

**The wellbeing impacts of participation in civic environmental activities
in an urban context: a mixed methods realist evaluation**

Jessica Thompson

A thesis submitted in partial fulfilment of the requirements of the Degree of
Doctor of Philosophy

The University of Salford

A collaboration between the School of Health and Society with the
School of Science, Engineering and Environment

2024

Acknowledgements

I would firstly like to thank my supervision ‘dream team’, Professor Penny Cook, Professor Michael Hardman and Professor Michelle Howarth. I do not think I can express how much the PhD experience has meant to me. It is an incredible personal development journey and I am genuinely going to miss the dynamic of being a student guided by three brilliant mentors. I am eternally grateful for your generosity of time, wisdom, masses of support and chat over the six years or so. I’ve left every meeting with you feeling enthused and encouraged to keep going. You each bring different perspectives and areas of expertise, and I have learned so much from each of you. I really hope that we can continue to work together long into the future.

I am very grateful to the University of Salford for supporting this PhD, as part of the Pathways to Excellence programme. I feel incredibly lucky and humbled to have had the opportunity to undertake the PhD – it really has been a life-changing experience.

I cannot thank enough the Chair, Carl Austin-Behan, and Trustees of City of Trees Trust for their incredible support, without which I do not know how I would have completed the write-up. I am so grateful that you recognised the potential and value of this PhD, both to my personal development as well as improving our work in helping to connect people to nature across Greater Manchester. To my friends and colleagues at work, thank you for keeping me sane. Huge thanks to Emily Crutwell for sharing your knowledge in handling numbers.

I’d like to acknowledge the participants and practitioners who took part in the study. Enormous thanks to the teams working hard on the ground who diligently handled data collection, asking participants to complete a pre and post questionnaire, no doubt in the rain and in muddy fields, when there are many other tasks to be done during activity sessions.

My family have all been superstars and provided copious amounts of practical and moral support. My kids won’t remember a time when I wasn’t studying, but they’ve been real champs on the side-line cheering me on.

Finally, to my partner Doug. This PhD has been a backdrop to our lives over the years. Your support has been immense, through thick and thin. Thank you from the bottom of my heart.

Abstract

Environmental organisations are operating in the context of climate emergency and a biodiversity crisis, alongside a growing green health movement that seeks to understand better the links between the natural environment and human health. This study gained a closer understanding of how and why and in what context wellbeing impacts may be derived from participation in civic environmental activities to assess whether this might be an innovative solution to tackling health issues upstream whilst improving local greenspace provision. Civic environmental activity is facilitated by urban greening initiatives delivered by organisations that enable participants to improve or develop publicly accessible green infrastructure within the urban environment at a neighbourhood level. The research takes a realist approach to evaluating the context and mechanisms that may lead to wellbeing outcomes through participation in civic environmental activity and the implications for the implementation of delivery models. The study gathered perspectives from both participants engaged in civic environmental activities and practitioners facilitating activities, to better understand the Context – Mechanism- Outcome configuration conceptualised using a programme theory approach. Data were collected from individuals attending greening initiatives delivered by Greater Manchester based organisations.

The Five Ways to Wellbeing (Aked et al., 2008) framework provided the starting point to guide a deeper understanding into causal mechanisms within the phenomenon that may lead to the intended outcome of increased wellbeing (or conversely unintended outcomes). Data were gathered from a bespoke Green Ways to Wellbeing (GWTWB) questionnaire (QUANT-QUAL) conducted pre and post activities. Semi-structured interviews and focus groups (QUAL) with participant and practitioners were subjected to a retroductive Reflexive Thematic Analysis approach. A triangulation strategy determined convergence, differences or a combination of the two between datasets.

The findings suggest that participation in civic environmental activities leads to improved mood leading to short-term hedonistic wellbeing experiences, and in the longer term eudaimonic wellbeing. In the context of nature, the phenomenon facilitates physical activity, social connections, learning opportunities, a sense of citizenship, a connection to nature, and nurtures a sense of purpose and self-worth.

Findings from the research present a deeper understanding and insight into the journey and contextual factors, e.g. participant reasoning and resources needed, to achieve the desired wellbeing outcomes. The study provides an engagement framework and tool (GWTWB questionnaire) for evaluating wellbeing impacts into the future. The discussion seeks to address conflicting paradigms regarding evaluation with an aim to help bridge an existing gap between the health sector and environmental third sector stakeholders.

The findings aim to support policy and practitioners to deliver nature-based activities for health and wellbeing and support the emerging green social prescribing movement, by understanding better what works for whom and why and the implications for practice in the context of climate change and nature recovery agendas. The research provides a unique contribution to the evidence base in understanding wellbeing impacts of the phenomenon, and the implications for practice, using a realist evaluation approach.

List of figures

Figure 1 Cook et al., 2019 model of the relationship between engagement with nature, public health and biodiversity outcomes. The section highlighted in yellow has been added to highlight the relevance to this study.....	6
Figure 2. The different contexts in which an individual may engage in nature, (Bragg & Atkins, 2016 pg. 22). The section highlighted in yellow has been added to highlight the relevance to this study	11
Figure 3. The Greater Manchester Strategy (GMCA, 2024b)	15
Figure 4. Evidence based practice hierarchy of evidence (Unwin, 2024)	17
Figure 5. The realist literature review process undertaken showing Stage 1 & Stage 2 of the ' <i>aligning and refining</i> ' process.....	33
Figure 6. A pictorial representation of the Stage 1 literature findings aligning with the Programme Theory underpinned by C-M-O processes (adapted from (Pawson et al., 2004, p.34)).....	36
Figure 7. A pictorial representation of the Stage 2 literature findings aligning and refining the PT underpinned by C-M-O processes (adapted from (Pawson et.al., 2004, p.34)).....	37
Figure 8. A pictorial representation of the Stage 1 & Stage 2 literature findings aligning and refining the PT underpinned by C-M-O processes (adapted from (Pawson et.al., 2005))	38
Figure 9. Philosophical differences: Positivism, Realism and Constructivism (Westhorpe, 2011 pg. 5)	74
Figure 10. Generative causation in realist evaluation (Pawson & Tilley, 1997, p. 58)	77
Figure 11. Generative explanation in realist programme evaluation, Wong, G., Westhorp, G., Pawson R, and Greenhalgh, T. (2012).....	77
Figure 12. The Programme Theory developed for this study showing the theory of change reflected as hypotheses	87
Figure 13. Realist Evaluation – applying the C-M-O configuration to the Programme Theory	91
Figure 14. Triangulation strategy, building & merging the data	94
Figure 15. Research design and process	94
Figure 16. PART 1 PRE-activity GWTWB questionnaire	97
Figure 17. Part 2, POST activity GWTWB questionnaire	97
Figure 18. Initial coding ideas	121
Figure 19. Coding ideas – frequency across datasets.....	122
Figure 20. Example of child nodes under parent code 'Connect'.....	125

Figure 21. Example of creating references from data under child code 'Group Dynamics' under the code 'Connect' in NVivo,.....	125
Figure 22. Example of child codes under the emerging theme 'sense of self'	126
Figure 23. . Example of parent code 'Own heritage' and associated child codes not being a conceptual theme, but giving insight into context (for CMO configuration)	127
Figure 24. Identifying C-M-O across themes using colour coding	127
Figure 25. Sketching and mind-mapping themes	128
Figure 26. Visual summary of Aims, Objectives & Methodology	132
Figure 27. Spidergraph showing mean scores for ALL, Female & Male PRE-activity based on Five Ways to Wellbein	153
Figure 28. PRE activity mean scores by pathway based on Five Ways to Wellbeing.....	155
Figure 29 Bar chart showing the numbers of references coded to themes from GWTWB open-ended question PRE-activity.....	157
Figure 30 A visual representation of weight of qualitative references from the GWTWB questionnaire open-ended question	158
Figure 31 Numbers of participants of self-reported personal pathways from GWTWB questionnaire (cohort 1)	170
Figure 32. Relationship between 'reasoning ' and 'resource' in the C-M-O configuration.....	188
Figure 33. Spidergraph showing over all mean scores POST activity	252
Figure 34. Chart showing GWTWB QUAL numbers of references by theme	252
Figure 35. Cluster chart showing numbers of references coded to themes by case (participant interviews).....	253
Figure 36. Adapted from Ryan & Deci (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. American psychologist, 55(1), p.72.	319
Figure 37 Study framework, aims, objectives and methodology	345
Figure 38. Logic based framework showing alternative funding model to sustain GSP and other pathways to civic environmental activity	357
Figure 39. The relationship between original Programme Theory figure 12, and the revised, nuanced detail in figure 7-3	358

List of Tables

Table 2-1. Stage 1 key search terms	30
Table 2-2. Stage 2 search questions and search terms	30
Table 3-1. Iterative steps in Realist Evaluation Design Process (Westthorp, 2014; Ramesesproject, 2021)	85
Table 3-2. Hypotheses within the Programme Theory	89
Table 3-3. Overarching hypothesis and sub-hypotheses	90
Table 3-4. Hypotheses within the Programme Theory as C-M-O configuration.....	90
Table 3-5. Cohort and sample sizes	104
Table 3-6. GWTWB participant age range	104
Table 3-7. GWTWB participant gender split	105
Table 3-8. GWTWB participant nationality	105
Table 3-9. GWTWB participant ethnicity	105
Table 3-10. GWTWB participant personal pathway	106
Table 3-11. Demographic details of cohort 2, local residents, ...	106
Table 3-12. Demographic details of cohort3 3, corporate pathway	107
Table 3-13. Demographic details of cohort 4, rehabilitation pathway	107
Table 3-14. Demographic details of cohort 5, practitioners	107
Table 3-15. Missing variable analysis where minimum percentage of missing values for variable to be included: 10.0%	112
Table 3-16. Results from independent paired t-test comparing mean PRE activity mood scores between ‘completers’ and ‘non-completers’ of POST activity mood score	113
Table 4-1. Types of activities reported in semi-structured interviews.	143
Table 4-2. Mean (standard deviation) of 5 ways pre-activity scores by gender	152
Table 4-3. PRE activity Mean scores by pathway based on Five Ways to Wellbeing.....	154
Table 4-4. Results from a Spearman rank correlation analysis between PRE activity motivations using Five Ways to Wellbeing and age	156
Table 5-1. POST physical activity mean scores by gender.....	191
Table 5-2. POST physical activity mean scores by pathway	191
Table 5-3. General Linear Model Results showing how POST-activity mood is related to PRE- and POST-activity ratings of the importance of physical activity as a way to wellbeing, controlling for pre-mood, age and gender (n=347).	192
Table 5-4. Pearson correlation coefficient analysis between physical activity variables	193

Table 5-5. POST connect to others mean scores by gender	201
Table 5-6. POST feel connected to others mean scores by gender	201
Table 5-7. General Linear Model Results showing how POST-activity mood is related to PRE- and POST-activity ratings of the importance of feeling connected to others as a way to wellbeing, controlling for pre-mood, age and gender (n=347).	202
Table 5-8. Pearson correlation coefficient analysis between feeling connected to others variables.....	203
Table 5-9. POST take notice of nature mean scores by gender.....	214
Table 5-10. POST take notice of nature mean scores by gender.....	214
Table 5-11. General Linear Model Results showing how POST-activity mood is related to PRE- and POST-activity ratings of the importance of taking notice of nature as a way to wellbeing, controlling for pre-mood, age and gender (n=347).	214
Table 5-12. Pearson correlation coefficient analysis between Taking notice of nature variables	215
Table 5-13. POST learn something mean scores by gender	223
Table 5-14. POST learn something mean scores by pathway	223
Table 5-15. General Linear Model Results showing how POST-activity mood is related to PRE- and POST-activity ratings of the importance of learning as a way to wellbeing, controlling for pre-mood, age and gender (n=347).	224
Table 5-16. Pearson correlation coefficient analysis between learn something variables	224
Table 5-17. POST ‘give back’ mean scores by gender	231
Table 5-18. POST ‘give back’ mean scores by pathway	231
Table 5-19. General Linear Model Results showing how POST-activity mood is related to PRE- and POST-activity ratings of the importance of ‘giving back’ as a way to wellbeing, controlling for pre-mood, age and gender (n=347).	232
Table 5-20. Pearson correlation coefficient analysis between ‘give back’ variables.....	233
Table 5-21. Over all mean scores POST activity	251
Table 6-1. Pre- and post-intervention mood scores (n=299)	257
Table 7-1 Key to cumulations Table 7-3.....	333
Table 7-2 C-M-O cumulations and explanatory theory	334

Table of contents

ACKNOWLEDGEMENTS	I
ABSTRACT	II
LIST OF FIGURES	IV
LIST OF TABLES	VI
TABLE OF CONTENTS	VIII
CHAPTER 1 INTRODUCTION	1
1.1 Background	1
1.1.1 Environmental citizenship.....	1
1.1.2 Civic environmental activity – role of creator, curator and custodian	3
1.1.3 Urban greenspace as a medium to improved health and wellbeing.....	4
1.2 Global context	7
1.2.1 United Nations Sustainable Development Goals	7
1.2.2 COVID pandemic.....	8
1.3 National context	8
1.3.1 Environmental sector perspective	8
1.3.2 The green health agenda	9
1.3.3 Social Prescribing.....	12
1.3.4 The Greater Manchester Context.....	14
1.4 Challenges around evidence	16
1.5 Wellbeing models	18
1.5.1 Five Ways to Wellbeing (Aked et al., 2008) Framework	19
1.6 Research aim & objectives:	19

1.6.1	Aim	19
1.6.2	Objectives.....	20
1.7	Summary	21
1.8	Positionality.....	22
2	CHAPTER 2 LITERATURE REVIEW.....	25
2.1	Realist literature search strategy	27
2.1.1	Search questions.....	28
2.1.2	Search for literature.....	29
2.1.3	Selecting and appraising the literature documents	31
2.2	The Realist approach to analysis.....	32
2.3	Literature review - findings	33
2.3.1	Overview of the literature – a realist summary.....	33
2.3.2	Pictorial overview of literature findings	34
2.3.3	Definition of key terms	38
2.4	Stage 1 – Literature review findings	40
2.4.1	The overarching Programme Theory	40
2.4.2	Themes emerging from the initial literature search.....	43
2.4.3	Theme 1: The relationship between wellbeing and nature.....	43
2.4.4	Theme 2: Volunteering as a mechanism to wellbeing	44
2.4.5	Theme 3: Pathways to participation.....	47
2.5	Stage 2 Literature Review – the evidence and knowledge on deeper C-M-O processes.....	50
2.5.1	Psychosocial and behavioural perspectives	50
2.5.2	Understanding the C-M-O processes using the Five Ways to Wellbeing Framework	56
2.6	Summary of literature review.....	68
2.6.1	Summary of literature review using C-M-O as narrative	68
3	CHAPTER 3 METHODOLOGY	72

3.1	Introduction to Realist Evaluation	73
3.2	Realist philosophy	74
3.2.1	Realist ontological assumptions – a lean towards positivism.....	74
3.2.2	Realist epistemological assumptions	75
3.2.3	Challenges around evidence - a realist perspective	75
3.3	Realist philosophy – Context >Mechanism >Outcome.....	76
3.3.1	What is a mechanism?.....	76
3.3.2	What mechanisms are not?	78
3.3.3	What is meant by context in realism?	79
3.3.4	Realist philosophy and causation.....	80
3.4	Theories and Realist Evaluation	81
3.4.1	What is a theory?	81
3.4.2	The use of theories in Realist Evaluation	81
3.4.3	Middle-range theories.....	82
3.5	Strengths and weaknesses of Realist Evaluation	83
3.6	Realist Evaluation Design	84
3.6.1	Realist Evaluation Design Process.....	84
3.6.2	Establish working relationships	85
3.6.3	Clarify the purpose of the evaluation	85
3.6.4	Overarching and subsidiary questions	86
3.6.5	Development of the programme theory	86
3.6.6	Applying the C-M-O configuration to the Programme Theory.....	89
3.7	Methods	92
3.7.1	Triangulation strategy	93
3.8	Methods of data collection	95
3.8.1	Greenways to Wellbeing Questionnaire	95
3.8.2	Semi-structured interviews	99
3.8.3	Focus Groups.....	99
3.8.4	Sampling and recruitment.....	102
3.8.5	Sample sizes and data collection	103

3.8.6	Who took part.....	104
3.8.7	Consent	108
3.9	GWTWB questionnaire data analysis.....	108
3.9.1	GWTWB Qualitative data analysis	108
3.9.2	QWTWB Quantitative data analysis	109
3.10	Qualitative interviews data analysis and coding	113
3.10.1	Thematic Analysis (TA)	115
3.10.2	What is Thematic Analysis?.....	115
3.10.3	Quality standards and TA	116
3.10.4	Summary of rationale for Reflective Thematic Analysis.....	117
3.11	Step by step process of RTA qualitative data analysis	117
3.11.1	Phase 1: Data familiarisation & notes	118
3.11.2	Phase 2: Systematic data coding.....	119
3.11.3	Phase 3 & Phase 4: Generating initial themes from coded and collated data; developing and reviewing themes	122
3.11.4	Phase 5: Refining, defining & naming themes	128
3.12	Ethics	129
3.13	Risk	129
3.14	Reflexivity – reflecting on positionality	130
3.15	Summary	132
4	CHAPTER 4 FINDINGS - UNDERSTANDING THE CONTEXT	134
4.1.1	Participant’s perspectives	135
4.1.2	Practitioner perspectives	135
4.1.3	Scope of context.....	135
4.1.4	Point 1 - The physical space	137
4.1.5	Landowner permission & access to land.....	137
4.1.6	Types of land, urban v rural	139
4.1.7	Static vs dynamic spaces.....	140
4.1.8	Safe space	141

4.1.9	Environmental justice issue	142
4.2	Point 2 - The activities.....	142
4.2.1	Activity types relevance	142
4.2.2	Activity type unimportant	143
4.2.3	Activities were linked to wider initiatives	144
4.3	Point 3 - Funding	145
4.3.1	Funding is essential	145
4.3.2	Funding strategies	145
4.3.3	Funding for health.....	146
4.3.4	Funding as a barrier to participation	147
4.3.5	Resorting to utilising core funds	148
4.3.6	Resources for additional support	149
4.3.7	Partnerships to maximise resource	149
4.4	Point 4 - Staff capacity and skills.....	150
4.4.1	Staff skills – fighting imposter syndrome	150
4.4.2	Leaning on volunteers.....	151
4.5	Point 5 - Participant motivations - influencing factors	151
4.5.1	Motivations – findings from the GWTWB questionnaire	152
4.5.2	Motivation insights from the semi-structured interviews & focus group.....	160
4.5.3	Motivations - climate emergency and biodiversity crisis	160
4.5.4	Motivations - COVID	164
4.5.5	Motivations - summary	167
4.6	Point 6 – Pathways to the activities	169
4.6.1	GWTWB Participant personal pathways.....	169
4.6.2	Pathways – insights from the semi-structured interviews	170
4.6.3	Pathways practitioner perspectives.....	173
4.6.4	The Green Social Prescribing Pathway	175
4.6.5	Sub-theme 2: GSP terminology	178
4.6.6	Sub-theme 3: GSP infrastructure is unreliable as a pathway.....	180
4.6.7	Summary of GSP pathway and sub-themes	183

4.7	Context summary	184
4.8	Context as Reasoning + Resource	187
5	CHAPTER 5 FINDINGS - MECHANISMS.....	189
5.1	Mechanism Themes	190
5.2	Theme 1 - Physical activity is horses for courses	191
5.2.1	GWTWB quantitative findings.....	191
5.2.2	GWTWB – qualitative findings.....	194
5.2.3	Qualitative interviews - participants	194
5.2.4	Keeping fit and staying fit throughout life course	194
5.2.5	Own pace.....	195
5.2.6	Exercising outdoors	196
5.2.7	Exercise for a purpose	196
5.2.8	Hidden exercise.....	197
5.2.9	Hard graft but good.....	198
5.2.10	When physical activity gets too hard.....	199
5.2.11	Physical activity is not for everyone	200
5.2.12	Summary: Physical activity.....	200
5.3	Theme 2: Connect – teams, togetherness, tolerance and some turbulence	
	201	
5.3.1	GWTWB quantitative findings.....	201
5.3.2	GWTWB qualitative data analysis.....	204
5.3.3	Qualitative interviews – participants.....	204
5.3.4	Sense of team	204
5.3.5	Corporate teams	206
5.3.6	Turbulence	207
5.3.7	Getting to know the neighbours, workmates and reaching out to others.....	208
5.3.8	Forging strong relationships	210
5.3.9	Overcoming isolation.....	211
5.3.10	Balance of sociable and solitariness	213
5.3.11	Summary: Connect.....	213

5.4	Theme 3: Take notice and lose yourself in nature around you	213
5.4.1	GWTWB quantitative findings	214
5.4.2	GWTWB qualitative data analysis	216
5.4.3	Qualitative interviews – participants	217
5.4.4	Nostalgia and nature	217
5.4.5	New connections with nature	218
5.4.6	Awareness of existing nature connectedness	218
5.4.7	Moments of mindfulness	220
5.4.8	Searching for moments of mindfulness	220
5.4.9	Moments of calm	220
5.4.10	Permission to connect with nature	222
5.4.11	Summary: Take notice of nature	222
5.5	Theme 4: Learn something – ‘keep my little grey cells moving’	223
5.5.1	GWTWB quantitative findings	223
5.5.2	GWTWB qualitative data analysis	226
5.5.3	Qualitative interviews – participants	226
5.5.4	Being intellectually challenged	226
5.5.5	Pride leading to confidence	228
5.5.6	Shared learning experience	229
5.5.7	Recognition for learning	230
5.5.8	Summary: Learn something	230
5.6	Theme 5: Giving back – life stories unleash altruistic tendencies	231
5.6.1	GWTWB quantitative findings	231
5.6.2	GWTWB qualitative data analysis	234
5.6.3	Qualitative interviews – participants	234
5.6.4	Sense of place	234
5.6.5	Future generations	236
5.6.6	Being told to give back to the community	237
5.6.7	Summary: Giving back – life stories unleash altruistic tendencies	239
5.7	Theme 6: ‘Sense of self’ – ‘meeting me again’	239
5.7.1	GWTWB qualitative data analysis	240
5.7.2	Qualitative interviews – participants	240

5.7.3	Sense of Identity	240
5.7.4	Self-worth	242
5.7.5	Me-time	243
5.7.6	Life goals.....	244
5.7.7	Roles – vehicles for purpose or reaffirmation	245
5.7.8	Feeling recognised & valued.....	247
5.7.9	Behaviour change.....	248
5.7.10	Summary: ‘Sense of Self’ – ‘meeting ‘me’ again’.....	248
5.8	Summary of key mechanism themes	249
6	CHAPTER 6 FINDINGS - OUTCOMES	254
6.1	How enhanced wellbeing is expressed.....	255
6.2	Outcome 1: Hedonistic wellbeing – the buzz.....	256
6.2.1	GWTWB quantitative mood scores	256
6.2.2	GWTWB qualitative data	257
6.2.3	Qualitative interviews – participant.....	257
6.2.4	Summary of Outcome 1: Hedonistic wellbeing – the buzz.....	260
6.3	Outcome 2: Eudaimonic wellbeing – developing deeper determination....	261
6.3.1	Confidence	261
6.3.2	Positive affirmation.....	262
6.3.3	Summary of Outcome 2: Eudaimonic wellbeing – a sense of purpose and determination	263
6.4	Outcome 3: Creators, curators and custodians of spaces	263
6.4.1	Creating & curating spaces	263
6.4.2	Fixing spaces.....	264
6.4.3	Custodians and sense of ownership.....	264
6.4.4	For the love of Manchester:	265
6.4.5	Change in perception	266
6.4.6	Longevity of purpose.....	266
	Summary of Outcome 3: Creators, curators and custodians.....	267

6.5	Negative impacts – exploring the dark logic	268
6.5.1	Social dynamics	268
6.5.2	Participant and organisation dynamic	271
6.5.3	Braving (and embracing) the elements.....	273
6.5.4	Summary of Outcome 4: Negative impacts – exploring the dark logic	274
6.6	Measuring outcomes – tools of the trade	275
6.6.1	Differences in data collection between practitioners:	276
6.6.2	Right tool for the job.....	278
6.6.3	Awkwardness of using tools	279
6.6.4	Wellbeing tools need to be accessible:.....	280
6.6.5	Form fatigue	280
6.6.6	The ‘messy’ business of evaluation	281
6.6.7	Toolbox needed	282
6.6.8	Practitioner confidence in tools	283
6.6.9	Summary of ‘Measuring outcomes – tools of the trade’	283
6.7	Chapter 6 Outcomes - summary	284
7	CHAPTER 7 DISCUSSION	286
7.1	Introduction.....	286
7.1.1	Approach to Discussion.....	286
7.1.2	Theories used in this discussion.....	288
7.2	What works?.....	290
7.2.1	Understanding the drivers to ‘feeling good’	290
7.2.2	The Five Ways to Wellbeing	290
7.2.3	Being active – at one’s own pace!	290
7.2.4	Social connections – being part of the ‘tribe’	293
7.2.5	Taking notice – ‘quieting the chatter’	297
7.2.6	Learning – a means to personal growth.....	302
7.2.7	Giving back – big-hearts and some setbacks.....	305
7.2.8	Caring for the Planet – the sixth way to wellbeing?.....	307
7.2.9	Rediscovering sense of self – vitality & self-esteem	311

7.3	For whom? – Demographic considerations	313
7.3.1	Gender.....	313
7.3.2	Ageing and the life course	313
7.3.3	Culture & values	314
7.3.4	What works for whom? – Summary.....	315
7.4	What circumstances?	316
7.4.1	Pathways	316
7.4.2	Resources.....	327
7.4.3	What circumstances? – Summary	330
7.5	Discussion summary.....	330
7.5.1	Cumulative summary	331
8	CHAPTER 8 CONCLUSION	345
8.1	Objective 1 – Engage in real-life practice	346
8.2	Objective 2 – Understand better ‘what works for who?’	348
8.3	Objective 3 – Seek a greater understanding of ‘what circumstances’	351
8.4	Objective 4 – Contribution to the field	357
8.4.1	Limitations of the study.....	359
8.4.2	Recommendations for policy & practice	361
8.4.3	Recommendation for further research.....	362
8.5	Conclusion close	363
	REFERENCES	365
	APPENDIX A – APPRAISAL OF ORIGINAL LITERATURE REVIEW	385
	APPENDIX B – LONG LIST	387
	APPENDIX C - LOGIC MODELLING PROCESS.....	388

APPENDIX D – SEMI-STRUCTURED INTERVIEW SCHEDULE.....	394
APPENDIX E – PARTICIPANT INFORMATION SHEET	396
APPENDIX F – NUMBERS OF REFERENCES CODED TO THEMES	401
APPENDIX G – WHICH THEMATIC ANALYSIS?	403
APPENDIX H – MISSING DATA STATISTICS	408
APPENDIX I - MANIPULATION OF DATASETS	410
APPENDIX J - HOW THE DATA WAS CODED.....	415
APPENDIX K - GWTWB QUALITATIVE REFERENCES PRE ACTIVITY	421
APPENDIX L - GWTWB QUALITATIVE REFERENCES POST ACTIVITY ...	423
APPENDIX M - FOCUS GROUP SCHEDULES	426

Chapter 1 Introduction

1.1 Background

This research forms part of the growing movement to understand and evidence the role of green infrastructure (GI) providing ecosystem services in relation to human health and wellbeing (Gore et al., 2013; Dickie et al., 2017; Cook, Howarth & Wheater, 2019; WHO, 2016; Scott et al., 2022).

