platform.

Code 203: encourage the sharing of informal personal stories

Code 205: Formal feedback channels should be open & transparent.

Code 206: put systems in place before setting targets.

Code 207: use an environmental satisfaction survey rather than leading indicators like employee & consumer satisfaction.

Code 105: Involvement in environmental sustainability reporting.

Code 163: Commit to regular disclosure of the university's carbon footprint data.

Individual Appraisal

Code 208: create opportunities for deep personal reflections.

Code 209: provide employees chances to assess their performance.

Code 114: leverage performance appraisals and faculty forums to encourage people to reflect on their environmental impacts.

Code 123: The sustainability department should access staff reflection documents to learn of ways to address issues raised by employees.

Code 121: requires employees to submit brief reports quarterly or yearly detailing their personal experience or contributions to environmental sustainability in the organisation.

Reconfiguration

Code 210: benchmark and learn from other universities.

Code 211: modify existing practices.

Code 212: relocate the site of sustainability departments.

Code 136: sustainability colleagues should share an office with colleagues from other departments, so it is easier for them to pass on ideas and information and interact with employees.

Code 311: Conduct regular site evaluations.

Code 213: reconcile practice inconsistencies.

Underestimation- Human and Financial Resources

Code 062: underestimate managerial competencies required to lead sustainability.

Code 063: The responsibility of sustainability is shouldered on people with no qualification in sustainability or environmental management.

Code 217: sustainability managers lack required people skills beyond the technical side.

Code 064: insufficient financial backing for environmental sustainability

Code 039: lack of someone or a team to speak to the staff and students on an ongoing basis.

Exiguous Technical infrastructure

Code 092: Existing technological infrastructures are not suitable for supporting sustainability.

Code 093: insufficient technical resources

Code 094: employees lack the technical know-how.

Code 312: lack of investment in technological innovations to support environmental sustainability.

Code 221: Only one electric car charging point in the university.

Code 226: Install censored lights, water taps, and energy-efficient hand dryers throughout university buildings.

ACCIDENTAL DECOUPLING {Emerging theme}

Code 096: demise of sustainability manager

**THEME 3: FACTORS OF SUSTAINABILITY
TIGHT-COUPLING**

SUBTHEME 1: COHERENCE

Communal Specification

Code 098: Formulate values for environmental sustainability.

Code 097: communicate separate policies for the different environmental sustainability areas, including energy policy, waste policy, water policy, transport policy, and biodiversity policy.

Code 102: environmental policy should be less worthy or lengthy.

Code 099: Enhance messages and communications to link with climate change mitigation.

Code 100: link messages to environmental impacts

Code 101: Link messages to address future and present generation needs.

Code 315: Use various platforms simultaneously, including screens around campus, university websites, staff blogs, faculty Facebook, Instagram, and Pinterest pages, to share sustainability information.

Code 095: remove general waste bins from commercial areas.

Code 046: install automated waste collection and refund vending machines on campus.

Code 152: stop treating the sustainability department as a separate entity from other departments.

Code 155: Include Sustainability paragraphs in all management group documents.

Code 154: use information obtained from benchmarking other universities to evaluate the efficacy of implemented environmental practices.

**THEME 4: BARRIERS HINDERING EFFORTS TO
TIGHT-COUPLE ENVIRONMENTAL
SUSTAINABILITY INTO THE CULTURE OF NESU**

**SUBTHEME 1: INDIVIDUAL/PSYCHOLOGICAL
BARRIERS**

Code 309: employees lack the required knowledge or skills to practice environmental sustainability.

Code 310: people do not know what goes into the green or blue bins.

Code 314: staff ignore recycling bins.

Code 224: lack of institutional reputation on environmental sustainability

SUBTHEME 2: SYSTEMIC BARRIER

Code 308: heavy teaching & research workload

SUBTHEME 3: Resource Constraint Barrier

Code 313: tough funding settlement for universities in Scotland.

Code 219: lack of long-term funding for successful sustainability schemes.

Code 225: sustainability funding bodies create expectations that universities must demonstrate new direction for environmental sustainability from previous projects before funding can be awarded.