The conceptualisation of 'green infrastructure' is evolving (Wang & Banzhaf, 2018; Scott et al., 2022; Scott & Hislop 2024) but in a practical sense is widely recognised particularly in an environmental and planning context as 'a network of multi-functional green space and other green features, urban and rural, which can deliver quality of life and environmental benefits for communities' (Town & Country Planning Association, 2024). GI is multifunctional in that it simultaneously performs vital functions (ecosystem services) in helping to support mental and physical health (through access to nature and outdoor activity); mitigation and adaptation to climate change (carbon storage, natural flood management, air quality filtration and city cooling effect); biodiversity and habitats; economic growth (Town & Country Planning Association, 2024; Chatzimentor, Apostolopoulou & Mazaris, 2020; Natural England 2024; Landscape Institute, 2024; Scott & Hislop 2024).

GI includes all of the natural green elements or greenspace found at a neighbourhood level, such as parks, woodlands, open spaces, street trees, allotments (including 'blue infrastructure', e.g. canal and riversides, wetlands etc.), as well as private gardens, estates and reserves (Town & Country Planning Association, 2024; Natural England 2024; Landscape Institute, 2024; Wang & Banzhaf, 2018). This study is concerned with urban (including peri-urban/semi-rural) GI, typified as 'greenspace', found in the public realm, and wellbeing outcomes of a particular form of environmental citizenship.

1.1.1 Environmental citizenship

Environmental citizenship is a broad and difficult to define conceptualisation of a specific kind of pro-environmental behaviour undertaken by citizens who act as agents

for change through individual and collective actions to solve environmental problems (Dobson, 2010; Smederevac-Lalic et al., 2020). In summary, environmental citizenship is concerned with the active participation of citizens in moving towards sustainability. As a concept environmental citizenship encompasses more than biophilic (valuing nature) tendencies to broader environmental aims, it may include for example, embargoing plastic products and recycling (Hobson, 2013). Its manifestations have associated political theories underpinning the concept of 'citizenship', for example traditional liberal and republican (concerned with rights and justice) and emerging cosmopolitan formulations of citizenship (Cao, 2015). There are geographical connotations between Global North and Global South with environmental citizenship differing in ways depending on the geographical context. While environmental citizenship is an umbrella term and has various manifestations, the focus for this study is concerned with the act of participation in civic environmental activities that improve public realm greenspace.

For clarity, the focus of this study is not to be confused with environmental 'activism' and it is helpful at this stage in the thesis to highlight the difference between participation in civic environmental activity and environmental activism. For example, Reis (2020) acknowledges the concept of 'environmental activism' as being problematic and difficult to define, with social connotations which may conjure up negative images of public displays of protest, violent clashes, or even action without reflection (Freire, 1970). Reis (2020) and Hodson, (2014) provide a more positive articulation of activism being collective proactive actions which are research-informed and grounded in democratic principles to solve socio-environmental problems - for the greater good. Suffice to say, the point here serves to distinguish environmental activism from the phenomenon in question, that of participation in civic environmental activity, where participation is generally supported or facilitated through delivery organisations with a focus on hands-on custodianship to improve a place or space, in contrast to activists campaigning or lobbying for a cause (Reis, 2020).

Therefore, the focus of this study is participation in civic environmental activities. That is, where participants are potential agents for change in their own health and wellbeing

outcomes, whilst making a local contribution to GI, which in turn helps to contribute towards the relevant sustainable development goals, globally.

Civic environmental activity has been defined as *civic environmentalism* i.e. ‘voluntary communal actions undertaken to promote ecosystem sustainability’ (Townsend, 2006). In this definition, the phenomenon is framed as ‘environmental volunteering’ although participants may not see themselves as volunteers. For example, individuals and community groups may seek and engage with an organisation to *help them* achieve civic environmental goals (such as improving a green spot greenspace area in their neighbourhood). Alternatively, they may wish to connect with an organisation’s civic environmental goals aimed at facilitating community involvement through volunteering opportunities (to improve a green spot greenspace area in a neighbourhood). Therefore, how the activity is perceived, as volunteering or not, is perhaps largely dependent on how opportunities for involvement are promoted and the existing capacity of individuals and groups. Pathways to participation are an important part of the context to this study and are influenced by both the resources and capacity available to organisations (externally and internally) for outreach promotion and delivery, combined with the reasoning of the participants themselves, i.e., why and what their motivation is for involvement.

1.1.2 Civic environmental activity – role of creator, curator and custodian

Civic environmental activity in this study is being used to describe the process and ways in which people participate in developing, improving, nurturing and maintaining public realm urban green spaces. This can be described as people being creators, curators or custodians of urban green spaces in the public realm. The term ‘creators’ because they may create new greenspaces, the term ‘curators’ because they may be involved in the design of greenspaces and ‘custodians’ by playing a contributory role towards nurturing, maintaining, looking after green spaces. All three concepts depend on contextual factors, participant reasoning, capacity and resources available. The ways in which people participate and what they do varies but largely involves hands-on practical tasks such as (but not limited to) planting trees, conservation, horticulture and street-based greening in a public realm setting. Participation may also include

fundraising, advocacy, reaching out to others extending engagement into the wider community.

From an evidence-based perspective, the phenomenon of civic environmental activity may seem like a broad brush as it is difficult to define or categorise in current academic literature. However, from a practitioner perspective in the UK the phenomenon is conceptualised in business cases and funding bids. As a result, millions of pounds are invested by the UK government (Northern Forest, 2024), grants and trusts (Heritage Fund, 2024; Esmee Fairbairn, 2024) and increasingly the private sector, to support projects that benefit both people and landscapes (England's Community Forests, 2024). The phenomenon often forms the core aims and objectives of environmental organisations, with straplines *Changing Places*, *Changing Lives* (Groundwork, 2024) and initiatives such as *My Place* (Lancashire Wildlife Trust, 2021) and *Citizen Forester* (City of Trees, 2024). From an environmental practitioner perspective, the core purpose of environmental outreach programmes is to improve the quality of life for people through physical changes to the landscape and habitats within, to achieve an umbrella of social outcomes linked to health and mental wellbeing, e.g. social cohesion; strengthening community capacity cohesion; increased physical activity; fostering community spirit. Evaluations undertaken by practitioners for funders of this type of activity, (e.g. National Heritage Lottery Fund) have surmised wellbeing impacts of this phenomenon (Heritage Fund, 2024).

1.1.3 Urban greenspace as a medium to improved health and wellbeing

Gesler's (1992) work acknowledges the relationship between creating and developing landscapes and human flourishing and sense of identity. According to Mourato et al. (2010) there are biophysical pathways by which the natural environment and associated amenities affect physical and mental health. One biophysical pathway (Mourato et al., 2010) describes exposure to nature to alleviate stress and anxiety, also supported by Kaplan, (1989) and Ulrich (1983) these seminal works have long articulated the benefits of nature. Later work (such as Bird, 2007; Burls, 2007; Bragg & Atkins, 2016) focuses on the therapeutic biophysical pathway of practical activity leading to studies on the therapeutic value of horticultural activity in a natural setting (Howarth et al, 2016; 2020). Other biophysical pathways describe greenspace as a

catalyst or medium for physical activity (Mourato et al., 2010) and there is an increasing evidence base on the benefits of exercising in the natural environment.

From a policy perspective, the Department for Environment and Rural Affairs (DEFRA) released an Evidence Statement on the quantity of robust evidence that links the natural environment to health and wellbeing (Maxwell & Lovell, 2017). Their review stated that ecosystem services such as biodiversity provide an essential medium to support health and wellbeing (Maxwell & Lovell, 2017). This is illustrated in Cook et al., (2019) model of the relationship between engagement with nature and public health, (Figure 1). This model builds on previous work (Pretty, 2005; Bragg & Leck, 2017) and provides a useful illustration of how a deeper interaction with nature leads to public health outcomes and enhanced biodiversity (Cook et al., 2019). In a review of urban greenspaces and health, the World Health Organisation (WHO, 2016) highlight pathways to health and health-relevant indicators of urban green space, producing methodological tool kits for greenspace accessibility indicators. Later reviews conducted on urban greenspace and wellbeing focus on the relationship between the characteristics of urban greenspace and human wellbeing components (Reyes-Riveros, 2021; Pinto et al., 2022), highlighting the physical and biophysical pathways, the various methodologies and indicators available and the lack of a standardised conceptualisation of urban greenspace. More recently practical toolkits have emerged to address disparity in elements of urban greenspace such as tree canopy cover in relation to health and wellbeing (Tree Equity, 2024). Work such as Reyes-Riveros, (2021) and Pinto et al., (2022) call for more evidence that captures the congruence of physical aspects of urban greenspace and human health and wellbeing.

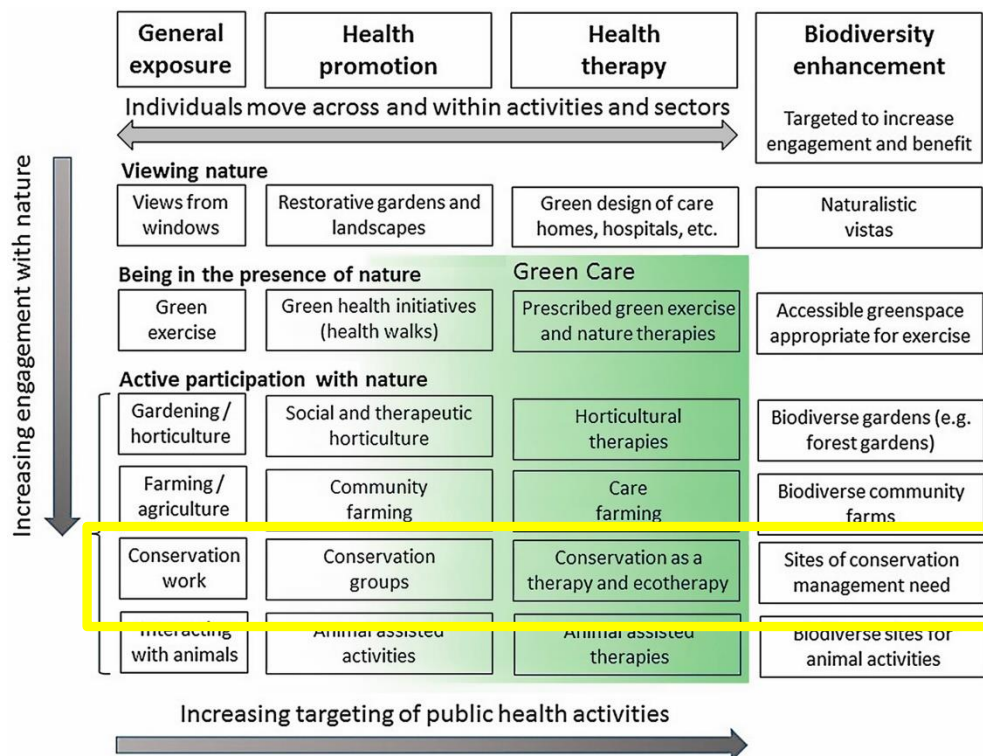


Figure 1 Cook et al., 2019 model of the relationship between engagement with nature, public health and biodiversity outcomes. The section highlighted in yellow has been added to highlight the relevance to this study.

This study sought to address a gap in the evidence base for an alternative pathway: exploring, understanding and capturing the wellbeing impacts that derive from people being a key driver and/or beneficiary in the development of GI within an urban neighbourhood setting, as highlighted in yellow in Figure 1. The section highlighted in yellow aligns with civic environmental activity, i.e. activity in a voluntary capacity that takes place specifically in public realm greenspace (rather than an enclosed nature reserve, for example). This particular phenomenon is framed in this study as a social programme based on factors that enable participation in activities in a voluntary capacity. Measuring impacts relating to subjective wellbeing and social programmes can be challenging, more of which will be discussed further into this chapter and the Methodology chapter.

1.2 Global context

1.2.1 United Nations Sustainable Development Goals

Civic environmental activity is significant in the global contemporary context and has links to the United Nations Sustainable Development Goals (United Nations, 2024). In the quest for sustainable development, defined as ‘development that meets the needs of the present, without compromising the ability of future generations to meet their own needs’ (United Nations, 2024), the United Nations (UN) produced and adopted a set of 17 Sustainable Development Goals (SDGs) in 2015, providing a central normative framework for sustainable development globally (United Nations, 2024).

The UN SDGs aim to promote action towards global peace and prosperity, whilst tackling climate change and biodiversity loss, stressing the interconnectedness and complexities of economic, social and environmental challenges. The SDGs bring forth key agendas exemplified by each ‘goal’ to the global stage for debate, discussion and action (United Nations, 2024). Since the introduction of SDGs, critics have argued that they have struggled to achieve transformative changes in policy and institutional structures (Biermann, et al., 2022). However, SDGs still form the blueprint for global political discourse, international treaties and shared ideals adopted widely by public, private and third sector organisations as the way to achieve on economic growth, increased social prosperity and environmental challenges.

The background to this study is concerned with five of the SDGs. To begin, three of these SDGs fit neatly and introduce the conceptual role of environmental citizenship, discussed next, namely: SGD 11 – create sustainable cities; SGD 13 - limit and adapt to climate change; SDG 15 – protect and restore terrestrial ecosystems (United Nations, 2015). The fourth SDG of relevance is: SDG 10 - reduce inequality, and this can be applied to the context of environmental inequalities (justice/injustice) as well as health inequalities, which links to the fifth relevant SDG 3: to ensure healthy lives and promote well-being for all ages. This study is concerned with the interplay between these SDGs, aiming to get closer to understanding how and why environmental citizenship, specifically participating in civic environmental activities, intersects with health and wellbeing.

1.2.2 COVID pandemic

In March 2020 the UK entered into lockdown in response to the global pandemic caused by widespread outbreak of Coronavirus, COVID-19. As the nation went into lockdown the importance of and inequalities relating to access to local greenspace were brought squarely into the spotlight (Gray & Kellas 2020). For many the lockdown, and restrictions on movement, meant that people discovered a new-found respect for their local greenspaces which offered some respite in the form of outdoor exercise, an opportunity to leave the confines of home, touch base with the natural world and feel a greater connection to their local community (Gray & Kellas, 2020). However, emerging studies report that inequalities in surrounding access to local greenspace were sustained and exacerbated during the lockdown periods. This highlighted that those who were less likely to access the benefits of their local greenspace were often on lower incomes, with greater health issues (Gray and Kellas, 2020; Burnett et al., 2021). A British Medical Journal opinion piece (Gray and Kellas, 2020) at the time of first lockdown, posed the question: *‘could there be a new form of social community asset volunteering drawing on skills of conservation and wildlife trust volunteers that will promote engagement with nature and appropriate social distancing in our green spaces?’* (Gray and Kellas, 2020). Therefore, the points presented here highlight the importance and opportunity to engage those in most need in civic environmental activity as a way to readdress both health inequalities and inequalities relating to having access to local natural environments.

1.3 National context

1.3.1 Environmental sector perspective

Much of the discourse around sustainable development is centred on a need for behaviour change in order to mechanise SDGs. One way to catalyse behaviour change is via policy that enforces fiscal incentives or penalties. It is acknowledged that Neoliberalism ideologies underpin the commodification of nature through market mechanisms aimed at plugging gaps in government funding (Apostolopoulou & Adams, 2017). An example of fiscal incentives uses the concept of natural capital, an

approach which is gaining increasing traction to fund nature recovery incentives (Clement, 2020) forming the basis of emerging ‘green finance’ (Green Finance Institute, 2024). The UK government aims to raise at least £500 million in private funding for nature recovery by 2027 (Natural Capital Committee, 2020) through funding mechanisms such as Biodiversity Net Gain (BNG) where developers are required to pay for environmental restoration projects where biodiversity loss has occurred as a product of development. This example shows that emerging financial mechanisms (such as BNG) are very likely to bring significant funding to nature recovery. However, there is wide debate over the use of market mechanisms to represent the value of nature (Apostolopoulou et al., 2019) with questions over distorting values, for example instrumental versus intrinsic value affecting personal and collective wellbeing (Chan et al., 2016). Emerging (although not fully operational) green finance models using natural capital accounting seek to extend a market driven approach to social outcomes, such as health and wellbeing, placing a monetary value on nature in the context of health, (Green Finance Institute, 2024) - although the metrics behind this remain sketchy. Dobson (2007) argues that behaviour change needs to be supported through an attitude change, typically characterised by environmental citizenship. This study explores this notion further by delving into the reasoning and motivations behind participation in civic environmental activities.

1.3.2 The green health agenda

The relationship between health and access to greenspace is now widely accepted and has been reflected in policy for well over a decade, for example the Marmot Report (2010) and DEFRA’s White Paper ‘*The natural choice: securing the value of nature*’ (2011) supporting the benefits and value of greenspace in improving people’s physical and mental health.

Since then, from a health sector perspective, there has been a movement to mobilise a shift towards a pro-active salutogenic (Antonovsky, 1979) approach to health and social care. The concept of salutogenesis asserts that humans need to maintain a level of ‘wellness’ through proactive ways which support health and wellbeing, rather than pathogenic, reactive actions to address disease (Antonovsky, 1979). A public health priority is to improve population wellbeing or ‘wellness’ as a preventative measure for

reducing serious health issues, relating to both physical and mental health (Public Health England, 2024). For example, the Greater Manchester Population Health Plan (2017) states that prevention and self-care is a priority for public health as a way to tackle health issues (such as heart disease, loneliness, anxiety), health inequalities and consequently the soaring cost to the NHS.

However, the value of ecosystem services (Tzoulas et al., 2007; DEFRA, 2018) is still not fully realised by the health sector (Bragg & Atkins, 2016). This is partly due to the lack of awareness of the concept, functionality and jargon surrounding GI and ecosystem services beyond the environmental sector and emphasises the need to mainstream GI into policies outside of environment and planning (Scott & Hislop, 2024; Scott et al., 2022; Scott et al., 2018). The potential for GI, and indeed '*every bit of nearby nature*' (Wolf, Krueger, & Rozance, 2014) to be part of the solution to health and wellbeing issues is recognised at a government and policy level (NICE, 2018; Marmot, 2010; Forestry England, 2024). This sentiment is reflected in national strategic visions and action plans concerning spatial GI and social outcomes. For example, the Northern Forest initiative (Northern Forest, 2024) along with other national based environmental bodies (DEFRA, 2018), seeks to increase at scale the opportunities for populations to realise the health benefits of GI. However, the devil is in the detail as to what this means on the ground.

From an environmental practitioner perspective, there is a growing movement to understand and evidence the role of GI in human health and wellbeing (Bragg, Wood & Barton, 2013). However, first there is a need to better define the terminology and types of activity settings that take place in natural environments that may be linked to health benefits. Bragg and Atkins, (2016) visual diagram (Figure 2) provides a helpful illustration which describes how an individual may engage in nature. These opportunities range from: everyday life (general population as part of lifestyle choice); through a health promotion initiative (general population/'vulnerable' groups engaging through choice or through suggestion by health/social worker); green care (people with 'defined need' engaging as part of care or treatment package) (Bragg & Atkins, 2016). As Figure 2 illustrates, the three columns are stages on a continuum, i.e. individuals may move between 'everyday life' or 'green care' depending their needs (Bragg & Atkins,

2016). Figure 2 highlights important distinctions between the stages for example, organisations delivering ‘green care’, nature-based activities are described as ‘interventions’ for individuals with a ‘defined need’ (Bragg & Atkins, 2016). Moving away from the ‘green care’ model for those with a ‘defined need’, and into the general population, the role of civic environmentalism falls into ‘everyday life’ activities and ‘health promotion’ nature-based activities (this has been highlighted within an additional yellow box), in line with public health priorities as previously discussed.

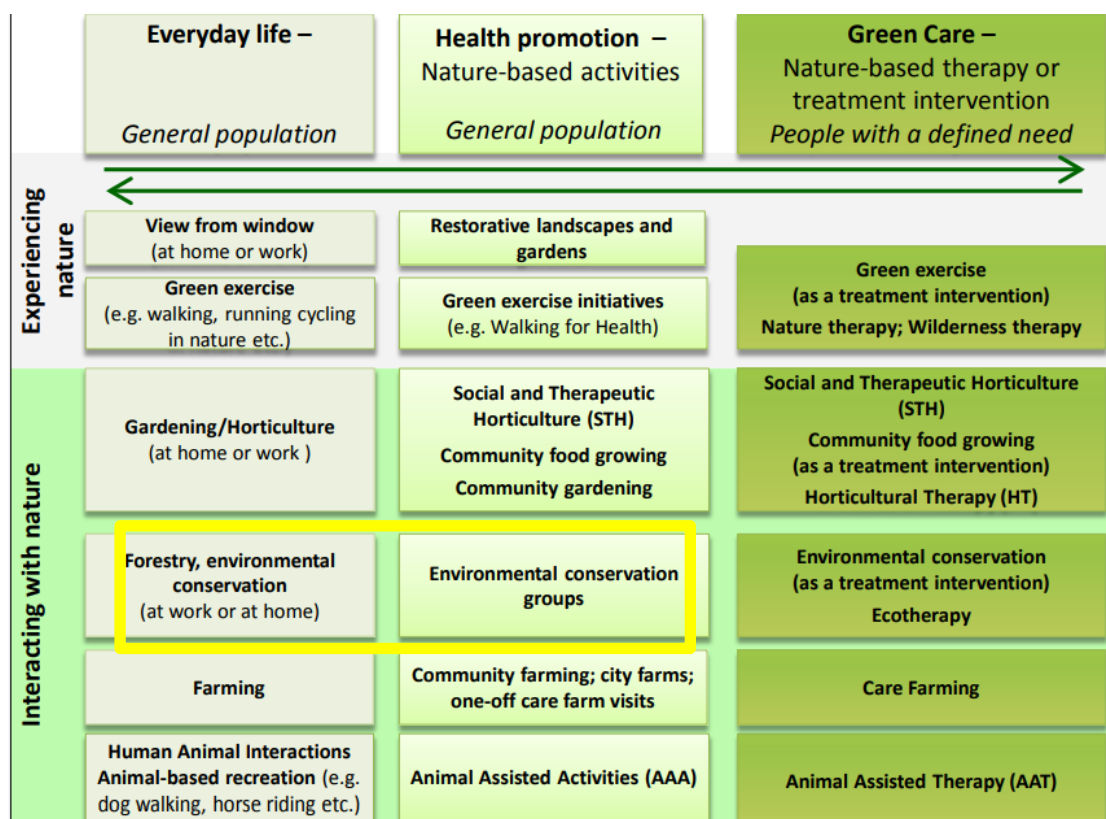


Figure 2. The different contexts in which an individual may engage in nature, (Bragg & Atkins, 2016 pg. 22). The section highlighted in yellow has been added to highlight the relevance to this study

The gap this study seeks to address is the potential for civic environmental activity to address public health priorities around prevention of ill-health. In contrast, more work has been done on structure therapies for defined populations, such as therapeutic gardening (Howarth et al., 2016; Howarth et al., 2021) and Care Farms (Bragg & Atkins, 2016; Gibbons et al., 2017). As discussed, one of the challenges is defining the phenomenon itself which is often defined as volunteering. Volunteering is positively related to physical activity and self-reported health (Pillemer et al., 2010). However, as

discussed it is debatable whether local communities undertaking greening initiatives such as ‘In-Bloom’ (RHS, 2024) and Green Streets (TMF, 2024) would categorise themselves as ‘volunteers’ as such, even though their actions could fall into how volunteering is defined. Volunteering defined as an activity that involves spending time in an unpaid capacity to undertake actions that aim to benefit the environment or others beyond family members (Murphy, Wedlock & King, 2005). Furthermore, existing research such as O’Brien, Townsend and Ebdon, (2008), has focused on volunteer activity within enclosed nature reserves as opposed to the incidental public realm greenspaces found at a neighbourhood level.

To summarise, the green-health movement needs to find more ways in which to bridge a disconnect between GI and the health sector. As will be discussed further into the thesis, the disconnect is partly due to a difference in cultural paradigms, particularly around evidence. Barriers are also created through institutional and sector silos and a call to create bridges and a common language to transcend GI into broader sectors such as health (Scott & Hislop, 2024, Scott et al., 2018) is a key challenge.

1.3.3 Social Prescribing

Since its emergence, social prescribing has been broadly understood as a means by which clinical and community services can link individuals who have psychological, social and/or practical needs with non-clinical services within their local community (Polley et al., 2017; South et al., 2008; Bertotti et al., 2018; Liebmann et al., 2022).

Recently, work has been conducted to build a common understanding of what social prescribing is (Muhl et al., 2023; Muhl et al., 2024), producing global consensus on the definition of social prescribing:

a means for trusted individuals in clinical and community settings to identify that a person has non-medical, health-related social needs and to subsequently connect them to non-clinical supports and services within the community by co-producing a social prescription – a non-medical prescription, to improve health and wellbeing and to strengthen community connections (Muhl et al., 2023, p. 9).

Despite the recent consensus on the definition of social prescribing, Bertotti (2024) highlights the ongoing debate around the concept of social prescribing in practice: at one end a structured ‘pathway’ via a network of GPs’, community link-worker roles and the Voluntary Community and social Enterprise (VCSE) sector and on the other hand an ‘approach’ encompassing activities led by the VCSE sector. The voluntary sector is recognised for playing a key role in promoting and sustaining community health, and social prescribing is a mechanism for ‘bridging the gap’ between voluntary sector, charitable organisations and primary health care (South et al., 2008; Bertotti, 2024). Environmental charities and organisations under VCSE umbrella therefore lend themselves to be part of the social prescribing movement which is gaining momentum (Bertotti et al., 2018). Bickerdike et al. (2017) conducted a systematic review to assess the effectiveness of social prescribing and found insufficient evidence to conclude effectiveness or value for money due to the small-scale nature and poor design of research, as well as lack of validated measuring tools. Since then further studies have taken an alternative approach to traditional positivist experimental analysis, to understand better the *how* and *why* dimensions, using realist evaluation approaches to understanding social prescribing systems as social programmes (Bertotti et al., 2018; Husk et al., 2020; Bertotti et al., 2024; Haywood et al., 2024; Sun et al., 2023).

Van den Berg (2017) highlighted the use of existing health promotion exercise referrals and models based on ‘products’ such as Green Gym or Health Walks, which are designed to engage people in green exercise but are not always appealing or accessible to the wider community. These types of health promotion models (see Figure 2) neatly aligned to the emerging green social prescribing scene. Since then however, the green social prescribing movement has focused attention on ‘green care’ (see Figure 2) with therapeutic nature-based activities catching the attention of health and governmental departments, seeking to understand implications for funding and policy. In 2021, Natural England, NHS England, DEFRA, the National Academy for Social Prescribing (NASP) and other key national bodies were awarded government funding, to lead a Green Social Prescribing Test and Learn programme across England. Seven test and learn sites were identified, one located in the Greater Manchester region, which concluded in March 2023. Findings published in the report (NASP, 2024) stated that

green social prescribing can significantly improve mental health outcomes, help to reduce health inequalities and reduce demand on the health and social care system (NASP, 2024). The report stated that using ONS4 measure findings showed that happiness, life satisfaction and feeling worthwhile had increased whilst levels of anxiety had reduced for participants. The more detailed version of the report (Haywood et al., 2023) cited limitations to findings for example, due to some incomplete datasets across the programme and not being able to discount external factors such as antidepressants possibly having an impact on data rather than green social prescribing activities.

Reviews and studies call for further attention from an academic perspective, through research involving movements and organisations delivering grassroots, community and urban greening initiatives (Bertotti et al., 2018; Howarth et al., 2020; Liebmann et al., 2022; Wood et al., 2022; Sun et al., 2023; de Bell et al., 2024) to create green, vibrant and healthy communities (Cook, Howarth & Wheeler, 2019).

1.3.4 The Greater Manchester Context

In 2015, a Memorandum of Understanding was agreed with Public Health England and NHS England to transform population health, devolving the health budget to the Greater Manchester Combined Authority and new Health & Social Care Partnership (Walshe et al., 2016). This change in governance aimed to improve population health for Greater Manchester's (GM) 2.6 million population and reduce health inequalities within GM, and between GM and England (Walshe et al., 2016). As part of the reforms, it was hoped there would be a greater emphasis on tackling costly health problems upstream, and a declaration that a public health priority would be centred on prevention, self-care, self-agency, early intervention. Thus handing back the responsibility of better health to the population, as seen in the GM Population Health Plan (GMPHP, 2019) and GM Mental Health & Wellbeing Strategy (GMMHWS, 2019).

Population health and wellbeing is a priority in a swathe of GM Strategies and plans (see Figure 3), including Places for Everyone, GM 5 Year Environment Plan (Greater Manchester Combined Authority, 2024a), GM Local Industrial Strategy (GMLID, 2024), and All Our Trees: GM Tree and Woodlands Strategy (City of Trees, 2024). The social prescribing movement is progressing rapidly within Greater Manchester supported by

the academic, local health partnerships and practitioner communities. For example, the University of Salford and Edge Hill University are driving forward best practice nationally through the National Social Prescribing Network (NASP), holding the 1st International Social Prescribing Research Network Conference (SHUHU, 2021).



Figure 3. The Greater Manchester Strategy (GMCA, 2024b)

More recently, the GM Health & Social Care partnership with local delivery partners were one of the previously discussed (section 1.3.3) Green Social Prescribing Test & Learn projects (Social Prescribing Academy [SPA], 2024), a pilot for developing green social prescribing, performing test and trials on nature-based activities and to kick start the development and understanding of the virtual infrastructure needed to facilitate a flourishing green social prescribing movement across GM (GM Integrated Care, 2024). As well as the report (SPA, 2024) (described in section 1.3.3) one of the outcomes of this work was the inception of the Nature for Health Network (NFH, 2024) set up to support the needs of practitioners (500+), delivering nature-based activities for health and wellbeing outcomes, with a focus on supporting the green social prescribing pathway.

Case studies and data collection for this study was enabled by a partnership between the University of Salford and a number of organisations working on the ground in GM to

deliver outreach programmes involving civic environmental activities to improve green public realm. Case studies using City of Trees (City of Trees, 2024), a community forestry charity that aims to create a greener Greater Manchester through civic environmental activity and the RHS Bridgewater which is enthusing and inspiring civic movement to grow plants in their neighbourhoods following the opening of the Bridgewater Garden in the spring of 2021 (RHS, 2024). City of Trees and RHS Bridgewater were the original case study organisations for this study. However, data in the form of questionnaires was also collected through other 3rd party organisations' projects, namely Groundwork (2024) and TCV (TCV, 2024) over the course of the study. All organisations are members of the Greater Manchester Nature for Health Network. Each organisation shares a common goal of facilitating civic environmental activity to improve public realm and all organisations seek to understand better the wellbeing outcomes of their community outreach work, building on the findings (see section 1.3.3) from the Green Social Prescribing Test and Learn pilot of which they were part (Social Prescribing Academy, 2024).

1.4 Challenges around evidence

There are numerous validated tools to gather physical health, mental health and wellbeing impacts, and a key overarching challenge is any consistent application of methods due to the heterogeneous nature-based activities and populations. However, one challenge to evidencing wellbeing impacts relating to civic environmental activity (the phenomenon in question) is the lack of a recognised or validated way to understand wellbeing impacts that are appropriate to participants' experiences, in the context in which they are set. The ability to collect validated evidence is important because it will inform best practice, potentially influence policy and provide evidence of outcomes for stakeholders, particularly those involved in social prescribing.

Another key challenge in developing robust and consistent methods to strengthen the evidence base is the subjective nature of wellbeing leading to heterogeneous outcome measures. The subject of wellbeing has been studied for over 20 years in the field of psychology focused on exploring subjective wellbeing in a way which reflects a personal state of mind, rather than objective impacts. Hence, researchers such as Deci

and Ryan (2006) advocate self-evaluation ‘*the idea is for people to evaluate for themselves*’ (Deci & Ryan, 2006).

The final challenge to note is on the issue of standards in evidence and attribution. Wellbeing is both subjective in nature and open to outside influences, and variables, and considerable complexities that bring about difficulty in assigning attribution, cause and effect. Guidance on standards of evidence for impact investing (Puttick & Ludlow, 2012) sets standards for investment for complex health and social needs, stipulating the RCT gold standard as investment worthy as illustrated in Figure 4. This conflict over standards of evidence, or what constitutes scientific evidence is not new and resonates with Kuhn’s (1987) *science wars* (Ashman & Baringer, 2001). The prevalence of the positivist paradigm remains the prominent discourse within the health sector. However, there is a growing recognition that this needs to change to accommodate the social prescribing movement (Bragg & Leck, 2017). The implications on standards of evidence from a realist perspective are discussed further in Chapter 3 section 3.2.3

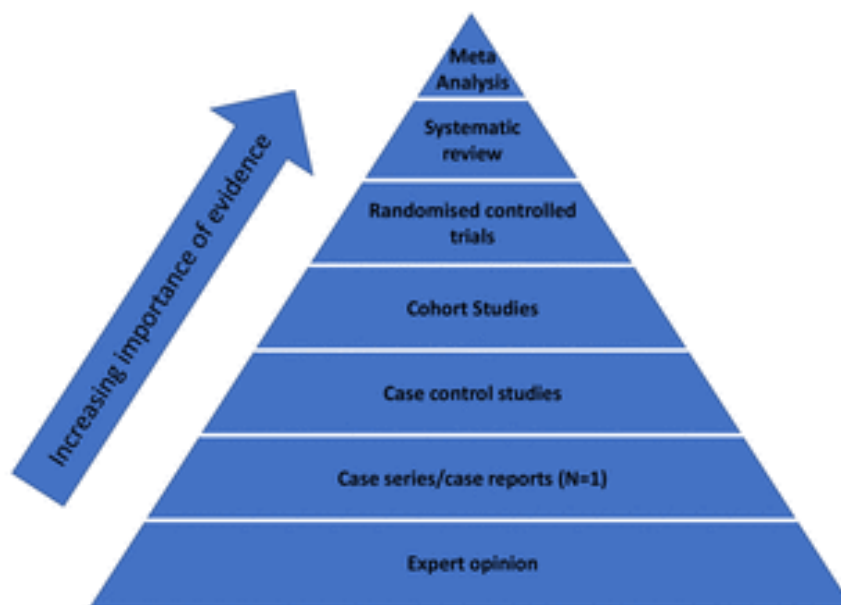


Figure 4. Evidence based practice hierarchy of evidence (Unwin, 2024)

1.5 Wellbeing models

In order to explore wellbeing derived from the phenomenon, a recognised wellbeing model was sought to provide a framework to explore the mechanism(s) for enhanced wellbeing through participation.

There are a number of wellbeing models that are recognised in the fields of health and psychology. For example, Diener and Ryan's (2009) Tripartite Model of Subjective Wellbeing which presents wellbeing as a general evaluation of an individual's quality of life in terms of three key components: 1. Life satisfaction assessment of the balance between positive and negative affect in one's life including aspirations and goals. 2. Positive affect (pleasurable feelings). 3. Negative affect (painful feelings (Diener & Ryan, 2009)). Another example is Seligman's (2011) PERMA model which identifies 5 essential elements to wellbeing: 1. Positive emotions; 2 Engagement in Activities; 3 Relationships that are positive; 4. Meaning and purpose; 5. Achievement. Neither of these tools offered a user-friendly experience for collecting subjective self-reporting wellbeing out in the field, nor are a good fit for capturing participant experiences in real-time, i.e. over a session.

A change in approach to using a wellbeing model could have been to use a behaviour change model such as the widely recognised COM-B model and framework (Michie, Van Stralen & West, 2011). The COM-B model proposes three necessary components for any behaviour (B) to occur by assessing capability (C), opportunity (O), and motivation (M), and is used by leaders, policymakers and behavioural scientists to understand why a specific behaviour occurs and how to create targeted interventions that lead to effective change (Michie, Van Stralen & West, 2011). However, this model too did not seem an appropriate fit either for self-reporting relating to the context by which activities offered and the importance of using this tool in the right context is key to its use (Michie, Van Stralen & West, 2011).

In line with Deci and Ryan, (2006), it was important to use a model whereby people would evaluate for themselves their experience. One way for participants to understand ways (or actions) to improve their wellbeing and reflect on how this might fit with their motivations for participation is through the New Economics Foundation's Five Ways to Wellbeing (Aked et al., 2008). The Five Ways to Wellbeing was produced as a generic

set of actions with broad appeal to enhance personal wellbeing through a set of ‘ways’ individuals could understand and undertake.

1.5.1 Five Ways to Wellbeing (Aked et al., 2008) Framework

In 2008, the New Economics Foundation, an independent think-tank, launched the *Five Ways to Wellbeing* (Aked et al., 2008), a set of evidence-based actions that by undertaking (through an undescribed medium or activity), would lead to a greater sense of wellbeing. The Five Ways to Wellbeing i.e. *connect, be active, take notice, learn, give*, (Aked et al., 2008) has been adopted by the NHS and public health initiatives and was developed with the end-user (the participant) in mind, therefore this has been used as the wellbeing framework within the design of the realist evaluation methodology. The study sought to understand how participant’s experience of taking part in activities relates to the Five Ways to Wellbeing and whether a sense of wellbeing or ‘wellness’ is an outcome of their experience based on each of the five ‘ways’. This is covered in greater detail in Chapter 3 Methodology.

1.6 Research aim & objectives:

The study undertook a mixed methods enquiry, using a realist evaluation approach to forge a deeper understanding of how, why, for whom, and in what context, does participation in civic environmental activity lead to increased wellbeing or not (unintended outcome). The Five Ways to Wellbeing (Aked et al., 2008) was used as a framework to guide the enquiry and underpins the sub-hypotheses in the realist methodology to seek a greater understanding of causal powers that may lead to increased wellbeing (or not). This is covered in much detail in Chapter 3, Methodology. For clarity, the term ‘activities’ is used throughout this study to mean civic environmental activities, i.e. activities as described above taking place in public realm greenspace.

1.6.1 Aim

The study aimed to gain a deeper understanding of whether participating in civic environmental activities lead to increased wellbeing (or inverse). This is the overarching aim. This study has been conducted using a realist evaluation approach (discussed in

depth in Chapter 3). The aim of a realist evaluation is to directly apply and address the question (Pawson and Tilley, 1997; Ramesesproject, 2024; Better Evaluation, 2025):

What works for whom and why and in what context?

Therefore, a second step was taken to integrate the over-arching study aim into the realist evaluation aim, to produce a ‘realist evaluation’ version of the aim: - this study seeks to gain a deeper understanding of what works for whom and why and in what context (circumstance) does participating in civic environmental activities lead to increased wellbeing (or inverse)?

Guidance suggests that objectives in a realist evaluation should be framed around the realist evaluation question (Pawson and Tilley, 1997; Ramesesproject, 2024; Better Evaluation, 2025), therefore this approach has been incorporated into the objectives below to ensure the study aim is addressed.

1.6.2 Objectives

- To generate insight into civic environmental engagement practices in the Manchester and Salford City Region through analysis of key case studies, including the nature for Health Network and associated organisations, RHS Bridgewater and City of Trees.
- To develop an understanding of how and why wellbeing outcomes (or inverse) may be derived through which civic environmental activities, using a realist evaluation approach, and the Five Ways to Wellbeing framework to guide the enquiry (Aked et al., 2008).
- To identify and explain contextual factors that contribute to the success of the phenomenon, including pathways such as green social prescribing to address the public health and environmental agendas.
- Produce a robust rationale and framework to guide the development and delivery of nature-based activities as part of urban greening initiatives for health and wellbeing outcomes, as a contribution towards the green social prescribing movement and wider green health agenda.

1.7 Summary

This study makes a contribution to the growing body of evidence relating to the comprehensive topic of GI and human health (Cook, Howarth & Wheeler, 2019). In its broadest context, this study explores participants as potential agents for change in their own health and wellbeing outcomes, whilst making a local contribution to GI, which in turn helps to contribute towards the relevant sustainable development goals (SDGs 3, 10, 11, 13 & 15) globally (United Nations, 2024).

More specifically, this study contributes to the growing body of evidence on nature-based activities for health and wellbeing as part of the green health agenda. The research is significant and timely as there is a need to understand the contextual factors that link the environmental and health sectors with participant's experiences and outcomes in an effort to break down silos and create 'hook's that enable common aims and objectives to be achieved (Scott et al., 2018; Scott et al., 2022). Nature-based activities for health and wellbeing, and in particular, green social prescribing, are fields of work that are evolving at pace in both academia and practice (Bertotti, 2024; Bertotti et al., 2024; Howarth et al., 2020). This study will help address the current shortage of evidence in this area and provide real-world value to practice in this dynamic environment.

The participant experience underpinned by their own self-determination is a key concern of the health sector which is seeking opportunities and innovative solutions to encourage population self-care, lifestyle choices and activities to promote salutogenic 'wellness' (Antonovsky, 1979), prevent future ill health and manage health issues upstream. Linked to participant experience, the contextual factors are an important part of the story as they relate to both the rationale and resources that support the phenomenon.

This study undertakes a realist evaluation approach to develop a closer understanding of wellbeing outcomes derived from participation in civic environmental activities in the context of urban public realm greenspace. The methodology and study design takes into account different stakeholder perspectives (both participant and practitioner) to understand better *what works for whom and in what circumstances?* (Pawson & Tilley, 1997). The methodological approach aims to contribute towards the growing body of

work in conducting research and reviews using a realist evaluation methodology in a health and green health arena (Bertotti et al., 2018; Tierney et al., 2020; Husk et al., 2020; Haywood et al., 2024). This study brings together participant and practitioner perspectives and other relevant contextual factors, thus bringing unique and additional insight to the knowledge base as well as implications for nature-based activities as part of the growing green health movement.

1.8 Positionality

My ontological assumptions and my perceptions of what is knowable about the world have influenced my epistemological assumptions which are reflected in my decision to adopt a realist philosophical and realist evaluation approach to the study.

Positionality both describes an individual's world view and the position they adopt conducting research within its social and political context (Holmes, 2020; Savin-Baden & Major, 2013). The positionality of the researcher is unique and influences all aspects and stages of the research process. Hence, the positionality statement provides insight into researcher's world view to enable an understanding of the ontological perspectives (Holmes, 2020):

My positionality is a significant component of this thesis as it presents the 'Insider-Outsider' perspective as advocated by Merton, (1972). On reflection, and through undertaking this research, I have concluded that I am without doubt an 'Insider'. Over the past 20 years I have worked in the field of community forestry across Greater Manchester. Having made the leap from the media industry I joined Red Rose Forest, now known as City of Trees, gathering experience and expertise in community engagement in various roles over that time. My background in community engagement led to me undertaking an MSc in Dementia, Care & Enabling Environments applying the concept of public realm greenspace as an enabling environment for people affected by dementia. This PhD was heavily influenced by the MSc and further fueled my desire to gain a deeper understanding of the relationship between GI in an urban setting and quality of life for everyday people. Five years ago, I took the role of Chief Executive Officer at City of Trees, during which time, my interest and growing expertise in certain aspects of green health has developed. I now Chair the newly formed Greater

Manchester Nature for Health Network enabling greater influence on both policy and practice.

My work background is unusual in that I hold a senior position in the Forestry sector, as a female, and have no formal qualifications nor significant expertise in forestry or ecology. I have always seen this difference in background knowledge as an advantage in practice because I can empathise with the layperson's perspective relating to the ecological aspects of the natural world. For example, whilst I appreciate natural outdoor environments, I am not an expert in flora and fauna and the biological aspects of forestry. This lack of 'expertise' has been helpful in outreach work which has particularly been aimed at engaging individuals and communities that are neither nature experts nor necessarily nature enthusiasts. My expertise is in the functionality of GI and my interest specifically is around people's relationship with urban green space - how and why individual access, interact, engage and become disengaged from natural green infrastructure and its components.

The 'Insiders' advantage has provided me with easy access to the culture and insight into the context and subsequently I am able to offer thick authentic description. However, these advantages can be equally viewed as being disadvantageous – overly sympathetic to culture, myopic, too close making too many assumptions (Merton, 1972; Martin, Desing & Borrego 2022; Holmes 2020). A positionality statement cannot simply override this conundrum. Martin, Desing & Borrego (2022) advocate positionality is a deep exercise in reflexivity conducted throughout every stage of the research process, for transparency and to disrupt as much as possible, privilege and bias (Secules et al., 2021). Therefore, I have adopted a reflexive approach (see 3.1.4) and this thesis describes the ongoing process of reflexivity that I have undertaken throughout the work.

This study is underpinned by realist philosophy, and therefore a realist approach has been undertaken in every aspect of the study, guided by best practice in realist evaluation (Ramesesproject, 2024). To illustrate this position further the next chapter discusses the realist perspective used to explore current literature on the phenomenon of civic environmental activity for wellbeing. A realist evaluation approach has enabled me to elucidate the phenomena, and the insider/outsider perspective has enhanced

this process. Within this paradigm, the stakeholder provides a welcome piece of the jigsaw in understanding the phenomenon (Pawson & Tilley, 1997).

.

2 Chapter 2 Literature Review

The purpose of a literature review is to set the context by which the study relates to previous work in a related field, identify gaps in research and opportunities to extend prior research (Cresswell, 2009). In a realist review, according to Wong (2018), gathering data from literature is integral to the process of postulating the programme theory (Wong, 2018; Pawson et al., 2004). Realist evaluation incorporates a theory of change, i.e. programme theory as a way to explain how and why a phenomenon may lead to a desired outcome (Pawson & Tilley, 1997). A programme theory has a set of hypotheses to test the theory using a realist approach (Westhorp et al, 2011).

Therefore, in this instance the programme theory sets out to explain how, and why if civic environmental activity leads to increased wellbeing (desired outcome).

In line with the theoretical underpinning of this study, a realist approach has been used for this literature review. A realist review can take the form of several guises, depending on the objectives of the review (Pawson, et al., 2004). The overall purpose of this review is to review the integrity of the programme theory. This is recognised as a specific aim within the practice of conducting realist reviews (Pawson, et al., 2004) and an approach often adopted by theories-of-change evaluations which explain a programme as a series of steps to achieve an outcome. In this approach, the aim is to strengthen (or refute) the programme theory through existing evidence and look for weaknesses in the evidence within the ‘stepping-stones’ to achieve the outcome (Pawson, et al., 2004). Therefore, this review seeks to find what evidence there is to support the overarching programme theory hypothesis that engaging in civic environmental activity increases wellbeing. This hypothesis is deconstructed and reconstructed as part of the search strategy, discussed later in this section. In summary, the purpose of this review in taking a realist approach, is to review the integrity of the programme theory, the task is to *find and align* evidence (Ramesesproject, 2024) from literature to support or refute the programme theory.

Unlike Cochrane-style systematic reviews that are designed to be comprehensive and will aim to unearth every article or piece of evidence that is available on a narrow, specific research question, a realist review aims to produce explanatory theory.

Explanatory theory provides the evidence necessary to develop and test a coherent and plausible theory and saturation point is achieved if, or once, the researcher is satisfied that there is enough evidence (or not) to support the theory and that evidence is reasonably coherent, plausible and comprehensive (Ramesesproject, 2024).

One important point made by quality standards for realist reviews is that they should not be driven by the traditional hierarchy of evidence, that is, randomised control trials (RCTs). RCTs should not be the pinnacle; instead data should be sought that develops, refines or tests the programme theory (Wong 2018; Ramesesproject, 2024). The demotion of RCTs as gold standard of evidence in realist reviews is still being debated between realist reviewers and more traditional systematic reviewers (Booth, Wright & Briscoe, 2018). Kane et al., (2010) trialled a realist review using only RCTs as data and found that the realist hypothesis was supported by information about the intervention but lacked information about the context (Kane et al.,2010). Realist reviews therefore seek to explain phenomena rather than simply quantify the effects (Wong, 2018).

Ramesesproject (2024) has produced guidance in the form of quality standards for conducting a realist review, and recommends:

- Searches are driven by objectives and focus of the review
- Search strategies are piloted to ensure the approach is fit for purpose
- Evidence is sourced from an unrestricted range of sources with relevant data for theory refinement and testing
- Searches continue in an iterative fashion in light of greater understanding of the topic or to understand further detail around processes
- Data should be sought from knowledge derived from beyond the area of study if there are reasonably inferred mechanisms

The Ramesesproject (2024) guidance is helpful in providing quality standards. A potential challenge to appraising literature to explain a phenomenon rather than quantifying effects is addressing issues around bias of papers included. To address this challenge a full explanation of the methodical approach is needed in conducting the literature review. The Ramesesproject (2024) quality standards guidance recommend conducting a pilot literature review to reflect and learn from

the challenges. A pilot was undertaken, and reflections can be found in Appendix A 'Appraisal of the original literature review'.

2.1 Realist literature search strategy

As discussed, in a realist review, the review sets out to test or strengthen a theory. Therefore, what is considered as valid evidence is different to other reviews. For example, data are not placed in a hierarchy of evidence but are instead ranked by relevance in relation to the research question. Realist reviews should not employ methodological filters or any associated hierarchy of evidence (such as requirement to be an RCT) as this runs the risk of excluding data relevant to the programme theory. The process is iterative and new leads or findings may need to be explored to understand specific parts of the programme theory, such as contextual factors or causal mechanisms which lead to outcomes and new searches for evidence will refute and refine the programme theory narrative.

The first stage should involve initial searches undertaken to develop the programme theory. At this point it is not necessary to undertake a systematic approach. However, once the process moves to the second stage, understanding the processes within the programme theory, such as the contextual factors and causal mechanisms that lead to outcomes, the searching process should be focused, systematic and transparent, guided by the review objectives and revised iteratively (Pawson et al., 2005).

A programme theory is dynamic, emergent and complex, offering a potentially unmanageable number of lines of enquiry, and sourcing literature can compare to searching 'needles in haystacks' (Wong, 2018, p.131). To overcome this challenge, Booth, Wright and Briscoe (2018) advocate the need for a creative, flexible, structured and transparent approach to undertaking a realist literature review. The literature review for this study was designed to be undertaken in two stages. The first stage involved scoping and searching the literature using key terms to identify emerging themes to formulate the programme theory (Emmel et al., 2018). The second stage was to refine the programme theory, to understand the underlying processes using the Five Ways to Wellbeing (Aked et al., 2008) as a series of sub-searches with a more defined

set of key words. The rationale for using the Five Ways to wellbeing is explained in Chapter 1 Introduction, section 1.5.

In line with a realist review (Wong, 2018) a systematic review of the literature was not an appropriate search strategy for this study as it is too prescriptive. For example, public realm 'greenspace' has multiple definitions. Furthermore, inclusion and exclusion criteria based on a high number of greenspace descriptors would return too many records to be manageable, and being too prescriptive may have resulted in papers missed relevant to the subject area. This is exactly what a realist review wishes to avoid as the review seeks to populate a programme theory, and this requires exploration of literature beyond a finite set of criteria (Wong, 2018). A practical approach was taken to define civic environmental participation, and therefore 'volunteer' has been used as the best descriptor for the searches.

2.1.1 Search questions

Programmes and interventions are dynamic, open systems, complex and multifaceted. Therefore, a realist review could potentially include an almost infinite number of avenues, leads, lines of enquiry, it is necessary to focus or 'contain' a review (Pawson et al., 2004). This is done by applying a search question, and sub-questions to guide the search strategy.

The main search question sets out to retrieve literature to support the overarching programme theory and this is employed at the first stage of the literature review. The main search questions is:

What evidence is there to support the following hypothesis, that:

- Participation in civic environmental activities leads to increased wellbeing

The sub-questions are to search for evidence to refine the programme theory and seek evidence to support the causal mechanisms operating within the overarching programme theory. These are based on the Five Ways to Wellbeing (Aked et al., 2008).

The sub-questions are:

What evidence is there to support the following sub-hypothesis, that:

- Participation in civic environmental activities increases social cohesion, leading to increased wellbeing

- Participation in civic environmental activities increases physical activity, leading to increased wellbeing
- Participation in civic environmental activities increases nature connectedness/mindfulness, leading to increased wellbeing
- Participation in civic environmental activities provides learning opportunities, leading to increased wellbeing
- Participation in civic environmental activities facilitates a sense of citizenship, leading to increased wellbeing

Because a realist approach is central to this review, the analysis aims to understand not whether environmental volunteering for increased wellbeing ‘works’, but instead seek to explain *the why, the how and for whom* within the literature.

2.1.2 Search for literature

Data from the literature was sought from the University library, using SOLAR. A range of databases were used: Academic Search Premiere, CINAHL, Cochrane Library, Department for Communities and Local Government, GreenFILE, JISCMAIL, MEDLINE, PsycINFO, PubMed, Web of Science. Citation tracking (Greenhalgh & Peacock, 2005), and ‘snowballing’ was used. Google Scholar’s ‘related articles’ feature, proved to be useful as did ‘Mendeley Suggest’. Grey literature was searched for on-line.

The first stage was a general search for relevant literature, using key search terms as seen in Table 2-1 to answer the main overarching search question. The second stage followed a realist approach to researching literature to populate the Context-Mechanism-Outcome configuration (de Souza, 2013); this stage set out to understand the causal mechanisms at play individual strands and components in achieving the outcomes. Searches were conducted specific to the Five Ways to Wellbeing (Aked et al., 2008), using the search sub-questions. The aim of this process was to assess the literature available specific to these outcome themes, and furthermore, identify additional papers that might not have been picked up in the first stage of the literature search. See Table 2-2.

Table 2-1. Stage 1 key search terms

Stage 1		Search Qu: What evidence is there to support that Participation in civic environmental activities increases wellbeing?
Key terms & Boolean operators		(green OR environment OR neighbourhood OR nature) AND (outreach OR volunteer OR interventions OR activities OR conservation OR horticulture) AND (wellbeing OR wellness OR health OR quality of life)

Table 2-2. Stage 2 search questions and search terms

Stage 2 search questions	What evidence is there to support that: 1. Participation in civic environmental activities increases social cohesion, leading to increased wellbeing 2. Participation in civic environmental activities increases physical activity, leading to increased wellbeing 3. Participation in civic environmental activities increases nature connectedness/mindfulness, leading to increased wellbeing 4. Participation in civic environmental activities provides learning opportunities, leading to increased wellbeing 5. Participation in civic environmental activities facilitates a sense of citizenship, leading to increased wellbeing			
Key Terms				
5 Ways to Wellbeing Outcome	Title keyword OR	Any field keyword AND OR (each term)	Any field keyword AND OR (each term)	Any field keyword AND OR (each term)
Sub-Qu 1. Connect	Wellbeing / Mental Health	Volunteer* Participat* Activities	Nature/ Environment	Social*; social cohesion;
Sub-Qu 2. Be Active	Wellbeing / Mental Health	Volunteer* Participat* Activities	Nature/ Environment	Exercise; Physical activity
Sub-Qu 3. Take Notice	Wellbeing / Mental Health	Volunteer* Participat* Activities	Nature/ Environment	Biophilia; mindful*

Sub-Qu 4. Learn	Wellbeing / Mental Health	Volunteer* Particpat* Activities	Nature/ Environment	Learn; Skills
Sub-Qu 5. Give	Wellbeing / Mental Health	Volunteer* Particpat* Activities	Nature/ Environment	Citizenship; Community

Boolean operators ‘AND’ and ‘OR’ were used in the searches. Brettle and Grant (2004) advise on advanced searching methods to include truncation and wildcards to secure quality and a robust approach to searching databases. A ‘*’ denotes truncation used to ensure all variations would be picked up. For example ‘volunteer*’ would pick up ‘volunteer’ and ‘volunteering’.

2.1.3 Selecting and appraising the literature documents

A wide range of documents may be included in a realist review to develop and refine the programme theory. However, the documentation included must be relevant, therefore it must contribute to building the programme theory and be robust, i.e. use a rigorous approach to deciding on the reliability and trustworthiness of data (Ramesesproject, 2001).

Eligible documentation must be appraised using inclusion and exclusion criteria, and this can be a challenge when conducting, developing and refining a programme theory based on open, complex social systems and processes. Therefore, a balance must be found using a focused review question, applying discretion of ‘relevance and rigour’ (Ramesesproject, 2021), but leaving flexibility to bring in data from situations outside of the programme theory when required.

Papers were sifted and selected initially on title and abstract, then through appraisal of the full text.

The exclusion criteria applied were:

- Studies that focused on children (as this is not the study cohort)
- Studies not written in English language
- Studies focused on gardening in private domestic gardens

Since realist review is iterative, and was dynamic throughout the period of this study, reporting on numbers of papers identified was not appropriate (Pawson, et al., 2005).

2.2 The Realist approach to analysis

At the crux of realist philosophy is the notion of generative causation, i.e. mechanisms generate outcomes, but those mechanisms are sensitive to context, and mechanisms operate at different levels as part of a stratified reality (Ramesesproject, 2021). In realist terms this is known as Context-Mechanism-Outcome (C-M-O) configuration, this is explained in detail in the following Chapter 3, Methodology. Configurations form part of systems, which are stratified through layers of systems and subsystems. Causation operates upwards and downwards through the systems. Bhaskar (1978) introduced the concept of stratified reality, which consists of: ‘the real’ where mechanisms exist whether operated or not and can be observed or invisible; the ‘actual’, i.e. events that happen; and the ‘empirical’, i.e. what can be observed by people. These realist traits have distinct influence on a realist review, stemming from the purpose of the review, the explanatory structure and following analytical tasks, the logic of comparison and tools to deal with evidence (and conflicting evidence) (Ramesesproject, 2021).

The explanatory structure is based on generative causation, i.e., the C-M-O configurations that should be read as ‘sentences’, i.e. have an underlying narrative. The analytical task in a realist review is to ‘find and align the evidence’ that explain the causal mechanisms and the implications of the context (Ramesesproject, 2021). The logic of comparison for this review is ‘intra-program’ which entails making comparisons within the literature that has been selected as relevant to the programme theory. The next section will discuss the findings from the literature review.

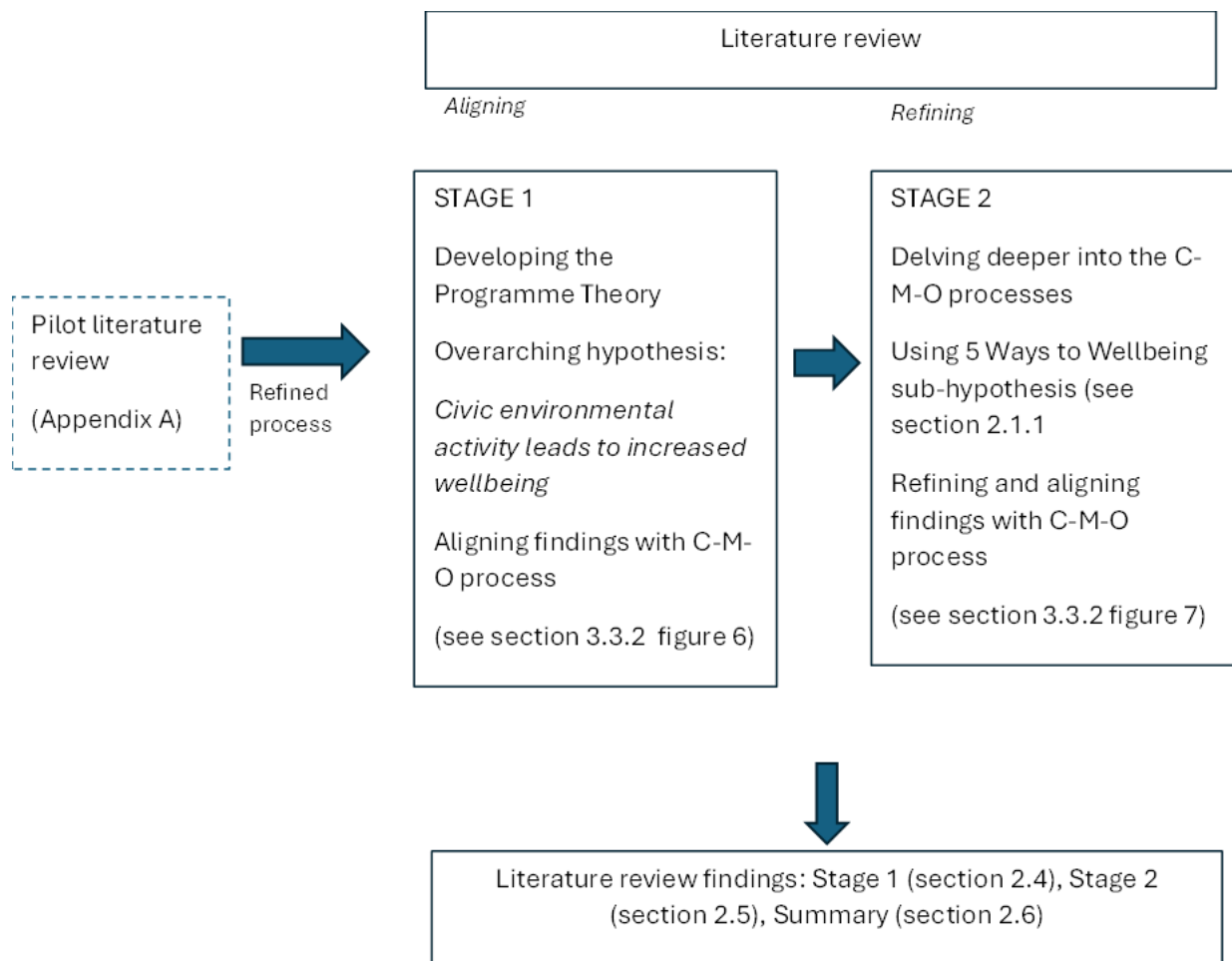


Figure 5. The realist literature review process undertaken showing Stage 1 & Stage 2 of the 'aligning and refining' process

2.3 Literature review - findings

2.3.1 Overview of the literature – a realist summary

The task of the realist literature review is to 'align and refine' (Pawson et al., 2004), align existing evidence to support (or refute) and refine the programme theory, identifying C-M-O configurations, likely to be operating as systems and subsystems at different levels, and intra-level (for example, from an organisational macro level, or individual micro level, or organisational to individual level). There is some literature that supports the overall programme theory, i.e., the hypothesis that taking part in civic environmental activities (spending time volunteering to improve local greenspaces) can lead to increased wellbeing. The majority of evidence for this has come from primary qualitative and quantitative research of a range of theoretical and methodological

differences, which is acceptable in a realist review (Pawson et al., 2005). Lovell et al. (2015) highlight the lack of quality evidence in this area, citing bias and the use of methodologies that are not considered robust. This is a fair point however, this judgement is still trapped in the paradigm of a traditional hierarchy of evidence, not suited to evaluating complex social programmes (Pawson & Tilley, 1997).

Much of the literature specific to the wellbeing dimension of urban greenspace is centred on the relationship between exposure, or access, to greenspace and health and wellbeing (Bragg and Atkins, 2016). A considerable amount of literature review concluded that exposure to natural environments had a positive effect on mental health and wellbeing (Houlden *et al.*, 2018). In a C-M-O configuration, this would relate to the *context* of the phenomena, i.e. the natural environment is an important setting for the wellbeing *outcome* to be generated.

There is less literature that focuses on the wellbeing benefits of interacting with nature as described by Bragg and Atkins (2016). This relates to the *mechanism* in the programme theory or the causal mechanism in the C-M-O configuration. This review aimed to delve into the causal mechanisms that might be operating using the Five Ways to Wellbeing framework, and although papers were able to piece together a ‘picture’ of evidence based on this framework, the studies provided fragmented, smaller pieces of the jigsaw in constructing the ‘picture’ or narrative. There were fewer ‘large pieces’ of the jigsaw either using the pathway to wellbeing as described in the Five Ways to Wellbeing (Aked et al., 2008) or taking a holistic approach to understating what and why causal mechanisms might play, for different populations in relation to the phenomenon in question. There was some evidence to suggest that the overarching programme theory could be plausible, although further evidence is clearly needed in this area.

2.3.2 Pictorial overview of literature findings

An overview of the literature review findings is presented pictorially in Figures 6 & 7, showing visual representation of how the literature found in the search process (Stage 1 & Stage 2) aligns with the C-M-O configurations. These adapted illustrations (Pawson et al., 2005) aim to provide a visual construction, or ‘picture’ of how the evidence found in the review aligns with the programme theory and the C-M-O configuration. Unique identification tags have been assigned to relevant paragraphs drawing points from

papers or a synthesis of papers. For example, the first paragraph in the next section has a unique identification tag of 'S1.1', this tag describes 'Stage 1, section 1'. The purpose of these tags is to help construct a visual representation of how the evidence aligns with the programme theory. These 'tags' representing the findings have been aligned to an applicable part of the C-M-O configuration to build a 'picture' of the evidence aligning with the programme theory. Many of the papers had some element that could have been attributed to any single constituent part of the C-M-O within the programme theory and mapping all papers to each single constituent C M O was not the objective for these illustrations. The aim was to tell the story, and support the story, of the C-M-O processes underpinning the programme theory through aligning the significant points drawn from the synthesised evidence.

Each tag has been aligned to an arrow relating to a particular component (or components) within the C-M-O process. For example, in Figure 2.1 the findings that support links to wellbeing (O) and nature (C) (but do not link volunteering) is represented by the continuous black arrow from (C) to (O), supported by findings tagged as S1.6. Similarly in Figure 7 the findings that suggest causal mechanism (C-M) at play is represented by the black arrow aligned to (C-M) supported by findings tagged as S2.3, S2.6, S2.8, S2.13. Figure 7 and Figure 8 use colour coding to distinguish the Stage 2 sub-searches using the Five Ways to Wellbeing (Aked et al., 2008) framework.

Stage 1 literature review findings to construct the over-arching Programme Theory:

In the context of civic environmental outreach (C) participation (M) leads to increased wellbeing (O)

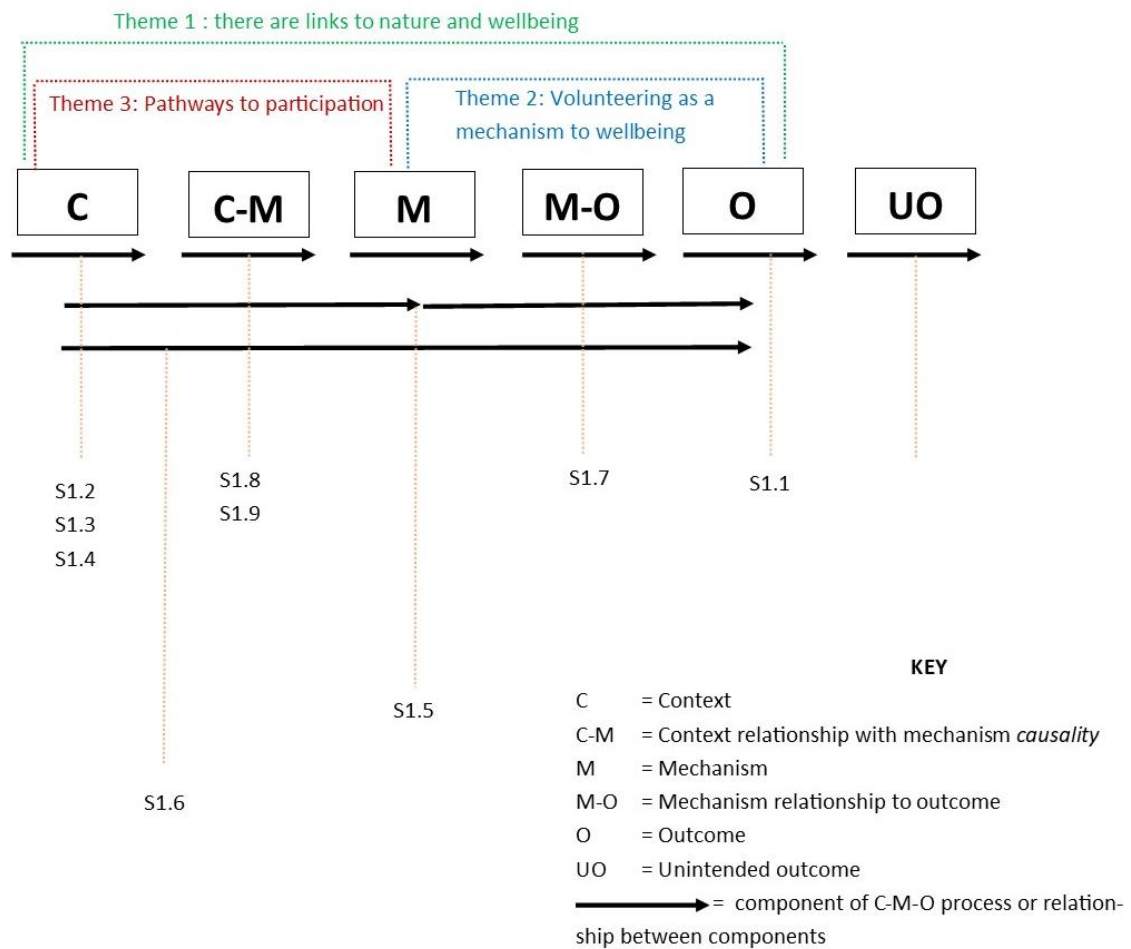


Figure 6. A pictorial representation of the Stage 1 literature findings aligning with the Programme Theory underpinned by C-M-O processes (adapted from (Pawson et al., 2004, p.34))

Stage 2 literature review findings to understand deeper C-M-O configurations within the PT based on 5 Ways to Wellbeing (NEF, 2008): 1. **CONNECT**; 2. **BE ACTIVE**; 3. **TAKE NOTICE**; 4. **LEARN**; 5. **GIVE BACK**

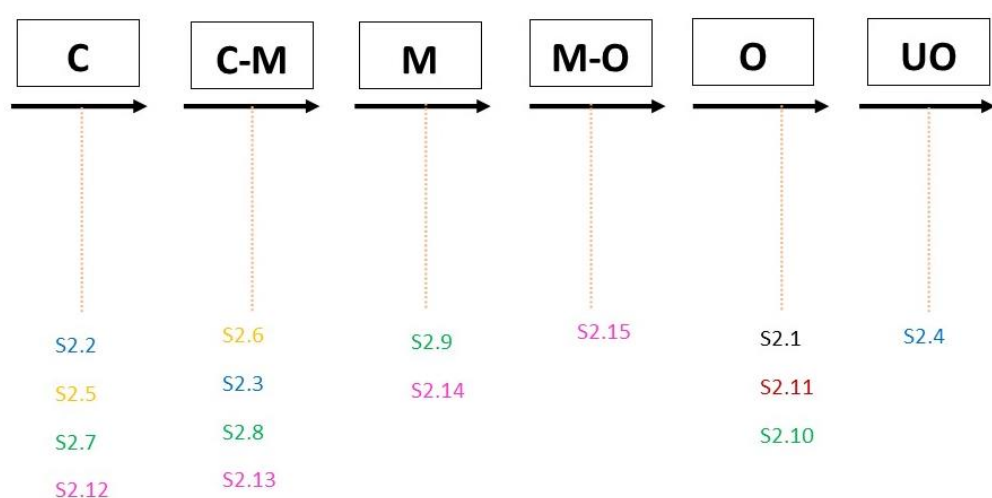
1. In the context of environmental outreach (C) participation leads to an increased connection with others (M) leading to increased wellbeing (O)

2. In the context of environmental outreach (C) participation leads to increased physical activity (M) leading to increased wellbeing (O)

3. In the context of environmental outreach (C) participation leads to an increased nature connectedness/mindfulness (M) leading to increased wellbeing (O)

4. In the context of environmental outreach (C) participation leads to learning opportunities (M) leading to increased wellbeing (O)

5. In the context of environmental outreach (C) participation facilitates a sense of citizenship (M) leading to increased wellbeing (O)



KEY

C = Context

C-M = Context relationship with mechanism *causality*

M = Mechanism

M-O = Mechanism relationship to outcome

O = Outcome

UO = Unintended outcome

→ = component of C-M-O process or relationship between components

Figure 7. A pictorial representation of the Stage 2 literature findings aligning and refining the PT underpinned by C-M-O processes (adapted from (Pawson et.al., 2004, p.34))

Stage 1 and Stage 2 literature review findings.

Constructing the over-arching PT; 1. **CONNECT**; 2. **BE ACTIVE**; 3. **TAKE NOTICE**; 4. **LEARN**; 5. **GIVE BACK**

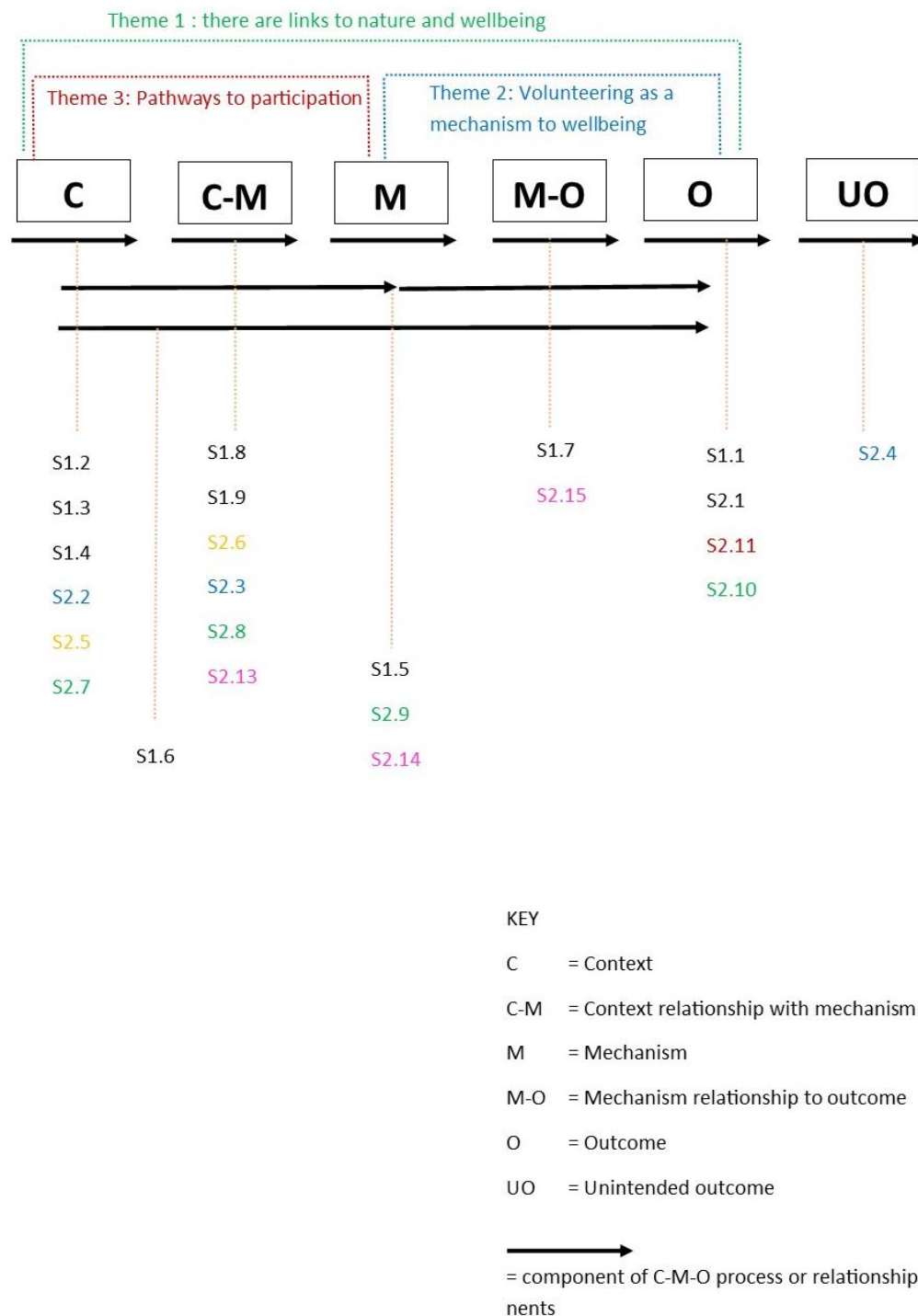


Figure 8. A pictorial representation of the Stage 1 & Stage 2 literature findings aligning and refining the PT underpinned by C-M-O processes (adapted from (Pawson et.al., 2005))

It is helpful to define key terms as found in the literature.

Key Terms:

2.3.3.1 Wellbeing

S1.1 In relation to the programme theory, increased wellbeing is the overarching hypothesised outcome from taking part in civic environmental activity. Much research on wellbeing falls into two categories. The first category is *hedonistic*, an emphasis on happiness or ‘presence of positive affect and absence of negative affect’ (Deci & Ryan, 2008). The second category *eudaimonic* encompasses living life to its full, reaching one’s own potential and a deep sense of fulfilment (Deci & Ryan, 2008; Waterman 1993). This demonstrates that wellbeing as an outcome may operate within two dimensions. In relation to data collection, Deci & Ryan (2008) argue that wellbeing is a personal psychological experience, thus subjective in nature and therefore wellbeing should be evaluated by people themselves.

2.3.3.2 Nature

S1.2 There are no set definitions of what ‘nature’ is (Houlden *et al.*, 2018). Nature in the urban environment is often referred to as ‘green infrastructure’ (GI) the mosaic of greenery that generates environmental, social and economic benefits (Gore *et al.*, 2013; Scott *et al.*, 2022; Scott & Hislop 2024) providing ecosystem services (Dickie *et al.*, 2017). For the context of this study, ‘nature’ is encompassed by the term ‘urban greenspace’ Hunter *et al.*, (2015) cite the definition as ‘all publicly owned and publicly accessible open space with a high degree of cover by vegetation, e.g. parks, woodlands, nature areas and other green space within the city boundary area’ The exception to this is private gardens, not covered in this study. A point made by Francis *et al.*, (2012) echoed in other papers, was that the quality of public realm greenspace is more influential on mental health than quantity of greenspace.

2.3.3.3 Volunteering

S1.3 As discussed in Chapter 1, not all participation is framed as volunteering in the mind’s eye of the participant. However, participation in civic environmental activity was often framed as volunteering in the literature, therefore a definition is provided here. Volunteering has been defined as ‘any activity in which time is given freely to another person, group, or organisation’ (Wilson, 2000, p.215). This

definition is useful in developing the programme theory, as it acknowledges the context and describes the way in which people take part in activities.

2.3.3.4 *Nature based interventions*

S1.4 Shanahan et al. (2019) define ‘nature based interventions’ (activities) as ‘programmes, activities or strategies that aim to engage people in nature-based experiences with the specific goal of achieving improved health and health and wellbeing’ (Shanahan *et al.*, 2019, p2).

2.4 Stage 1 – Literature review findings

2.4.1 The overarching Programme Theory

There were two existing reviews, Hansen-Ketchum and Halpenny, (2010), Lovell et al., (2015) and one primary research paper Smyth et al., (2022) that aligned well with the overall programme theory.

S1.5 The most recent review, Lovell et al.’s (2015) systematic review was a mixed-method theory-led review, which has methodological and theoretical similarities to a ‘realist’ review. The authors interrogated 13 quantitative and 13 qualitative studies, out of which only a small number were graded as ‘good’ quality. Their objective was realist in nature as it sought to investigate the health and wellbeing impacts of civic environmental activity to understand how they may be beneficial, to whom and in what context. However, the realist approach was compromised by citing purposive ‘self-selecting’ sampling, and practitioner involvement as weaknesses, (both of which are not regarded as weaknesses in a realist approach) in evidence, which affected their overall conclusion. They did however conclude that there was additional evidence to suggest that the environmental activity did generate causal mechanisms that could lead to increased health and wellbeing. They used a conceptual model to illustrate this. The mechanisms identified were described as pathways to: 1. physical activity; 2. achievement and contribution; 3. social contact; 4. exposure to the natural environment. These pathways were described as non-linear and often subject to feedback loops, such as increased confidence through achievement may open a pathway to further social interaction (Lovell et al., 2015). The second review (Hansen-

Ketchum & Halpenny; 2010) supports the conclusion of plausibility from the Lovell et al. (2015) paper. Hansen-Ketchum & Halpenny (2010) conducted a literature critique using a socio-ecological model for nature-based health promotion to guide the scope of the review. Their review, which sought to identify evidence for how nature-based activities might align with multiple socio-political factors for health promotion, employed a search strategy with a very similar search criteria to this review, i.e., specifically looking for papers that were based on activities engaging with nature for health and wellbeing outcomes using organisational and community contexts. This is helpful to this study as it provides insight into the contextual factors applicable to a community level and organisational level. In their search model, Hansen-Ketchum and Halpenny (2010) incorporate a multi-disciplinary systems-thinking approach using a social ecological approach to health promotion, highlighting the mutual benefits to both the environment and people. Their review included primary research from the UK, and their findings can be readily aligned to this research and context of this study in an urban setting within the UK. They conclude that there is evidence to suggest that from a community level perspective, active engagement in nature positively influences health and wellbeing, nurturing recovery from stress and having a positive impact on cognitive function. From an organisational perspective, the authors found links between interaction with nature at a neighbourhood level and quality of life. They found enough evidence to satisfy the connections between nature and health and wellbeing; access to nature linking to improved life functioning and a medium for social cohesion. They report limitations in the literature which could be strengthened through narrative accounts from participants to understand their own community, individual and institutional contexts in relation to nature and wellbeing. They made a call for more participatory research that brings together participants' experiences in conjunction with health promotion or ecological initiatives that aim to both improve green space and achieve health and wellbeing outcomes. Furthermore, they advocate participant experiences combined with studies involving practitioners and policy makers to explore further a systems approach to links between interaction in nature and public health implications. This ethos was supported in other papers (Molsher & Townsend, 2016).

A call for participatory evaluation was one of the conclusions that the third paper to align with the overall programme theory, which was a primary research paper reporting the findings from a study aimed at examining the wellbeing impacts of TCV's Green Gym: group nature-based activity at a neighbourhood level, designed to facilitate physical nature conservation activities and social interaction (Smyth et al., 2022). Green Gym is an example of voluntary nature-based programme which is open to social prescriptions or for those just choosing to take part (Smyth et al., 2022) making this relevant to the phenomenon in question. Wellbeing impacts were collected using the Warwick Edinburgh Mental Wellbeing Short-Form Scale (SWEMWBS), a widely used quantitative measure of mental wellbeing comprising scales of emotional, cognitive and psychological functioning, used to monitor changes in wellbeing. A baseline of scores were collected at the start of the programme and a follow up assessment 4.5 months later showed a loss in retention of 36% of participants. 37.5% of original participants continued activity but chose not to complete the follow-up survey. 28.4% of original participants completed a follow-up survey, which showed an improvement in wellbeing over this time period (Smyth et al., 2022). Smyth et al., (2022) were unclear as to why retention and follow up surveys were problematic and called for future VCSE evaluations to enable participants to have greater involvement in the design, collection and dissemination of evaluation data to improve response rates. Despite these issues, the authors reported that the activity appeared to be most effective on lower socio-economic demographics and those with lower than average wellbeing scores, therefore making the Green Gym programme an effective intervention or offer to tackle mental ill health (Smyth et al., 2022).

Both reviews (Hansen-Ketchum & Halpenny 2010; Lovell et al., 2015) and research paper (Smyth et al., 2022) were significant papers for this study. From a realist perspective, the reviews provided insight and identified gaps into different context levels to achieve outcomes relating to the phenomenon. The evidence presented in all papers support the justification for this study, to provide part of the 'missing pieces' of the jigsaw in understanding the wellbeing benefits of civic environmentalism, the implications from an organisational and public health perspective and the issues

relating to collecting and evaluating wellbeing impact data. All of which this study seeks to address,

2.4.2 Themes emerging from the initial literature search

The results from the first stage of the literature review also produced a set of themes that helped to shape and support the outline programme theory. The results from this initial literature search were categorised into three interconnecting themes: wellbeing and nature; volunteering and wellbeing; volunteering as a nature-based activity. These themes should be applied to the programme theory (Westhorpe, 2014).

2.4.3 Theme 1: The relationship between wellbeing and nature

One theme to emerge appropriate to the programme theory was around wellbeing and nature (both of these key terms ‘wellbeing’ and ‘nature’ defined in sections 2.3.3.1 and 2.3.3.2) and the relationship between the two.

S1.6 From a wellbeing perspective, at a policy level, the UK Government’s *Foresight 2008 Mental Capital and Wellbeing Project* sought to identify the influential drivers of mental capital and well-being to develop a long-term vision for the UK articulated in a report *Mental Capital & Wellbeing: making the most of ourselves in the 21st Century* (Goswami, 2008). As part of this work, independent think-tank, New Economics Foundation, working with a project team weighted in psychology and psychiatry perspectives, were commissioned to produce the *Five Ways to Wellbeing* (Aked et al., 2008), a set of evidence-based actions that might lead to an outcome of increased wellbeing (Aked et al., 2008). The rationale for using the Five Ways to Wellbeing Framework (Aked et al., 2008), is discussed in Chapter 1, Introduction. This framework has been chosen as a guiding heuristic for this study, is widely recognised by public health and the social care sector, and research into wellbeing impacts of environmental activity (O’Brien, 2018). The adaptability to everyday life that the 5 Five Ways to Wellbeing framework offers is not comprehensively or explicitly meant to suggest undertaking the ‘5 Ways’ in a natural setting, it does however imply that the ‘Take notice’ action should involve spending time to take notice of natural elements, the seasons etc. (Aked et al., 2008). There was an abundance of literature that

discussed the relationship between wellbeing and nature. The literature search showed that wellbeing and nature is a topic that spans a wide cross-section of subject areas, for example from physical activity in nature (Thompson Coon et al., 2011), urban ecology (Tzoulas & Greening, 2011), ecotherapy (Mind, 2024), as well as disciplines such as psychology, human geography (Thomsen, Powell & Allen, 2013) and gerontology (Yeo, et al., 2019). It was clear from the amount of literature that this theme applied to the developing programme theory for the study, however it was a broad brushed topic that needed further refinement in the literature search, and this was undertaken in the second stage of the literature search, to gain further insight into the processes at play.

A paper that identified and synthesised the large amount of literature on nature in an urban context was Tzoulas et al. (2007). This study undertook an interdisciplinary literature review examining urban green space, ecosystem and human health, producing a conceptual framework which showed the relationship between urban greenspace, health and wellbeing and ecosystems as dynamic in nature and a fusion of complex interactions. This paper found links between human exposure and interaction with the natural environment in an urban context for improved wellbeing outcomes. A more psychological perspective came from Houlden *et al.*, (2018) which took a systematic review to appraising evidence of associations between mental health and greenspace, using various conceptualisations of ‘greenspace’. This review concluded that there was adequate evidence of links between local greenspace and life satisfaction, but stated a lack of evidence related to personal flourishing, i.e. eudaimonic wellbeing, and recommended further research into this area (Houlden *et al.*, 2018).

In summary, there is substantial evidence to support a connection between wellbeing and nature, which forms part of the overarching hypothesis that civic environmental activity has the potential to generate wellbeing outcomes.

2.4.4 Theme 2: Volunteering as a mechanism to wellbeing

The theme of participation – described in the literature as volunteering - and wellbeing emerged from the initial literature search and this has been applied to the process of constructing the over-arching programme theory.

S1.7 The evidence base supports the notion that volunteering can be a means to wellbeing. Binder and Freytag (2013) explored the relationship between subjective wellbeing and (wider) volunteering and concluded that regular volunteering significantly increases wellbeing for some individuals. They describe the complex nature of motivations for volunteering for 'happiness' linking to the concept of altruism and followed Wilson's (2012) theory of factors: personal disposition; human resources; life course and social context in their analysis (Binder and Freytag, 2013).

The links between volunteering and wellbeing were supported by further papers where studies focused on environmental volunteering, albeit a different context to civic environmental activity. For example, Mosher and Townsend (2015) used an Australian based wildlife conservation project as a case study, using questionnaires and interviews. This study also concluded that it was the social connections made alongside the connection with nature and opportunity for environmental stewardship that was linked to positive increase in self-reported wellbeing. Volunteering leading to increased wellbeing is a narrative is supported by Mosher and Townsend (2016) who do not make a distinction between dimensions of wellbeing. A similar study topic undertaken by Sander-Reiger & Etowa (2014) used a multi-method ethnographic case study into the social wellbeing impacts from volunteering at a community wildlife garden in Canada using field observations, interviews and a document review. Their similar conclusion focused on the social wellbeing aspects of volunteering with participants reporting subjective positive wellbeing experiences from working to achieve common goals as well as wellbeing from increased physical activity.

With a focus on those with a defined health need, an evaluation of a community project (O'Brien; 2018) aimed at engaging participants in woodlands for wellbeing impacts and focused on people seeking rehabilitation for drug and alcohol problems. Participants included 5 groups of adults (n=24) attending sessions over several weeks. O'Brien (2018) used the Five Ways to Wellbeing, similar to this study, as a framework for both participant interviews and analysis of data (O'Brien, 2018). A useful narrative drawn from the study is that the author's findings supported environmental volunteering for people experiencing drug and alcohol problems, recommending repeat visits for this cohort. Qualitative findings showed that participants benefited from social inclusion in

a safe environment (Westonbirt Arboretum) and increased sensory engagement and immersion in nature and activities beneficial to wellbeing (O'Brien, 2018). The theory for analysis was Green Mind Theory (Pretty, et al., 2017) to explain the psychological process to increased wellbeing.

Another paper to apply theory to explicate the enhanced wellbeing outcomes, Piliavin and Siegl (2007), investigated the effects on psychological wellbeing and self-reported health from a four phased longitudinal study spanning 30 years, using large sample size (n=4000), indexing the data gathered via mail and telephone at 4 points over the 30 years. Although the volunteering in question was not constrained to environmental activities, it was based on volunteering for community-based activities. The paper is a good fit for this study as the authors sought to understand why and for whom volunteering is different from other sociable activity, how much activity is optimal and what mechanisms are operating. Their findings and theory suggest that undertaking hobbies or sociable activities stimulated hedonistic wellbeing (feeling good; feeling good about life), but volunteering as an activity can give a sense of putting something back into the wider community stimulates eudaimonic wellbeing (increased esteem; feeling good about oneself). This is conceptualised as 'mattering', introduced by Rosenberg and McCullough (1981), 'mattering' meaning that one is part of a wider world, that people care and value one's existence. Piliavin and Siegl (2007) hypothesise that the sense of 'mattering' provides a causal mechanism between volunteering and wellbeing. The narrative they propose is that volunteering leads to both hedonistic (feeling good) and 'mattering' as a mechanism leading to eudaimonic wellbeing, i.e., feeling good about oneself. The point on 'mattering' is interesting as eudaimonic wellbeing can provide a feedback loop into the psychology of what drives people to participate in voluntary activity.

Later contemporary studies focused on volunteering and ageing or older life (Kim et al., 2020; Matthews & Nazroo, 2021). More relevant is a recent study that examined volunteering as an activity offered through social prescribing (Turk et al., 2022) using thematic analysis to develop a conceptual model of how volunteering could provide enabling environments to nurture a sense of self, a connection to others and sense of

community. Their findings highlighted the need for flexibility in tailoring offers in order to fit individual's needs within a social prescribing context (Turk et al., 2022).

In summary there was lots of literature from a range of disciplines to suggest that the links between volunteering and enhanced wellbeing are strong. However, there was less from an environmental discipline which address the psychology behind attaining enhanced wellbeing.

2.4.5 Theme 3: Pathways to participation

The final theme to emerge from the initial literature search was that of pathways to participation. This can be examined as virtual pathways, or drivers that motivate participation, as well as formal pathways such as volunteering programmes or framed as a nature-based intervention. This forms part of the construction of the programme theory, giving insight into the pathways or contexts for participation.

2.4.5.1 *Drivers to participation*

S1.8 The drivers for volunteering in general have been explored by a diverse range of disciplines, such as psychology, sociology and economics (Binder and Freytag, 2013), and the literature is vast in this area. However, there were fewer papers that combined the drivers for volunteering, i.e. psychology, sociology and economics perspectives, with the environment or human geography. Some papers compared drivers, for example, Asah and Blahna, (2013) found that volunteers' motivations ranged from wanting to improve the environment, self-fulfillment, employability and learning opportunities, physical exercise, social opportunity and community cohesion. In their later mixed methods study of eco-volunteerism in the urban landscape, they found that social psychological motivations rated higher than environmental motivations for participants, and that demographics influenced motivations (Asah, Lenentine and Blahna, 2014).

There is a vast array of grey literature linking volunteering pathways with nature enhancement which have not been captured here due to search constraints. However, within the academic literature the drivers for environmental volunteering that has wellbeing outcomes varied from wanting to enhance biodiversity to social interaction with others (Dennis & James, 2016). In a review of three European case studies,

through document analysis and further interviews, Mattijssen et al., (2017) found that ‘place-keeping’, i.e. improving and maintaining one’s neighbourhood surroundings was another driver and there was acknowledgement that this needed support facilitated by organisations (Mattijssen *et al.*, 2017). The drivers described above illustrate people’s motivations for involvement, as well as the resources that may be required. Both of which can be applied to the context within the programme theory.

2.4.5.2 Participation in nature-based interventions

S1.9 The final theme to emerge from the initial literature search was that of framing participation and volunteering as a nature-based ‘intervention’, a descriptor used to address a health issue. Using a Delphi expert elicitation process, Shanahan *et al.*, (2019), brought together 19 global multidisciplinary experts who identified 27 nature based interventions that aimed to prevent illness or target ill health. These interventions were categorised into interventions that either changed the environment where people live, work, school or recover from illness, or, changed behaviour through organised activities through programmes and initiatives. There was an acknowledgement that there are nature-based activities that cross over both categories, i.e. there are nature-based activities that also enhance the environment, such as environmental volunteering. However, environmental volunteering for health and wellbeing benefits still remains largely under researched (Molsher & Townsend, 2016) and there is a need for further research in this area, supported by Shanahan *et al.* (2019) who call for the need for more research into the influencing factors than enable the effectiveness of nature based activities to improve wellbeing. They ascertain a lack of guidance as to the types of nature-based activities available and what health outcomes might be applicable to whom. The salutogenic potential of interaction with greenspace needs further insight and Bell *et al.*, (2014) call for mixed methods of enquiry that reveals further insight into the role of community greenspace into self agency for wellbeing and personal priorities and life circumstances (Bell *et al.*, 2014). The concept of nature-based interventions is important to this study and has grown with the emergence of the social prescribing movement. In their realist evaluation Bertotti *et al.*, (2018) conclude that some social prescribing pathways could reduce the burden on Primary Care, health inequalities and provide non-clinical forms of support.

However they highlight challenges to overcome that are relevant contextual factors to this study, such as the significant amount of resource to provide support to enable participation, unsustainable funding models for delivery organisations and the lack of knowledge around the implementation of social prescribing in practice. Two other interesting points to draw from their work. Firstly, nearly all participants who did participate were not aware of the term ‘social prescribing’ (Bertotti et al., 2018). This insight is helpful in considering how participation opportunities are advertised or branded. Secondly, psychological reckoning is brought to the fore, making the point that ultimately the participant really has to want to make steps to participate in order to make any marked change (Bertotti et al., 2018) therefore individual self-determination is a key factor at play (Bertotti, Dias & Gama et al., 2024). Studies are emerging that examine the impact of green social prescribing. In their realist evaluation of wellbeing impacts derived from a horticulture therapy programme, Howarth, Lawler & da Silva, (2021) found that nature-based activities as an intervention could transform the wellbeing of those with long-term health conditions. Their learning supported the concept of a therapeutic space as a ‘safe’ space away from fear and illness, person-centred activities allowing meaningful participation where losing oneself could lead to finding ones sense of self (Howarth, Lawler & da Silva, 2021).

In summary, whilst the psychological, social and economic drivers to volunteering have been explored across disciplines and in various contexts, less is known about drivers to participation in voluntary activities within civic environmental programmes, particularly in an urban greenspace setting. Social prescribing, or in this study ‘green social prescribing’ is an emerging pathway whereby nature-based activities are defined as ‘interventions’. More insight is needed to unpick the detail on the implications of promoting and delivering these types of activities, doing so could impact on Primary Care and GP services (Bertotti et al., 2018).

2.5 Stage 2 Literature Review – the evidence and knowledge on deeper C-M-O processes

As described in the literature review search strategy, a second stage literature review was conducted to explore in more detail the implications relating to the Five Ways to Wellbeing framework and understand the C-M-O configurations at play relating specifically to the Five Ways to Wellbeing. This provided a framework by which to explore what would have otherwise been an unmanageable exercise of scoping a broad range of themes. The majority of the literature was identified in the first phase of the literature review, and findings contributed to the process of aligning and refining the programme theory. A further search was necessary to delve deeper into the CMO configuration, thus providing explanation for the causal mechanisms at play. This included exploring psychosocial and behavioural theories to help explain causal mechanisms as these were not always explicit or explained in the first literature search. Using theories in this way is an important part of the realist evaluation process and discussed in detail in Chapter 3, section 3.1. New literature was identified through this process.

2.5.1 Psychosocial and behavioural perspectives

The psychosocial and behavioural drivers that relate to the various aspects of phenomenon specifically were less explained, i.e. the motivational drivers to participation which may lead to enhanced wellbeing. The wellbeing impacts of exposure to nature has often been theorised as restorative therapy (Kaplan, 1989). Green mind theory (Pretty et al., 2017) has been used in studies such as O'Brien, (2018) to theorise the psychological component of behind being immersed in nature, and this having calming effects. These theories potentially limit understanding of the C-M-O and further exploration is needed to explain processes behind meaningful participation described as 'mattering' (Piliavin and Siegl, 2007). This is important for participation through outreach to target those less engaged as well as social prescribing - as Bertotti et al., (2018) point out, self-determination is key to this pathway's success. In relation to prescribing standards to theory within the field of social psychology, there are a set

of regulatory ideals, those being: Truth; Abstraction; Progress and Applicability Standards, known as the 'TAPAS' framework.

2.5.1.1 'TAPAS' framework

According to Van Lange, Kruglanski and Higgins (2012) the important elements that constitute the formation of a theory in social psychology need to be 'TAPAS'-proof satisfying four regulatory ideals. The first ideal, *Truth*, which can be striven for but can never be absolute. This echoes the realist philosophy of moving closer to our understanding of the truth, but something that can never be accomplished, a mantra also shared by Popper (1959). The second ideal is *Abstraction*. A theory should be the result of abstraction in that the phenomenon in question needs to lean on assumptions, concepts and principles that link together other (disparate) phenomena as well. The theory should pursue a higher level of aggregation that transcend observations linking observations together at a deeper level, getting to the 'heart of the matter' (Van Lange, Kruglanski & Higgins, 2012, p. 3). The third ideal is *Progress* in that a theory is expected to make a contribution to what was previously understood, provide the means by which to progress knowledge under a set of principles. Theories can be the vehicle to see relationships and connections as part of knowledge progression as well as be subject to progress themselves, becoming more refined over time. The final ideal is *Applicability*, in that it should be applicable to real-world scenarios and issues, able, through fine tuning in its application to be able to identify and explain the underlying processes in everyday life and if need be, alter the course of direction for a more optimal or desired outcomes.

There are many recognised theories in the social psychology domain. For the purpose of this discussion, these are not to be confused with 'programme theory', which are constructed narratives to explain a desired outcome(s). Social psychology theories can be defined as reciprocal influences between individual's and their social environments. Social psychology is well used in research (conceptual and empirical work) and brings together the many factors which influence actions, feelings and thoughts as well as factors of influence thought of as conscious and unconscious, implicit and explicit (Van Lange, Kruglanski, Higgins, 2012).

2.5.1.2 Attention Restoration Theory

It would not be possible to discuss the relationship between the human mind and nature without the mention of Attention Restoration Theory. The groundbreaking work initially undertaken by Kaplan and Kaplan (1989) led others to develop a growing understanding of the restorative benefits of nature (Kaplan, 1995; Berman, Jonides & Kaplan, 2008). Attention Restoration Therapy (Kaplan & Kaplan, 1989) suggests that engaging in, and having exposure to nature can improve mental fatigue and concentration and that exposure to nature had restorative benefits.

Attention Restoration Therapy paved the way for further formal, ‘middle range’ theories (explained in Chapter 3 section 3.4.2) to become developed, one of which is Green Mind Theory, which help explain further the power of nature.

2.5.1.3 Green Mind Theory

Pretty, Rogerson and Barton (2017) developed Green Mind Theory as a way to explicate the links between the human conscious with the brain and body, and how that links or connects to natural and social environments. They argue that the relationship between the environment and human brains and bodies are inextricably linked, having a reciprocal relationship: environments shape bodies and brains; minds change bodily behaviours that shape the external environment. According to Pretty, Rogerson and Barton (2017), Green Mind Theory provides a route to enhanced wellbeing whilst being an opportunity for greener economies and sustainable development.

The basis of Green Mind Theory is forged from a startlingly eclectic mix of primary research, combined with some ‘understanding derived from neuroscience’, mixed with wisdom from cultural traditions (Pretty, Rogerson & Barton, 2017). Having sought affirmation from the evidence base, Green Mind Theory founders assert their approach is unique. Bringing together an evidence base which spans an emerging understanding of brain-body behaviours, cultural practices from indigenous groups, green exercise activities in nature, material consumptions and natural capital, all of which combined creates a journey to understanding how to better manipulate pathways to improve health and mental wellbeing (Pretty, Rogerson & Barton, 2017). This is a heady mix, and the neuroscience element (in their own words) uses a colour coded ‘metaphor’ to describe different stages of mammal-hominid evolution, citing (e.g. Hanson, 2009,

Hanson, 2013,). This theory was appraised and the appropriateness to this study in its use as a tool to understand some of the mechanisms at play.

According to Green Mind Theory (Pretty, Rogerson & Barton, 2017), the bottom of the brain, or brain stem, is the more aged part of the brain and is emotional and compulsive, for example looking after survival functions, auto-pilot style activities, routines and habits. Green Mind Theory asserts this is the 'red' part of the brain. The mid-section of the brain, which is the sub/cortex limbic system, hosting the hippocampus, hypothalamus, thalamus and amygdala is the brain's emotional headquarters, used for forming memories and bonding. Finally, the top-brain cortex is the newest part of the brain, able to plan, learn is slower and purposeful and can make choices, show empathy to others and carry other social abilities and Green Mind Theory describes this section of the brain as being 'blue'. Using the Green Mind Theory metaphor, the top 'blue' section of the brain is calming and controls the parasympathetic nervous system (PNS) and undertakes a 'rest and digest' process. The bottom 'red' part of the brain is subject to spikes by the amygdala driving the sympathetic nervous system (SNS), triggering 'fight and flight' mode and associated experiences. Green Mind Theory, or the 'green mind' optimises a combination of 'blue' and 'red' brain activity, as being best for health & wellbeing, too much 'red' being unfavourable. The optimal mix of 'red' and 'blue' brain activity activates PNS and keeps SNS to mild excitement and the occasional spikes for an alarm response (Pretty, Rogerson & Barton, 2017). Despite this being labelled a 'green mind', stripping away the colour coding, this is not a new concept in understanding the optimal cocktail of dynamic brain transmitters, pathways and hormones at play for health and wellbeing (such as dopamine, cortisol, adrenalin, serotonin, natural opioids, etc.). For example, there is evidence to show biochemical changes resulting from exposure to nature reduces internal stress and increases cortisol levels (Thompson et al., 2012; Roe et al., 2013).

What is perhaps more unique to Green Mind Theory, is its conceptualisation and synthesis of (perhaps pseudo) neuroscience with green exercise studies, traditional cultural wisdoms with a smattering of abstract natural capital accounting for the benefit of people and the planet. Whether this be perceived as an epistemological

nightmare or a holistic approach is probably in the eye of the beholder, but the green mind approach to counterbalance what they describe as the *modern mind in affluent consumer culture* is an interesting theory to apply to this study, in that it brings into play the context of climate change and the relationship to health and wellbeing, as well as help to explicate the notion of mindfulness and a connection to others in relation to wellbeing. They make the distinction between the modern mind plague, listing symptoms/conditions as descriptors of, such as mental ill-health, too many 'arrows' signifying distress, anxiety, suffering, in-active lifestyles, disconnected from nature, tendency towards material consumption for consolation. Contrasting this with the 'green mind', described as a mix of actions and positive conditions, such as being active in nature, immersion attentiveness, pro-social and empathetic, tendency for non-material satisfaction for wellbeing and longer-life and healthy planet (Pretty, Rogerson & Barton, 2017).

Green Mind Theory hypothesises that people are living and experiencing a disconnection from nature, healthy lifestyle choices and climate change. What they all have in common is a sense of urgency across a lifespan, and, a level of disconnection from actions that will ultimately require lifestyle changes. Thus, a closer understanding of motivational drivers and the psychology behind those drivers is needed to deepen understanding further. Therefore, the next theory to be addressed is Self Determination Theory.

2.5.1.4 Self Determination Theory

Self Determination Theory (SDT) began more than 30 years ago with experiments seeking to understand the intrinsic motivation and the effects on intrinsic motivation from extrinsic rewards. Deci and Ryan (2012) explain that its empirical roots lie in social psychology but draws on theoretical foundations extending into a range of traditions. For example, it shares some attributes with ego-psychology, that is, the notion that conflict-free ego energy as an inherent motivation underpinning of the developing ego and healthy self (White, 1963) and ego-development (Loevinger, 1976).

STD is a well-known branch of social psychology which brings to light the influence of social environments on motivational attitudes, behaviours. It is distinct from other social psychology theories as STD assumes that humans have evolved to be inherently

active, intrinsically motivated and that there is a natural pull towards these qualities. Specifically SDT ascertains that these qualities are not learned, and humans have an innate need or ability to undertake intrinsic motivation processes as part of healthy development and psychological wellbeing. These nutrients are psychological (and biological) and are in effect nourishment or sustenance for positive human development and wellbeing. SDT states that the absence of such factors results in negative behaviours and experiences. This resonates with the strong evidence base that human beings have an intrinsic need, or pull, towards natural environments, that this is an intrinsic need for all (Kaplan & Kaplan, 1989; Pretty, Rogerson & Barton, 2017) which is now reflected in policy (Natural England, 2020).

Originally SDT was developed using laboratory experiments and therefore began life as an empirically derived theory. Since then it has been applied to the field of social studies to better understand motivational processes and behaviour change (Deci & Ryan, 2012). The beginnings of SDT, in the early 1970's published some early research that suggested that incentivising intrinsically interesting activity using monetary rewards undermined intrinsic motivation for undertaking the activity. The findings from this initial study was later backed by a further 100 or more similar studies which came up with the highly controversial idea that financial rewards do not always motivate persistent activity, in fact they can have the opposite affect and undermine the process of intrinsic motivation (Deci & Ryan, 2012). The beginnings of SDT linked the social-contextual effects on intrinsic motivation to the basic human needs for competence and autonomy, this being the exemplar in psychological freedom or self-determination. Intrinsic motivation could be enhanced or undermined, supported or thwarted, by the effects of the social environment (Deci & Ryan, 2012). Experiments focused on how the social environment would affect intrinsic motivation predicted and concluded that positive feedback and choice were mechanisms that supported intrinsic motivation (Deci et.al, 1999; Zuckerman et al., 1978). Adversely, monetary rewards, threats and competition undermined and therefore, thwarted intrinsic motivation (Deci, Betley et al., 1981; Deci et al., 1999).

Thus began the SDT macro-theory linking basic human needs with the effects on the social environment, which was in contrast to other theories linking intrinsic motivation

to self-attribution and self-perception theories (Lepper et al., 1973; Bem, 1972) where it was postulated that people self-consciously attribute less intrinsic motivation to themselves because in the instance of a reward there was over justification for carrying out the activity in question. Further work sought to explain the further complexities surrounding the dynamic interaction between autonomy and competence needs within social contexts and the impacts of implementing performance contingent rewards. Rewards for doing a task well were found to be less detrimental than giving rewards for just completing the task itself (Deci & Ryan, 2012).

In summary, according to Self Determination Theory, there are three main and universal psychological needs: *competence*, *autonomy* and *relatedness* which are vital for optimal psychological functioning and development. It is these identified needs, along with their associated intrinsic, natural processes that set SDT apart from many other social-psychological theories. These needs are helpful in understating the social and physical drivers to participation.

2.5.2 Understanding the C-M-O processes using the Five Ways to Wellbeing Framework

The Five Ways to Wellbeing (Aked et al., 2008) framework was introduced and justified in Chapter 1 as the wellbeing framework used for this study. Insight into the evidence base that supported the Five Ways to Wellbeing will now be presented, followed by the each of the 5 'Ways' presented as themes highlighting the relevant literature in each case, based on the Stage 2 search questions outlined in section 2.5.

S2.1 The New Economics Foundation (NEF) were commissioned as part of the Foresight Project (Foresight, 2008) and subsequent report into mental capital and wellbeing (Dewe & Kompier, 2008), to devise a set of evidence-based actions to improve individual wellbeing. NEF describe themselves as a 'think-and-do-tank' promoting the state of wellbeing linked to wealth (i.e. the economics of wellbeing) as important and legitimate aim of policy (Aked et al., 2008). NEF highlighted the challenges to researching the brief, and comparing the actions due to a lack of epidemiological evidence focused on measures, determinants or longitudinal aspects of wellbeing, therefore making a comparison between different actions challenging.

However, the general consensus from the evidence was that a holistic approach ought to be taken to achieve personal wellbeing. A pragmatic approach was undertaken devising a set of actions that were attainable by the individual, avoiding actions that were impacted by societal or political issues and therefore beyond an individual's control (Aked et al, 2008).

The methodology undertaken to develop the Five Ways to Wellbeing was carried out in two parts. NEF ascertain that a broad evidence base was examined (Aked et al, 2008) through a review of the literature as well as previous Foresight key challenge area reports. This produced a long-list of interventions (n=8) which were: social activities; physical activity; awareness; learning; giving; work; nature; nutrition. These interventions were supported by an evidence base that suggested that each intervention could be applied either as a buffer for mental ill-health, or enhancer of wellbeing, or both. Themes were derived and translated into direct and indirect messaging based on the intervention outcomes. Appendix B provides a simple diagram of the long-list of interventions, summarised associated evidence base and the themed messaging (Aked et al, 2008). Interestingly, the relevance to this study, both the theme of 'nature' and 'work' were initially identified as separate intervention themes, which were then merged into 'Be active'/Take notice' and 'Connect'/'Keep learning' respectively. The only intervention not to make the final cut was involving nutrition (eating well). The final 'Five Ways to Wellbeing' became: Be Active, Connect to others; Take Notice; Learn; Give back. The second part of the methodology consisted of a consultation exercise with experts and practitioners on the key messaging as a key output of the work was to communicate a set of actions similar to the '5 a-day' campaign to promote healthier eating habits.

The next section will cover each of the each of the 5 'Ways', addressed in turn presenting literature found that aligns and helps to refine each respective theme.

2.5.2.1 Connect

'Connect with the people around you: your family, friends, colleagues and neighbours. Spend time developing these relationships' (Aked et al., 2008, p. 5)

The links between social relationships and mental health are well established. The Foresight Challenge reports indicated that there was strong evidence to suggest that

social relationships played a vital role in preventing mental ill-health and therefore an important part in promoting wellbeing (Kirkwood et al., 2008). A need to connect with others spans across all age ranges and social participation was a key indicator in distinguishing between those with psychiatric morbidity and those without mental ill-health. Having three or less of close relatives and friends within a social network could lead to common mental health disorders (Kirkwood et al., 2008). Furthermore, happy people tend to have stronger relationships (Diener & Seligman, 2002). Research in social capital suggests that social networks evoke a sense of belonging with others leading to enhanced wellbeing (Morrow, 2001). Having life goals associated with commitment to being sociable through family, friends promotes life satisfaction whereas life goals focused on material gains were detrimental to life satisfaction (Headey, 2008).

In relation to primary research relevant to this study, there were a small number of papers which have been mapped to the C-M-O configuration under the theme of 'connect'.

S2.2 For example, the context of environmental volunteering was highlighted as a platform, providing physical space for social cohesion. O'Brien, Townsend and Ebdon (2010) explored the wellbeing benefits of environmental volunteering for 88 participants using qualitative and quantitative methods. Although they reported that the sample was too small, was weighted towards male participants and lacked diversity, they ascertained that environmental volunteering provided an accessible opportunity to bring people together and improve social relationships. As well as the landscape being a physical platform for cohesion, the use of social media to help facilitate community-led civic environmental interest has been explored using interpretive discourse analysis (Afzalan and Muller, 2014). Their study to explore how local residents socially connected remotely to agree on the location of a new local park (Afzalan and Muller, 2014).

S2.3 The concept of social capital as a means to wellbeing was highlighted in Townsend (2006), who discusses the concept of social capital 'as increased connectedness, trust and reciprocity in communities' (Townsend, 2006) and the distinction between 'bonding' between individuals and 'bridging' marginalised

individuals towards social capital. Townsend's (2006) paper *Feel blue? Touch green! Participation in forest/woodland management as a treatment for depression* reported on a series of projects using qualitative and then qualitative and quantitative methods. In this paper Townend presents an analysis of four Australian case studies and concludes that that civic environmentalism may provide a vehicle for increasing the social capital, improving population health whilst increasing ecological sustainability (Townsend, 2006) and calls for more research in this area. Bridging social connections was presented as an outcome of environmental volunteering to encourage marginalised people to integrate back into society by O'Brien *et al.*, (2011). The 'outcome' described in this particular study could equally be placed as a mechanism within the programme theory for this study. This was also supported by Birch (2005) who suggests that Green Gym activity could help those who experienced social exclusion by feeling more integrated into to the wider community.

S2.4 Findings from Lawrence, Molteno and Butterworth (2010) in a qualitative study seeking to understand participant experiences and meanings through active participation on greenspaces support the view that shared activity forged positive social cohesion (between volunteers). However, they also reported the opposite effect, unintended outcomes uncovering fraught connections with the wider community and organisations such as the local council.

In summary, the links between social capital and mental health are well documented and there is some evidence to suggest that civic environmental activity enables individuals to 'connect', i.e. supports social cohesion for enhanced wellbeing. More research is needed in this area specific to civic environmental activity specifically (Lovell *et al.*, 2015).

2.5.2.2 *Be active*

'Be active – 'Go for a walk or run. Step outside.. Garden'' (Aked *et al.*, 2008 p. 6)

Across all age groups, increased physical activity is shown to support a greater sense of wellbeing, lower anxiety and depression levels (Aked *et al.*, 2008). There is some evidence through longitudinal studies that regular physical activity can protect against cognitive decline, depression and anxiety but not enough is known about the intensity and frequency of physical activity required to sustain levels of wellbeing (Aked *et al.*,

2008). Whilst some evidence suggests that moderate exercise should be taken 3 to 5 times a week to have apposite impact on depression (Dunn et al., 2005), other studies would suggest that much shorter bouts of exercise are still beneficial particularly for older adults (Acevedo & Ekkekakis, 2006; Abdallah et al., 2008 cited by Aked et al., 2008). Overall, through studies examining mediating factors, such as biomedical and psychosocial mechanisms, it is generally agreed that physical activity enhances wellbeing by having a positive association with having a sense of mastery through skills, self-worth and used as a coping mechanism as a distraction from negative thoughts. 'Be Active' in relation to this study refers to the physical activity that is exerted from undertaking the activities associated with civic environmental volunteering, such as digging, walking etc. Therefore, physical activity as a potential causal mechanism to facilitate increased wellbeing.

S2.5 The review located growing evidence of the association between physical activity and the built and natural environment, in this sense the context to enable the physical activity aspects of the phenomenon. For example, a systematic review (Hunter et al., 2015) examined the impact of physical infrastructure based and nature based activity interventions in urban green space to encourage physical activity. Hunter et al., (2015) found a total of 12 relevant studies that compared physical activity opportunities through changes to urban environment infrastructure, urban greenspace engagement interventions that promote active engagement and a combination of the two. They reported that interventions to encourage physical activity in urban green space whilst changing the infrastructure of the urban environment could contribute significantly to the public health agenda for self-agency and proactive healthy lifestyles. This study suggested frustrated by the lack of quantity and quality of studies expressed the need for more evidence on the impacts of physical nature-based activities in the context of urban green space.

S2.6 As a mechanism to wellbeing, nature based activities that facilitate physical activity in the natural environment was described in some papers as 'green exercise' (Pretty et al., 2005; Barton & Pretty, 2010). 'Green exercise' is a broad-brush term that includes for example health walk programmes as well as practical conservation activities. Evidence showed that green exercise could lead to short and

longer terms health improvements through a combination of increased physical fitness, increased wellbeing through exercise and exercising in nature for enhanced wellbeing (Barton & Pretty, 2010; Coombes, Jones & Hillsdon, 2010; Bird 2004). A study of the Green Gym engagement model run by the British Trust for Conservation Volunteers provided a little insight into testing the theoretical hypothesis that civic environmental-driven volunteering would increase physical activity for wellbeing (Birch, 2005). This qualitative study using observations and semi-structured interviews found that Green Gym was an accessible pathway to improved social cohesion, contact with nature and also physical fitness was perceived to be improved by participants. However, it is difficult to generalise from the results due to the small sample size (n=3).

In summary, there was some literature to suggest that civic environmental activities could provide the context for increased physical activity for wellbeing, but more evidence is needed in this area, specifically centred on urban green space. It was not possible to determine specific populations or circumstances whereby physical activity could be the causal mechanism for increased wellbeing compared to other factors.

2.5.2.3 Take Notice

‘Take Notice – ‘catch sight of the beautiful. Remark on the unusual.. Be aware of the world around you and what you’re feeling’’ (Aked et al., 2008, p. 8)

NEF’s ‘Take notice’ (Aked et al., 2008) is also interchanged with ‘mindfulness’ (NHS, 2019) and in the context of this study’s phenomenon, refers to the causal mechanism involving a deeper psychological interaction with nature during participating in civic environmental activities.

Taking notice, or, being in a mindfulness state, is the state of being attentive to and aware of what is taking place in the present (Brown & Ryan, 2003). Studies have shown that undertaking mindful practices can enhance wellbeing, and furthermore reduce pain, anxiety, depression and stress (Kabat-Zinn, Lipworth & Burney, 1985; Kabat-Zinn, 2005; Peterson & Pbert, 1992; Specia, Carlson, Goodey & Angen, 2000). Mindfulness is the converse of being ‘mindless’, a less awake state of experiencing automatic thoughts, auto-pilot style functioning which can drive subconscious behavioural habits (Omidi, et al., 2013). By contrast, being ‘mindful’ is a state of consciousness that is characterized by clarity of experiencing the moment in full with vivid sense of

awareness and it is thought that this state of awareness can displace negative behaviour patterns through self-regulated behavioural which in turn can have a positive effect on wellbeing (Omidi et al., 2013; Deci & Ryan, 2000).

Mindfulness & wellbeing

The origins of the concept of mindfulness lies with contemplative cultural traditions such as Buddhism, and is commonly defined as ‘the state of being attentive to and aware of what is taking place in the present’ (Brown & Ryan, 2003). Brown and Ryan (2003) further explain: ‘mindfulness captures and quality of consciousness that is characterized by clarity and vividness of current experience and functioning and thus stands in contrast to the mindless, less “awake” states’ (Brown & Ryan, 2003). The links between mindfulness and wellbeing have been explored by a range of psychology-based schools of thought, producing a range of theories around awareness and self-regulation for enhanced psychological functions and behaviours.

This section will highlight literature relating to the contextual role of nature as an access point to developing a deeper connection with nature as a mechanism for wellbeing outcomes.

S2.7 Nature as a contextual factor is an important feature for this study, and research that examines the relationship between nature exposure and mental health and wellbeing has grown over the past 20 years. Historically, Wilson’s (1984) widely cited *biophilia* theory hypothesises the innate need for humans to have contact with nature for positive psychological health. The work of (Kaplan, 1995) explored natural environments as restorative environments to aid recovery. Ulrich’s (1983) work on natural environments linking to stress reduction has built on Wilson’s (1984) theory to extol the benefits of human exposure to nature. We now have a robust evidence base of the positive psychological benefits of exposure to nature (Zhang, Howell & Iyer, 2014; Slater, Christiana & Gustat, 2020; Jimenez et al., 2021; White et al., 2021). It is important to differentiate *exposure to nature* as a distinct variable from *a connection with nature*, and the former is not a pathway to the latter (Zhang et al., 2014). Kaplan and Kaplan (1989) introduced attention restoration theory to conceptualise aspects of the typical human response to the natural environment. The authors theorise there are four restorative characteristics of nature: sense of shifting away from stressful

thoughts; an instinctive, effortless, innate fascination of the natural environment; an awareness of complexity and scale of the natural environment which encourages discovery, exploration and learning; a compatibility of demands imposed by the environment and human need, creating a harmonious sense of 'whole'. (Kaplan & Kaplan 1989). This highlights that the context of natural environments can lead to a deeper sense of nature connectedness.

S2.8 Howell et al. (2011) ascertain that connectedness to nature only enhances wellbeing when individuals are emotionally acclimatised to nature (Howell et al., 2011). This view is supported by further studies (Zhang, Howell and Iyer, 2014) that concluded mindfulness was a correlation of nature connectedness, and furthermore, all three factors, i.e. mindfulness, wellbeing and nature connectedness are indeed inter-related. A higher level of connectedness to nature is associated with increased wellbeing and greater mindfulness (Howell et al., 2011), suggesting there are mechanisms that could be triggered under the right circumstances.

S2.9 Moving on from nature as a contextual factor, to nature-connectedness as a mechanism for wellbeing. There is emerging work on the lesser understood conceptualisation of having a *connection to nature*, commonly termed 'nature connectedness', and its relationship to mindfulness and wellbeing (Howell, Dopko, Passmore & Buro, 2011). For example, Mayer & Frantz (2004) cite connectedness to nature as 'the extent to which an individual includes nature within his/her cognitive representation of self' Mayer & Frantz (2004) which this supports Wilson's (1984) Biophilia theory, that humans have an innate connection with the natural world. Similarly, Howell et al., (2011) argue that nature connectedness is akin to a meaningful interaction, experiential, a sense of one-ness with the natural world, and therefore is aligned with eudaimonic wellbeing. Further insight into mindfulness in nature leading to wellbeing can be drawn from Howell et al., (2011) who conducted two studies comparing empirical data, using a range of scales to examine correlations between connectedness to nature (Mayer & Frantz, 2004), mindfulness (Brown & Ryan, 2003) and various components of psychological wellbeing (two examples being emotional wellbeing (Keyes, 2005), social wellbeing (Keyes, 1998)). They found significant positive associations between nature connection and eudaimonic

“functional” psychological and social wellbeing and some association between emotional, i.e. hedonistic “feeling-good” wellbeing. Howell *et al.*, (2011) recommend that future research on the moderators and mediators relating to nature connectedness, mindfulness and wellbeing. In the context of this study, the results aim to give insight into what moderates the relationship between mindful nature connectedness and enhanced wellbeing as the desired outcome. This study also aimed to understand better the mediation between connectedness with nature and wellbeing. Howell *et al.*, (2011) suggest this may be linked to life meaning or possibly enhanced wellbeing through physical activity.

S2.10 Data relating to the outcomes of having an enhanced connection to nature have been collated by Natural England (NE, 2020) which reported that people with high nature connectedness were 1.7 times more likely to say that their lives were worthwhile than those with low nature connectedness. Furthermore, people who visited nature at least once a week were 1.9 times more likely to also report good general health (NE, 2020). Those with ‘pro-environmental behaviours’ were 1.8 times more likely to report a deeper interaction with nature through conservation behaviours than those with low nature connectedness. Interestingly the visit frequency of conservation behaviours did not show a significant relationship with these behaviours. The report makes the point that pro environmental behaviours require a greater personal commitment, currently reported by a relatively low percentage of the population (no figures given), and this was associated with higher levels of nature connectedness (NE, 2020). Pro-environmental behaviour is driven by processes underpinned by Green Mind Theory according to Pretty *et al.* (2017) theorise the physiological changes that occur when immersed in nature activities. This theory speculates that the mind is linked to the body and the brain. Thus, the wider environment shapes people (and their minds), minds change behaviours and behaviour shapes the environment.

In summary the literature review focusing on ‘Take Notice’ found that this concept was often framed in the literature as ‘mindfulness’. The interplay between wellbeing, nature connectedness and mindfulness documented in the literature review provides theoretical insight that contributes to the C-M-O configurations in relation to this study,

in seeking to understand the role of civic environmental activity as a causal for deeper meaningful interaction with nature, for enhanced wellbeing, why this should trigger for some but not others is less understood from the literature. One key point may be that it is a challenge to get people who do not feel a connection to nature to take part in research to measure connectedness to nature (and they are less inclined to take part in these activities).

2.5.2.4 Learn

‘Learn – ‘try something new, rediscover an old interest’’ (Aked et al., 2008, p.9)

According to Aked et al., (2008), in developing of the ‘Ways to Wellbeing’ they concluded that there is evidence to show that learning plays a vital role in social development and cognitive development. Their work claims that continuous learning throughout life supports the practice of self-generated goals, for increased esteem, self-resilience and wellbeing. In their appraisal Aked et al., (2008) claim studies have shown that life-long learning can provide a sense of purpose, hope, competencies and social interaction with others especially when the experience is shared. However, the length of this section reflects the distinct lack of literature available relevant to civic environmental activity and learning specifically.

S2.11 Learning as an outcome derived from volunteering in the natural environment was supported in a small number of papers (Townsend, 2006; O’Brien, Townsend and Ebdon, 2010; Molsher and Townsend, 2016). Findings suggest that environmental volunteering offers opportunities to learn new skills as part of the experience (Burls, 2007; Wilson, 2009; Miller et al., 2002; O’Brien, Townsend and Ebdon, 2010). However this was not attributed as a mechanism to wellbeing specifically.

In summary, the literature review focused on learning and environmental volunteering revealed a distinct lack of studies that specifically examined the impact of learning opportunities for wellbeing in an environmental volunteering. The specific link between ‘learn’ and civic environmental activity is not well evidenced therefore more research is needed in this area.

2.5.2.5 Give

‘Give back – ‘volunteer your time.. see yourself and your happiness linked to the wider community’’ (Aked et al., 2008, p.10)

‘Give’ in this study, is interpreted as ‘giving something back to the community’ or citizenship.

Within the wider literature, studies from a neuroscience discipline have shown that social cooperation is intrinsically rewarding (Rilling et al., 2007). Operant conditioning (Skinner, 1971) ascertains that a significant part of behaviour involves securing rewards or avoiding punishment. Seeking and achieving rewards contributes towards social and cognitive functioning (Skinner, 1971) which is a vital part of human development and wellbeing. The Foresight report on mental capacity and wellbeing (Kirkwood et al., 2008) highlights the need for individuals to have a sense of purpose in society and make a contribution to their community and increased self-worth and positive feelings are associated with team-led, shared, giving activities. Social cohesion and sense of community, active participation and community life have been significant in the research surrounding wellbeing. The notion of volunteering to ‘give back’ as meaningful activity providing a sense of purpose, particularly for older people (Greenfield & Marks, 2004).

The majority of the literature supporting links to citizenship and wellbeing looked to examples of volunteering that were not specific to environmental volunteering. As discussed in section 2.4.4 ‘mattering’ (Piliavin and Siegl, 2007) theorises the sense of eudaimonic and hedonistic wellbeing when putting something back into the wider community. However, useful insight that can be drawn from a small number of papers found under the search criteria, that help to define the concept of citizenship and the interplay between individual action, sense of community and sense of place.

S2.12 From a contextual perspective citizenship links individual’s relationship with places and spaces. Arnberger & Eder’s (2012) paper used a regression analysis to conclude that green space provision and quality can foster community attachment. This was explored further by Kyle, Mowan and Tarrant (2004) in their examination of the relationship between a *sense of community* and *sense of place* or ‘*place attachment*’. Using Lawler’s (1973) theory of motivation they investigated the

motivations that drive people become engaged in natural environments. Lawler's theory of motivation ranks instrumental expectations (i.e. effort), with performance outcomes (e.g. praise), which leads to longer-term goals (such as solidarity, social recognition) (Kyle et al., 2004). They used covariance structure analysis to examine their hypothesis linking place motivation with place attachment and concluded that 'not all dimensions of motivation had a significant effect on the dimensions of place attachment' Kyle, Mowan and Tarrent (2004). These findings are interesting and useful to this study because this addresses the fact that participants may not have any previous connection to the sites where they are undertaking activities, which is interesting from a context perspective, that familiarity at a neighbourhood level may not be an important factor for some.

S2.13 The overarching concept of Etzioni's political "communitarianism" (Etzioni 1993) underlies the definition that Iezzi & Deriu (2014) cite to describe active citizenship, "the conscious participation of people into the civil, social and political life of the community they belong to, and to which a wide system of rights and duties make up citizens being (Etzioni 1993)". This links the role of citizenship to having rights to change and participate in actions that enhance communal assets for the common good (Iezzi & Deriu, 2014). Iezzi & Deriu (2014) discuss that volunteering provides a platform where social relationships and networks can develop, generating perception of solidarity and social capital which leads to an enhanced quality of life.

S2.14 In relation to a sense of citizenship as a mechanism to wellbeing, there was only one record returned within the literature search that focused specifically on assessing wellbeing relating to citizenship featuring a small reference to volunteering to change environments. The paper was based on statistical analysis, specific to women, using the Italian National Institute of Statistics to measure wellbeing relating to a number of indicators ranging from political activism to volunteering (Iezzi & Deriu, 2014). This paper's relevance to this study was relatively weak.

S2.15 From an outcome perspective George and Sice, (2014) argue that individual wellbeing is not confined to solitary actions, and that wellbeing relies on feeling part of a wider group, community or society as part of humanity, which

underpins the experience as a sense of ‘one-ness’, a paradigm of everything being connected through citizenship (George and Sice, 2014).

In summary the literature focused on ‘Give’ has helped to define the concept of citizenship and explain the interplay between domains such as individual action, sense of community and sense of place. There was very little relevant literature specific to civic environmentalism and individual’s experience of their perceptions of citizenship in the context of this study, and the contribution to enhanced wellbeing. More research is needed in this area.

2.6 Summary of literature review

A realist review was undertaken in two stages (Pawson et al., 2015). The initial stage sought to substantiate the programme theory for this study. This first stage identified relevant studies and trends and themes emerged, i.e., wellbeing and nature; volunteering as a mechanism to wellbeing; pathways to participation. These can be directly aligned to shape the programme theory based on C-M-O configuration (Westhorpe, 2014). The second stage of the literature review sought to refine the programme theory through refining the literature review process itself in order to understand the C-M-O configuration that incorporates the ‘how’ and ‘why’ into the initial programme theory. In order to do this, the Five Ways to Wellbeing framework: Connect, Be Active, Take Notice, Learn, Give (NEF, 2008) was used as a framework to individually explore wellbeing pathways.

2.6.1 Summary of literature review using C-M-O as narrative

The C-M-O configurations constructed should be considered and thought of as ‘sentences’ to provide a narrative to explain the programme theory (Pawson et al.; 2005). An overview of the programme theory is given at the start of this chapter and discussed in greater detail in the next Chapter 3 section 3.6.5.

In constructing a narrative from the findings from the literature review, a number of observations can be made. As demonstrated in Figure 5 (section 2.2), the narrative to describing the overarching programme theory is: in the context of civic environmental outreach (C) participation (M) leads to increased wellbeing (O). There was a significant amount of literature framed as volunteering and wellbeing outcomes, however the

quantity and quality of literature diminished when specific to environmental volunteering, a non-standard term which has been used as a descriptor for civic environmental activity. However there is some evidence to suggest that it is plausible for programmes and interventions designed to facilitate participation (M) in civic environmental activities (C) lead to increased wellbeing (O), supported by (Lovell et al., 2015; Hansen-Ketchum and Halpenny, 2010).

Figures 6 & 7 in section 2.3.2 relate to a number of narratives that can be drawn from the literature review findings. For example, the evidence would suggest that the causal mechanisms (C-M) at play are at times defined by the pathway (C) into the activity. People seeking to improve physical activity (C) may follow a pathway through formal 'green exercise' programmes (C) (Pretty et al., 2005; Barton & Pretty, 2010; Birch, 2005) designed to engage people in civic environmental activity for increased physical activity (C). There is a suggestion from evidence that physical activity and increased social cohesion in this context may be the catalysts (C-M) to wellbeing (O).

The evidence suggests that the drivers, i.e., motivations for people wanting to participate in civic environmental activity provide the context by which a mechanism could be 'fired'. For example, those seeking to increase their social connections (C) respond to programmes designed to enable participants with a common purpose to connect (C), increasing social relationships through forging and strengthening relationships with others (C-M) leading to enhanced wellbeing. There have been very few studies to date that have looked at causal mechanisms in relation to learning in the context of civic environmental volunteering. However, studies have shown that learning may be a part of the experience (C) but the populations (C) and causal mechanisms (C-M) are less understood that would lead to increased wellbeing (O).

There is substantial evidence that would suggest that in the context of civic environmental outreach programmes (C) exposure and interaction with nature (C-M) 'triggers' enhanced wellbeing. There are theories to support this such as restorative therapy (Kaplan, 1989) green mind theory (Pretty et al., 2017) although the theoretical component behind psychological drivers was less explained.

There is some evidence to suggest that in the context of civic environmental volunteering (C) a sense of citizenship (C-M) can lead to enhanced wellbeing and this has been theorised as ‘mattering’ (Piliavin and Siegl, 2007).

Overall, there were only a small number of papers that acknowledged civic environmentalism as a nature based activity as a pathway to improved wellbeing (Townsend, 2006; O’Brien, Townsend and Ebdon, 2010; O’Brien *et al.*, 2011; Bragg & Atkins, 2016; Lovell *et al.*, 2015; Hansen-Ketchum and Halpenny, 2010). There were varying degrees of appropriate literature available, and a variety of study types and disciplines have been used. There is a lack of evidence specific to the phenomenon, particularly taking a holistic view to each of the ‘5 Ways’ and this study provides new and unique insight into civic environmentalism and wellbeing outcomes.

In summary, the literature review has been conducted in two stages, the first to understand and construct the overall programme theory, the second stage to delve deeper and find evidence to align with the programme theory using the Five Ways to Wellbeing as a framework, seek and understand causal mechanisms. There is some evidence available, from a range of methodologies, to suggest that the programme theory is plausible. However, more evidence is needed to understand the phenomenon in terms of what context works for who, how and why (Pawson and Tilley; 1997) and this study seeks to address gaps in the evidence as demonstrated in the literature review. It is intended that the outcomes from this study will influence and inform practice further future studies.

This research offers a unique contribution to the science base because little is demonstrated in the academic literature about the wellbeing impacts from taking part in greening initiatives that facilitate civic environmental activity. In the context of civic environmental activity, there is very little research that specifically asks: *what works for who and why and in what context?* The phenomenon is currently an under researched topic with the potential to tackle health issues (Townsend, 2006; O’Brien, Townsend & Ebdon, 2010; O’Brien *et al.*, 2011; Bragg & Atkins, 2016). The health sector is seeking innovative methods to address the multiplicity of problems facing contemporary health and social care, and environmental outreach organisations who could provide a service to address health issues. The green social prescribing movement is an emerging

pathway between GP services and other community services to access support provided by voluntary and third sector organisations' programmes of work (Bragg & Leck, 2017; Van den Berg, 2017; Bertotti et al., 2018; Howarth et al., 2020; Liebmann et al., 2022; Wood et al., 2022; Sun et al., 2023; de Bell et al., 2024) and additional evidence would support this process further. Green social prescribing is not the only pathway for participants to access the potential health and wellbeing benefits of participating in civic environmental activities, and this dimension is explored in the study. The study aims to develop a robust framework that provides: a contribution towards the suite of methods in gathering evidence to inform and support future delivery of activities; and improved systems through a more nuanced understanding of engagement and implications of bridging the environmental and health sector.

The final point to make here is the literature review process was iterative and not conducted as a snapshot at one point in time but evolved over the course of the study within a realist study (Pawson et al., 2005).

This literature review undertook a realist approach which is discussed in much further detail in the next Chapter 3 Methodology, where realist philosophy and realist evaluation is explained as a good fit for this study.

3 Chapter 3 Methodology

The methodological approach for this study is 'Realist Evaluation' which is a form of realist research. A realist approach should be taken to every aspect of a realist evaluation (Pawson & Manzano, 2012), which includes the Literature Review in Chapter 2. The rationale for using this approach is discussed in detail throughout this chapter.

As a quick introductory overview, realist evaluation involves the use of programme theory, with a set of hypotheses to test the theory using a realist approach (Westhorp et al, 2011). Put simply, a programme theory provides the overall narrative to explain how and why the phenomenon may lead to a desired outcome (Pawson & Tilley, 1997).

Therefore, in this instance the programme theory sets out to explain how, and why in the context of greening initiatives, civic environmental activity leads to increased wellbeing (desired outcome). The process of devising the programme theory and hypotheses is discussed in much detail in this chapter. The set of hypotheses are developed and applied to the programme theory, to test the theory and dig deeper into understanding how, why and for whom and in what context the programme theory would best operate for the desired outcome. As will be discussed in much detail within this chapter, the contextual factors form a key consideration of the programme theory and the evaluation process. Therefore, this allows for exploration and a closer understanding of broader perspectives, bringing together the participant and practitioner experiences to better understand the conditions for the phenomenon (as portrayed programme theory) to operate. Because realist evaluation embraces stakeholder perspectives, it makes this approach pragmatic and valuable to both research and practice (Pawson & Tilley, 1997).

The structure of this chapter will begin with an introduction to realist evaluation, presenting an overview of its heritage and basic principles. To fully appreciate this methodological approach, it is necessary to understand the realist philosophy and theory behind this form of evaluation, and this is covered in detail further into the chapter. The concept of a programme theory has been briefly introduced but the use of theories in realist evaluation extends beyond the use of just this type of theory and this will be discussed in detail. Next the realist evaluation design process will be

explained, along with the methods used and how this ties-in to realist evaluation .

Following that, the data analysis process for both quantitative and qualitative datasets is covered in detail. The chapter ends with a summary including an outline of how the methodology seeks to fulfil the study objectives, as discussed in Chapter 1, section 1.6.2.

3.1 Introduction to Realist Evaluation

The term ‘Realist Evaluation’ has borne from Pawson and Tilley’s (1997) influential ‘Realistic Evaluation’ (1997). Realist evaluation is an approach that is grounded in Realism, a philosophy that asserts both the material and social world are ‘real’ and have real effects and that it’s possible to get a closer understanding of what causes change. Pawson and Tilley ascertain from the very outset the usefulness of realist evaluation in their play on words ‘real’, ‘realist’, ‘realistic (Pawson and Tilley 1997). They cite ‘real’ because the evaluation is carried out in the real world, in real life scenarios to address real life problems, ‘Realist’ because it is grounded in the philosophy of realism (discussed in detail further on in this section) and ‘Realistic’ in that it is a form of applied research to inform the thinking and practices of policy makers and practitioners (Pawson and Tilley, 1997).

A realist evaluation does not seek to pursue questions such as *does this work?* or *what works?*. A realist evaluation seeks to understand *what works for whom, in what context, in what respects and how?* (Pawson & Tilley, 1997). The realist mantra, that programmes are ‘theories incarnate’ (Pawson, 2006) mean that when a programme is implemented it is at its very nature actually testing a theory about what might cause change, although it may not be clear or obvious what that theory is. Therefore, the mission of a realist evaluation must start with making the theories within a programme explicit through the development of concise hypotheses about how a programme might work, for whom and why (Westhorp et al., 2011; Westhorp, 2014). Data must be sought to explain beyond the impacts, but the context and mechanisms to achieve the outcomes within a programme.

3.2 Realist philosophy

Philosophical assumptions are centred on ontology, *what we know as reality*, and epistemology, *what can be known about reality* (Crotty, 2004). Realism is a philosophy that sits between positivism and constructionism, not equidistant, but weighted towards positivism (Ramesesproject, 2021), (see Figure 9). A comparison of the ontological and epistemological philosophies and assumptions can be seen in Figure 9. The following sections explain ontological and epistemological assumptions further.

	Positivism	Realism	Constructivism
Ontology	There is an objective reality, which exists independent of us.	Material & social reality – we interact with reality.	Subjective reality – we ‘create’ reality
Epistemology	Truth and final knowledge exists.	No final truth or knowledge, but improvement in knowledge is possible.	No way to choose between interpretations. What we jointly believe is true.
Causation	Constant conjunction, linear causation. Programs cause outcomes.	Mechanisms operating differently in different contexts generate patterns of outcomes.	Co-constructed interpretations lead to actions and outcomes.
Implications for evaluation	Evaluators ‘tell facts’. Context factors should be eliminated: Randomised Control Trials/ Quasi-experimental methods.	Evaluators explain how and where programs generate outcomes. Mixed methods (qualitative and/or quantitative).	Evaluators describe stakeholder interpretations. Qualitative methods

Figure 9. Philosophical differences: Positivism, Realism and Constructivism (Westhorpe, 2011 pg. 5)

3.2.1 Realist ontological assumptions – a lean towards positivism

A realist philosophy takes a positivist ontological perspective that the real world does exist independently or interdependently. That is, there is a world that we can observe directly and that the real world and social world are ‘real’. We may not be able to ‘see’ what is real in the social world but both material and social worlds are and have a real effect in the world (Wong, Westhorp, Pawson & Greenhalgh, 2013; Bhaskar 1978). An additional ontological assumption within realism is that everything is organised in systems, either connected to larger systems or more micro level systems. for example,

in the physical (material world) biological systems organise living organisms (Westhorp et al., 2011). In the social world systems are open and dynamic and subject to change (Pawson and Tilley, 1997), for example people may change relationships, jobs, change their minds. Therefore, any event in a social system may cause many changes and have many consequences as a result. So within the context of a programme, there may be many outcomes and causes of those outcomes. Therefore, programmes and policies can have real effects and these can be intended or unintended, because social programmes are open systems all levels may interact and influence outcomes. This non-linear, dynamic process means that mechanisms will be multiple and competing and interact with the context to produce outcomes or unintended outcomes (Pawson and Tilley, 1997; Westhorpe 2011).

3.2.2 Realist epistemological assumptions

People's experiences are filtered through their own brains and are influenced by feelings, background, culture etc. that are individual to a person. A realist perspective would argue that the real world regulates, and this involves setting boundaries on what is reasonable to believe. Realists believe that knowledge can be improved over time (Pawson and Tilley; 1997), therefore, a realist perspective and realist evaluation does not seek to understand what is 'true' in its purest form and so does not profess to claim absolute certainty about evidence and evaluation findings. A realist argues that knowledge is cumulative, and evaluations therefore need to be iterative across programmes, and at best seek to understand the best we can know so far about a programme (Westhorpe, 2011).

3.2.3 Challenges around evidence - a realist perspective

There are challenges to researching and evidencing impacts of outreach programmes, due to subjectivity of wellbeing and the social and dynamic nature of the context and experience which is subject to many outside influences (Pawson & Tilley, 1997).

Realist principles align with social and human science that has an acute awareness and appreciation of the dynamic nature of the social world (Emmel et al., 2018). A realist evaluation investigating a programme takes into account that interventions are non-stationary and subject to a wide range of factors such as the resources available

for the intervention, external influences and structures that are beyond the control of the research or participants themselves (Emmel et al., 2018). More traditional experiments present limitations, by trying to quantify variables into empirical data, ignoring the dynamic and emergent aspects of social realm (Emmel et al., 2018). Science from a realist perspective is ‘the synthesis of interpretation and structure’ (Emmel, et al., 2018, pg5). Realist science uses models, i.e. theories to explain social processes. Causal influences are subject to context and execution, emergent in nature, and produce outcomes through a process of complexities, navigating a pathway of dependencies (Emmel et al., 2018; Pawson & Tilley, 1997).

Standards of evidence where randomised control trials (RCT) are considered the gold-standard are not appropriate measures for programmes or initiatives that are socially driven. For example, RCTs and experimental designs employ a post-positivist, successionist understanding of causality, i.e. if the result show that x produces y enough times then x causes y (Pawson & Tilley, 1997). This is correlations between measurable variables and relies on a closed system. However, programmes such as greening initiatives are social systems, which are open systems, subject to many variables (Pawson & Tilley, 1997). Realists recognise that social systems are open and that there are likely to be a number of causal mechanisms operating at different levels within a system. Mechanisms interact in different ways in different contexts to produce outcomes. Realist research seeks to explain what contexts cause different causal mechanisms to operate to produce an outcome.

3.3 Realist philosophy – Context > Mechanism > Outcome

Central to a realist philosophy is the concept of causal mechanisms, and these are determined through a configuration, or process, of Context (C), Mechanism (M) and Outcome (O), or C-M-O configuration (Pawson & Tilley, 1997) see Figures 10 & 11.

3.3.1 What is a mechanism?

Mechanisms are at the core of realist evaluation, and is the descriptor used to explain how and why change occurred (Pawson & Tilley, 1997). Where successionist approach

would seek to identify causality as ‘x makes y’, a realist approach would seek to understand generative causality, i.e. *why* does ‘x make’ y and in *what circumstance* (Pawson & Tilley, 1997). See Figure 10.

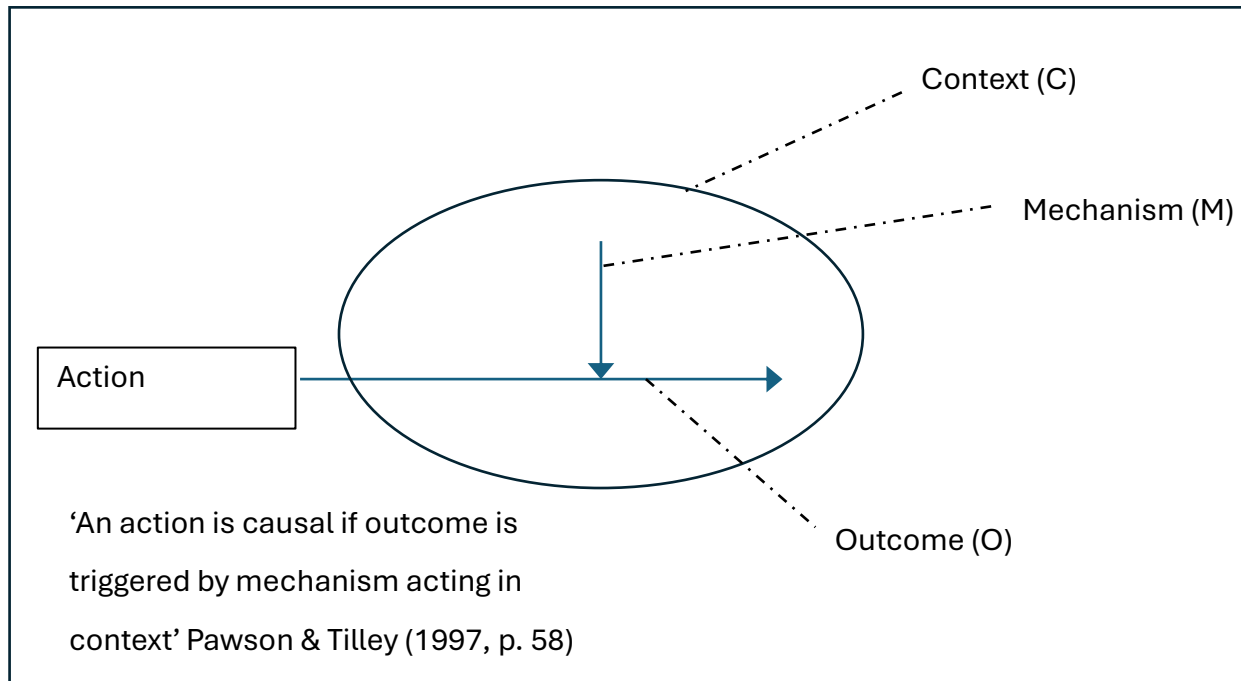


Figure 10. Generative causation in realist evaluation (Pawson & Tilley, 1997, p. 58)

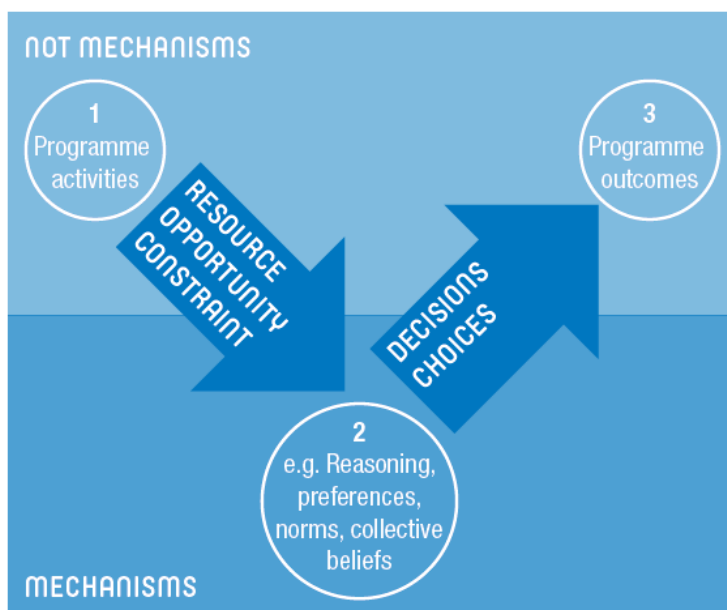


Figure 11. Generative explanation in realist programme evaluation, Wong, G., Westthorp, G., Pawson R, and Greenhalgh, T. (2012)

A successionist approach to explain a phenomenon is based on observed relationships between variables in a closed system. Observed relationships between variables forms the basis of evidence for something that ‘works’. A realist perspective is generative and assumes that not all causal forces can be observed (Pawson & Tilley, 1997). Pawson and Tilley (1997) ascertain that ‘programme mechanisms’, causal forces that link the material and social world are not usually observable, and operate at different levels within a system, this forms the heart of realist research.

Programme mechanisms seek to explain how and why programmes and interventions lead to outcomes. Programmes and interventions are complex in that they are an interaction of political, social, material resources, multiple stakeholders plus human agency, therefore there may be multiple mechanisms within a programme each aligned to a specific group and sets of circumstances. Context can feed and constrain mechanisms.

Programme mechanisms are the interaction between programme resources and the ways in which people interact with them. Programme mechanisms should explain how and why outcomes occur. Programme mechanisms are not observable but are still ‘real’ but shaped by social world and the context.

3.3.2 What mechanisms are not?

Pawson and Tilley’s (1997) conceptualisation of a mechanism is described as the ‘trigger’ or ‘firing’ point that results in change (outcome). Westhorpe (2014) advocates the need to explain mechanisms as working at different levels across systems. Whilst the concept of mechanism is still evolving, what is clear in current best practice is what does not constitute a mechanism (Ramesesproject, 2021). One common mistake is to automatically assume that activities or variables are mechanisms, and that the researcher must not be drawn to the observable, but to seek (when appropriate) beyond the observable to really identify the mechanism at play (Pawson and Tilley, 1997; Astbury and Leeuw, 2010) (see Figures 10 & 11 as an illustration). Furthermore, mechanisms can be ready to fire, but never do fire, unless the context is favourable (Pawson & Tilley, 1997). Causal mechanisms are discussed further in a later section 3.3.4. Beforehand, it is useful to explore in more detail what is meant by *context*.

3.3.3 What is meant by context in realism?

Pawson & Tilley (1997) defines context as part of realist evaluation as “the contextual conditioning of a causal mechanism which turns (or fails to turn) a causal potential into a causal outcome” (Pawson and Tilley, 1997, p69). What they are describing here are the conditions by which are necessary for a mechanism to be ‘fired’. A realist approach would ask: *why does this work in this situation for this person, but work in a different situation for another person?* The Rameses II guidance and quality standards on realist evaluation (Ramesesproject, 2021) uses an example by Pawson and Manzano (2012) to illustrate this point “why does a programme work in Wigan on a wet Wednesday and why does it then fail in Truro on a thunderous Thursday?” (Pawson and Manzano, 2012). Context can be complex and different types of context, cultural, social, organisational, political interact and can be interdependent (Pawson, 2013). As with all of the elements within a CMO configuration, contexts can interact at different levels, described as being from the atomic to cosmic, and the challenge is to identify what is relevant to the study in question (Ramesesproject, 2021). Policy, for example will provide a different context depending on how stakeholders might apply policy. Stakeholders may deploy resources that are integral to the ‘trigger’ moment that may or may not generate an outcome. Therefore, context is interdependent – not independent – with the mechanism and outcome. Pawson and Manzano (2012) heed a warning to researchers not to treat ‘context’ ‘mechanism’ and ‘outcome’ as separate datasets, the C-M-O configuration, as scenarios must be treated as one string, like a sentence providing a narrative.

Context is affected by social ‘norms’, individuals own capacity, set of beliefs, gender, culture, class etc. and groups may respond to how programmes are implemented differently (Westhorp et al., 2011). Contexts operate in time and can also vary over time and are a complex mix of factors, political, social, economic etc. interplayed with human individual or group characteristics and nuances (Pawson & Tilley, 1997). The context is inextricably linked to the mechanism and outcome as a C-M-O *configuration* and so can be analysed distinctly, but with reference to the wider configuration (Pawson & Tilley, 1997). The challenge is to understand the functionality of the context

that triggers the mechanism within a programme (Pawson & Tilley; Westhorp et al., 2011).

3.3.4 Realist philosophy and causation

In any evaluation understanding what causes something to happen, that is, how did a programme achieve an *outcome* is likely to be integral to the work (an outcome can be a positive outcome, or a negative unintended outcome). In realist philosophy, causation is related to the *mechanism*, and powers, processes or patterns relating to the *context*. How the context and mechanism interact are the ingredients for causal mechanisms (Pawson & Tilley, 1997). Realist principles ascertain that mechanisms cannot be directly observed and are ‘fired’ or ‘triggered’ depending on the context and can operate and generate outcomes at all levels of reality (moving between systems). Because mechanisms can’t be directly seen or observed, the task within a realist evaluation, is to hypothesize and test the hypotheses. A realist evaluation is concerned with attribution of outcomes which are generated through a mechanism ‘firing’, i.e., casual mechanisms (Pawson and Tilley, 1997; Westhorpe 2011; Ramesesproject, 2021).

When determining how programmes work, a realist evaluation proposes that programmes offer resources and opportunities for change (to achieve an outcome), and it is participants decision making, behaviours and actions, based on the resources available within the context, that causes that change. This is summarised in the formula: Reasoning + Resources = Mechanism (Pawson and Tilley, 1997). Therefore, a realist evaluation seeks to grow an understanding of the mechanism, how a programme has enabled decision-making or change in behaviour. Programmes are multi-dimensional, for example, decision-making is made at a micro (individual level) but also exists at a macro (organisation or societal) level and the two are at play within any programme. This framing is different to other evaluations where the assumption may be that it is the programme itself that causes change (Westhorpe, 2014).

3.4 Theories and Realist Evaluation

There are many different types of theory-based evaluation (Westhorpe, 2011), therefore it is useful to define what is meant by ‘theory’.

3.4.1 What is a theory?

It is difficult to define exactly what a theory is, and theories can vary in their origin and fastidiousness, but it is generally widely accepted that good theories should have explanatory power, follow some form of logic and support progress (Van Lange, Kruglanski and Higgins, 2012). There is general agreement that advancement of science relies on theory or theories and theory can help to explain phenomena and explain underlying truth that may not be obvious on the surface (Van Lange, Kruglanski and Higgins, 2012). Theories provide a structure and way of organising and understanding the world around us by providing explanations for the mechanisms that produce effects. Theory is pragmatic and provides a tool to apply to otherwise seemingly chaotic data and information. Social scientist Kurt Lewin, founder of the concept of Action Research and a champion of the importance of combining theory and practice in the social science, sums up in his well-known maxim:

“Nothing is as practical as a good theory” (Lewin, 1945)

Kurt Lewin’s famous quote here reflects the journey that social psychology theories have taken particularly in theory application to real life phenomena (Van de Ven, 1989). Theory traditionally associated with purist view of logic, deduction and knowledge, juxtaposed against intuition, implementation and ‘doing’, therefore application being the very antithesis of theorising (Van Lange, Kruglanski and Higgins, 2012). The close relationship between abstraction of theory and its connection to application has been recognised under the notion of translational research, the move towards academic institutions wishing to apply ideas to solve real-world issues in the social arena.

3.4.2 The use of theories in Realist Evaluation

Under the umbrella of theory-based evaluation there are four kinds of theory: philosophical theory, evaluation theory, programme theory and substantive theory (Westhorp, 2014). Philosophical theory is concerned with the nature of knowledge and

how we understand knowledge. Evaluation theory looks at how things can be evaluated, and impacts be better understood. Programme theory is the theory within a programme about how the programme is intended to work. Substantive theory are theories from a particular discipline that explain the outcome of a process or interaction (Westhorpe et al.,2011; Westthorp, 2014). Realist evaluation has feet in all four of these theory camps (Wong et al., 2013). For example, it is grounded in the philosophy of realism, it is an evaluation method in its own right, it has a particular way of devising a programme theory through the use of Context-Mechanism-Outcome configurations (discussed later in this section) and it may use formal substantive theories or informal theories to understand how mechanisms may work (Westthorp et al.,2011).

3.4.3 Middle-range theories

The term ‘middle-range theory’ is frequently used in realist research but is often misinterpreted as being the programme theory or a formal theory (Ramesesproject, 2021). However, ‘middle-range’ is not a type of theory but an adjective to describe the point, or level, of abstraction of a theory (Ramesesproject, 2021). Therefore, aside from philosophical theory, middle-range theories can be applied to other forms of theory applicable to the realist study. For example, the C-M-O configuration is a middle range theory, i.e. ‘specific enough to clearly explain the phenomenon, and general enough to apply across cases of the same type’ (Ramesesproject, 2021,pg. 3). Social psychological theories tend to be ‘middle range’ theories, that is, they attempt to provide a working hypothesis (rather than satisfy an empirical purist’s grand, set-in-stone, theory) Van Lange, Kruglanski and Higgins (2012).

Revisiting the realist principles, Pawson and Tilley ascertain that programmes are ‘theories incarnate’ in that whenever a programme is implemented it is testing a theory about what might cause change even if that theory may not be explicit (Pawson and Tilley, 1997). The theories help to develop clear hypothesis about how, why and for whom, programmes might ‘work’, i.e. lead to desired outcomes.

3.5 Strengths and weaknesses of Realist Evaluation

There are a number of strengths that realist evaluation offers, which makes it an appropriate methodology for this study. Realist evaluation and realist reviews are increasingly being used to understand real-life programmes by researchers, practitioners and policy-makers to understand how a programme works (Pawson & Tilley, 1997; Westhorp et al., 2011; Bertotti et al., 2018; Tierney et al., 2020; Howarth et al., 2021; Renmans & Pleguezuelo, 2023; Baker et al., 2023; Haywood et al., 2024). Because realist evaluation can give insight into what works for whom and how, it can be used to understand how a programme might be replicated in a similar or new context (Westhorp et al., 2011).

What realist evaluation cannot do is to make claim *with absolute certainty* that a programme works, as discussed it is not philosophically dispositioned to do so and neither is the programme itself when its outcome is based on participant's own subjective wellbeing. However, what realist evaluation does as a methodological approach is accommodate the complexity of programmes where a myriad of contextual factors may influence outcomes (Pawson & Tilley, 1997). In this instance funding, disciplinary silos, organisational resources, public realm greenspaces, participant's motivations and expectations, public attitudes are just some of the factors that provide opportunities and constraints for (subjective) wellbeing as the desired outcome. Realist evaluation provides an approach to find order in this jumbling mass. Firstly, by taking a methodological approach that begins by defining the programme theory and then mapping a C-M-O configuration to provide structure, enabling the *how* and *why* processes to be better understood. Secondly, through a systems approach, providing the space required for dynamic contextual factors which are operating at different levels. Programmes providing opportunity for civic environmental participation are open social systems, at the mercy of funding and organisational constraints, different pathways to participation, landowners, people and personalities, to name but a few. Finally, realist evaluation recommends the inclusion of a range of stakeholders in the design of the evaluation, to truly develop an understanding of *what is going on here?* (Pawson & Tilley, 1997). Furthermore, practitioner insight is valued and welcomed (Pawson & Tilley, 1997) rather than immediately branded as bias or the study deemed

unrobust. However, a methodical and transparent approach must be developed and executed to ensure the trustworthiness and rigour (Wong et al., 2013; Westhorp et al., 2011).

3.6 Realist Evaluation Design

Realist evaluation is an approach rather than a model of evaluation (Westhorp et al., 2011; Pawson & Tilley, 1997; Wong et al., 2013; Ramesesproject, 2021). To aid research there are a set of quality standards for realist evaluation (see for instance Ramesesproject, 2021) that guides the methodological process for this study. This guidance is robust in that it has been produced by academics who have either founded (Pawson) or written extensively on realist evaluation (Greenhalgh, Wong, Westhorp, Manzano and Jagosh) (Ramesesproject, 2021). The key message from the quality standards is that the design of the evaluation must be transparent and realist at the very core of its design, i.e., seek to understand C-M-O configurations (Ramesesproject, 2021).

3.6.1 Realist Evaluation Design Process

This section sets out the requirements and processes for designing and conducting a realist evaluation which has been followed for this study. In a realist evaluation the process is iterative and so the steps outlined are not meant to portray a linear process (Westhorp 2014; Ramesesproject, 2021). An overview of these steps are: 1. Establish working relationships; 2. Clarify the purpose of the evaluation; 3. Devise overarching and subsidiary questions; 4. Understand and map the programme theory; 5. Choose appropriate methods and instruments for data collection; 6. Data analysis seeking understanding of C-M-O; 7. Reporting in a realist format (Westhorp 2014; Ramesesproject, 2021). Table 3-1 below outlines each step and discussion by section accordingly.

Table 3-1. Iterative steps in Realist Evaluation Design Process (Westhorp, 2014; Ramesesproject, 2021)

Step	Refer to sections
1. Establish working relationships	3.6.2 & 1.3.4
2. Clarify the purpose of the evaluation	3.6.3 & 1.6
3. Devise overarching and subsidiary questions	3.6.4
4. Understand and map the programme theory	3.6.5
5. Choose appropriate methods and instruments for data collection	3.8
6. Data analysis seeking understanding of C-M-O	3.9. 3.10 & 3.11
7. Reporting in a realist format	Chapters 4,5 & 6 Findings

3.6.2 Establish working relationships

This study is intended to inform policy and practice, so it was apt that partnerships were established, and where appropriate, stakeholders co-designed elements of the study – such as the third-party recruitment strategy and procedure in line with ethics protocol, (Pawson & Tilley, 1997; Ramesesproject, 2021). Understanding what resources are available within the dimensions of any collaboration is crucial in the design process (Westhorp, 2014) and his study worked with practitioner stakeholders and organisations providing their own insight and participant recruitment opportunities within their respective outreach work for this study. This process has been approved by the Ethics Committee.

3.6.3 Clarify the purpose of the evaluation

The purpose of the evaluation should feed the evaluation itself. The need for the study has been discussed in the introductory chapter. To recap, the purpose of this study is to understand better how, why and for whom participation in civic environmental activity can lead to increased wellbeing. The outcome of realist evaluation s can inform many aspects relating to the programme theory, beyond its primary enquiry (Westhorp et al., 2011). For example, the insight from this study will give practitioners, commissioners, funders and policy-makers a better understanding of how and why participation in the phenomenon leads to increased wellbeing outcomes (or indeed

decreased wellbeing and why). This study provides a practical framework by which to continue the process of gathering data on programme impacts beyond the life of this study and steer the design of engagement programmes to be better suited by cohort with best resources available.

3.6.4 Overarching and subsidiary questions

The questions that guide the design of a realist evaluation must incorporate the purpose of the evaluation and reflect the principles of the realist evaluation. These questions – or hypotheses – must test the priority aspects of the programme theory (Ramesesproject 2021; Westhorp, 2014). These questions are directly related to the programme theory and therefore are outlined and explained in the next section.

3.6.5 Development of the programme theory

Understanding and mapping the ‘Programme Theory’ is a crucial stage of the research design. As discussed, the programme theory sets out a hypothesis or hypotheses which the evaluation seeks out to test. From which C-M-O configurations are mapped, and this becomes the framework, or blue-print, by which the design and analysis is anchored to (Ramesesproject 2021; Westhorp, 2014). Realist evaluation is theory-driven, therefore it is essential to fully develop a programme theory before applying a C-M-O configuration, to do so too soon will result in fragmented explanations (Pawson & Manzano, 2012).

In order to develop a programme theory, Westhorpe et al. (2011) recommend integrating realist principles into existing approaches, including using a realist Programme Logic to influence the design. Therefore, a process of Logic Modelling (United Way, 1996) was used to devise the programme theory. Appendix C shows the results from the staged process of devising a logical model, identifying the outcomes chain and dark logic (unintended outcomes), then the transition from logic model to programme theory model and theory of change reflected as hypotheses (Figure 12).

Overarching hypothesis:	<i>Participating in civic environmental activities leads to increased wellbeing</i>
Sub hypothesis:	- <i>Participating in civic environmental activities increases a connection to others leading to enhanced wellbeing</i> - <i>Participating in civic environmental activities increases physical activity leading to enhanced wellbeing</i> - <i>Participating in civic environmental activities facilitates nature connectedness/mindfulness leading to enhanced wellbeing</i> - <i>Participating in civic environmental activities provides learning opportunities leading to enhanced wellbeing</i> - <i>Participating in civic environmental activities facilitates a sense of citizenship leading to enhanced wellbeing</i>

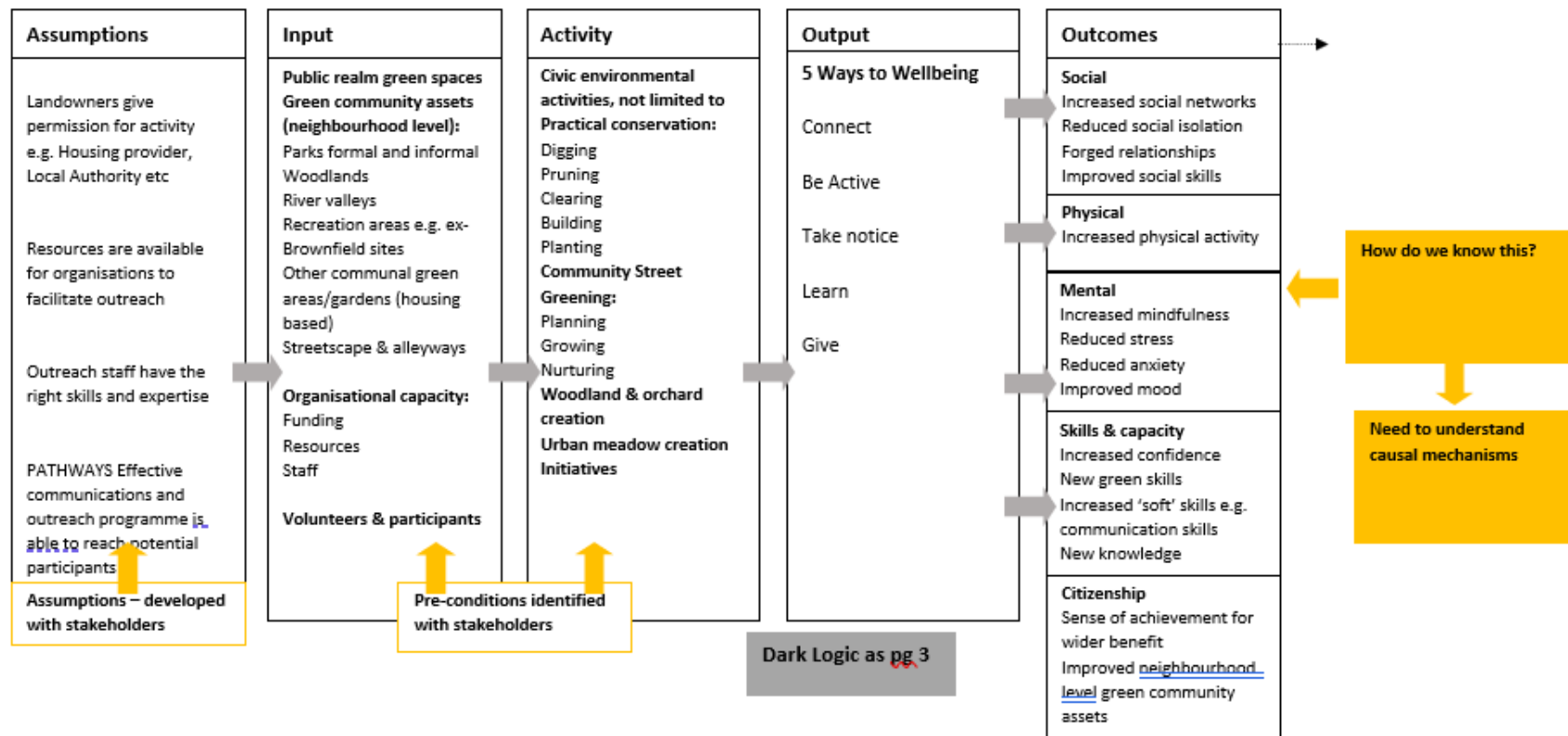


Figure 12. The Programme Theory developed for this study showing the theory of change reflected as hypotheses

Programme theory is best presented as a model (Ramesesproject, 2021) and this model is presented in Figure 12. An explanation of the programme theory provides transparency and clarity in the design process (Ramesesproject, 2021).

For this study, the programme theory is based on the following narrative. The programme theory is:

outreach initiatives that facilitate participation in civic environmental activities provide opportunities for increased wellbeing.

This forms the basis for the overarching hypothesis. The programme is an open system and is therefore influenced by factors such as funding, resources available for the outreach initiatives, staff capacity and skills, the requirements of the landowner may affect where and why activities may take place. Participants may participate via different pathways and this is likely to be linked to their own motivation for participation. The activities themselves are varied but have a common purpose, which is to improve the natural environment, and engage people in the natural environment at a neighbourhood level. The Five Ways to Wellbeing (Aked et al., 2008) provides an opportunity to apply a common recognised framework to capture the wellbeing impacts. What is unknown is for whom the programme theory might work, how and why. The causal mechanisms are not yet understood as to how participation may lead to increased wellbeing and whether increased wellbeing may occur beyond the explanation provided by the Five Ways to Wellbeing (Aked et al., 2008) framework. Once the programme theory model has been developed, a hypothesis or set of hypotheses which is based on the purpose of the evaluation and reflect realist enquiry should be applied to the programme theory (Ramesesproject 2021; Westthorp et al., 2011). This process was undertaken, and Figure 12 shows the outcome of this exercise, which is a programme theory, derived from a process of logic modelling, with a main hypothesis and subset hypotheses, as seen in Table 3-2.

Table 3-2. Hypotheses within the Programme Theory

Overarching hypothesis	Participating in civic environmental activities leads to increased wellbeing
Sub hypotheses	- Participating in civic environmental activities increases a connection to others leading to enhanced wellbeing - Participating in civic environmental activities increases physical activity leading to enhanced wellbeing - Participating in civic environmental activities facilitates nature connectedness/mindfulness leading to enhanced wellbeing - Participating in civic environmental activities provides learning opportunities leading to enhanced wellbeing - Participating in civic environmental activities facilitates a sense of citizenship leading to enhanced wellbeing

3.6.6 Applying the C-M-O configuration to the Programme Theory

The next step involved the application of the C-M-O configuration to the programme theory. During this process the ‘Assumptions’, ‘Input’ and ‘Activity’ from the programme theory become the context (C) (Westhorpe et al. 2011). The ‘Output’ from the programme theory, in this instance the actions to wellbeing as described by the Five Ways to Wellbeing, (Aked et al., 2008) becomes the mechanism (M), the outcome (O) is wellbeing. See Figure 4. The C-M-O configuration is now embedded within the programme theory and as such the hypotheses that test the programme theory should have the C-M-O configuration clearly embedded within each hypothesis (Westhorpe, 2014; Pawson & Tilley, 1997). This is now shown in Table 3-3 and Table 3-4. Revisiting the formula to understand the mechanism: Resources + Reasoning = Mechanism (Pawson & Tilley, 1997), in this instance the resources are provided by the organisations City of Trees and the RHS Bridgewater through their outreach work, and the reasoning is owned by the participants and these combined together will result in the mechanism. Figure 13 provides a concise summary derived from the programme theory of what the C-M-O enquiry, stratified in more detail in the hypotheses as seen in Table 3-3. The hypothesis and sub hypotheses use the Five Ways to Wellbeing (Aked et al., 2008). The following section addresses appropriate methods and instruments for data collection.

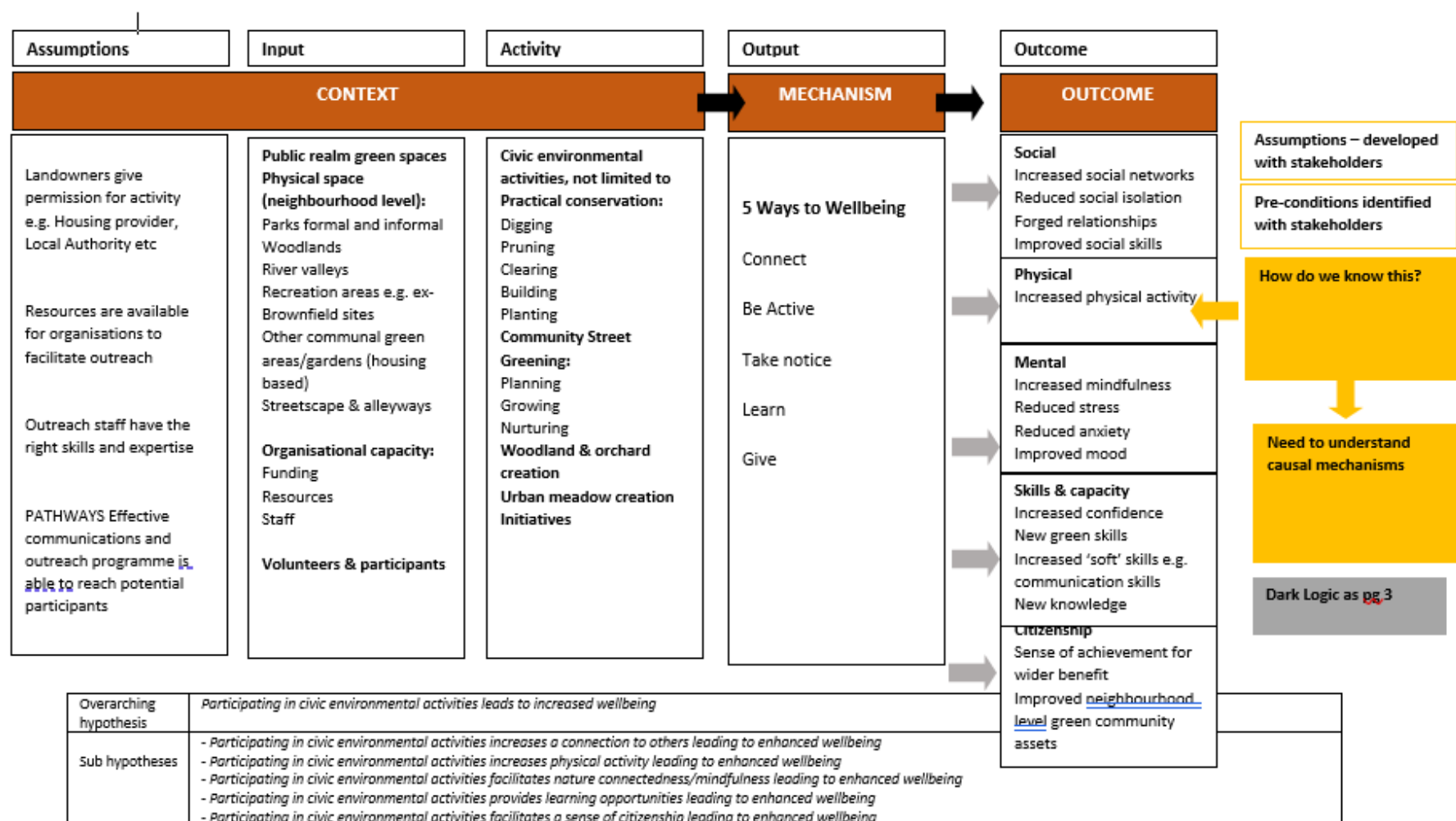
Table 3-3. Overarching hypothesis and sub-hypotheses

Overarching hypothesis	Participating in civic environmental activities (C-M) leads to increased wellbeing (O)
Sub hypotheses	- Participating in civic environmental activities (C) increases a connection to others (M) leading to enhanced wellbeing (O) - Participating in civic environmental activities (C) increases physical activity (M) leading to enhanced wellbeing (O) - Participating in civic environmental activities (C) facilitates nature connectedness/mindfulness (M) leading to enhanced wellbeing (O) - Participating in civic environmental activities (C) provides learning opportunities (M) leading to enhanced wellbeing (O) - Participating in civic environmental activities (C) facilitates a sense of citizenship (M) leading to enhanced wellbeing (O)

Table 3-4. Hypotheses within the Programme Theory as C-M-O configuration

Overarching hypothesis: Participating in civic environmental activities (C-M) leads to increased wellbeing (O)	
CONTEXT <i>In what context?</i>	Natural environments in an urban setting Pathways into participation based on motivation and opportunity Organisational capacity, skills, expertise, funding, resources, staff
MECHANISM <i>How and why?</i>	Sub-hypothesis: Connecting to others? Being physically active? Closer connection to nature? Learning something? Giving back? (Five Ways to Wellbeing, (NEF, 2008))
DESIRED OUTCOME <i>What has been the change?</i>	Increased wellbeing Type of wellbeing
UNINTENDED OUTCOMES <i>What might go wrong and why?</i>	Opposite of intended outcome – decrease in wellbeing Considerations to mitigate unintended outcomes

Figure 13. Realist Evaluation – applying the C-M-O configuration to the Programme Theory



3.7 Methods

A realist evaluation uses largely primary data that is collected from the field using interviews, surveys, focus groups with both participants and practitioner stakeholders. Data is collected in order to test, refute or refine a programme theory to explain in what circumstances and for who a programme may work and why (Westthorp, 2014).

This study used a mixed methods approach to gather data. In a realist evaluation, a wide range of data and range of methods are used to ensure robustness of the theory ‘testing’ process (Ramesesproject, 2021). Data should be gathered for all components, C-M-O and the relationship between components. Data should capture context-mechanism interactions and outcomes, both intended and unintended (Ramesesproject, 2021; Westthorp, 2014). Realist evaluation is best suited to multi (mixed) method data that is preferably triangulated using different sources or methods of collection (Ramesesproject, 2021; Westthorp, 2014).

According to Creswell (2009) a mixed methods approach has gained popularity, particularly by social health sciences, as the use of solely qualitative or quantitative methods address complexity inadequately. A mixed methods approach uses the strengths of each method to provide greater insight into programmes, combining empirical data for structure and narrative detail for depth (Creswell, 2009). From a philosophical perspective, qualitative research is constructivist and quantitative research is positivist (empiricist), bipolar opposites from an ontological scale, but (critical) realism offers a platform by which they can meet, co-operate and draw further insight (Maxwell & Mittapali, 2010). The discussion paper Realism as a Stance for Mixed Methods Research (Maxwell & Mittapali, 2010) argues that realist perspectives play an important contribution to mixed methods research, because of its capacity for integration of opposing paradigms, and the associated mixed methods strategies that provide deeper insight into a phenomenon (Maxwell & Mittalapi, 2010). Wong (2018) and Emmel et al., (2018) also support that realist approach aligns with the mixed method approach. Figure 15 shows a summary of the research process and design.

3.7.1 Triangulation strategy

Triangulation in the context of mixed methods is seen as the integration of data, referring to the process of using multiple methods of data sources and perspectives. This gathering of perspectives is important in realist evaluation, where we are seeking to get closer to a programme theory and its many facets and stakeholders (Pawson & Tilley 1997). Mixed methods involves methodically integrating both quantitative and qualitative data in order to maximise the strengths and minimise the weaknesses of each method (Creswell and Clark, 2017). Triangulation can be used to validate, strengthen and enrich results by providing multiple perspectives on the same phenomenon whilst also highlighting any complexities, discrepancies, identify any bias, thus increasing validity (Bryman, 2006, Creswell & Clark, 2017).

This study used a concurrent triangulation strategy (see Figure 14) to compare and define relationships between quantitative and qualitative data as part of a mixed methods strategy of enquiry. An iterative approach was undertaken to data collection. Initially a first round of semi-structured interviews was conducted which identified a set of initial themes. This informed the subsequent interviews. The Green Ways to Wellbeing questionnaire (QUAL QUAN) was used (see section 3.8.1) which incorporates the Five Ways to Wellbeing (Aked et al., 2008). The data from the questionnaire (QUAL QUAN) were triangulated with qualitative perspectives from the semi-structured interviews (QUAL). The questionnaires gave statistical results and insight through quantitative data. The semi-structured interviews brought deeper insight into people's experiences.

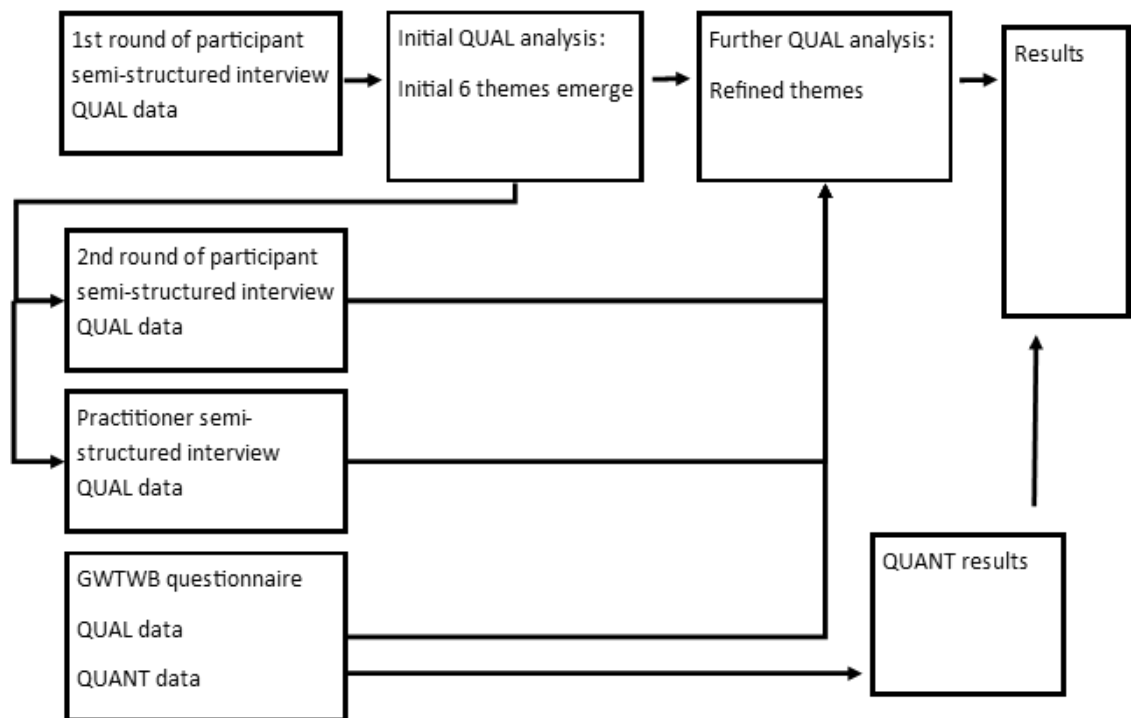


Figure 14. Triangulation strategy, building & merging the data

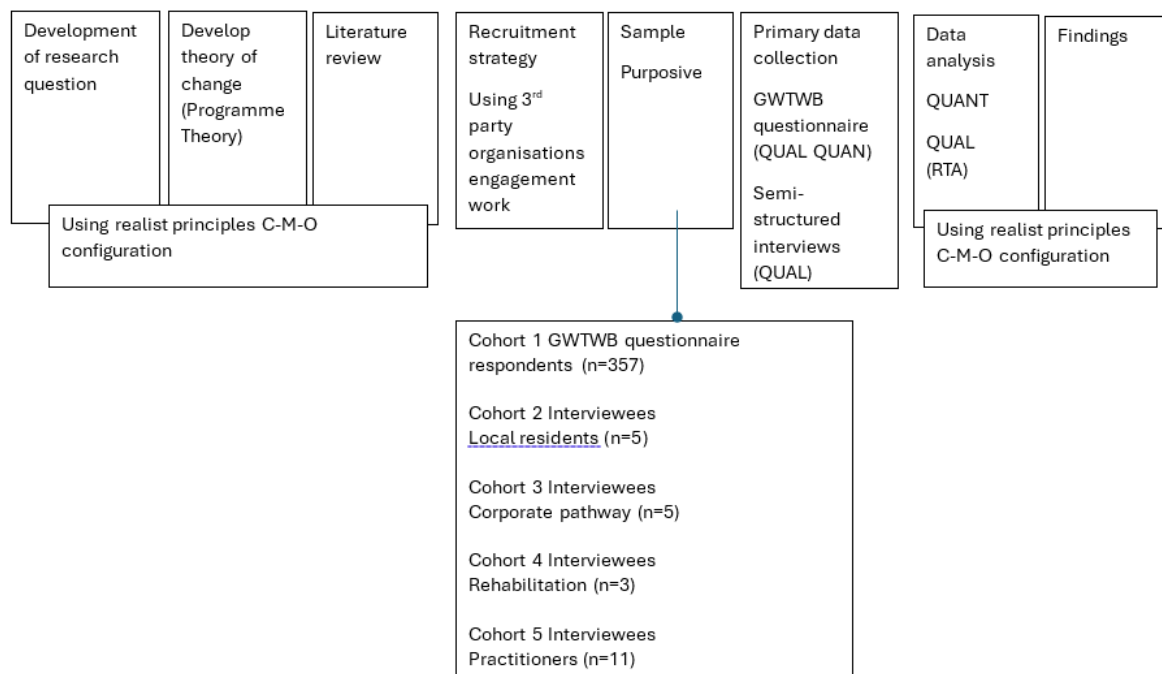


Figure 15. Research design and process

3.8 Methods of data collection

Data gathering in a realist review must capture the necessary data to test the programme theory. The data collection uses mixed methods that are aligned to test the hypotheses within the programme theory and capture intended and unintended outcomes.

3.8.1 Greenways to Wellbeing Questionnaire

The Greenways to Wellbeing (GWTWB) Questionnaire was specifically designed for this study and to be used in practice. It is a mixed methods tool, capturing both quantitative and qualitative data. The questionnaire design has used an adaptation of the Five Ways to Wellbeing (Aked et al., 2008) by presenting each of the ‘5 Ways’ into a question, rather than a described action. The first question relating to the PRE and POST mood score asks (PRE activity): *On a scale of 1-10, please tell us how you were feeling one hour ago*. This is an adaption of one of the Office for National Statistics (ONS) personal wellbeing measures, which asks ‘overall how happy did you feel yesterday?’ (ONS, 2024). This question is followed up POST activity with: *‘On a scale of 1-10, please tell us how you are feeling now’*. The questionnaire was purposefully graphically designed in a way with the hope that the participant filling in the questionnaire would find easy to read, understand and complete. The graphic design brief was to create something that looked like a ‘fun quiz’ rather than dry academic form in order to make the experience of completing the form appealing to maximise uptake (see Figure 16 and Figure 17). It was consciously designed to have a non-medicalised approach to data collection from a user-perspective, to overcome ethical considerations and barriers to data collection, which is discussed in great detail later in this thesis, in Chapter 6, Outcomes.

The questionnaire has the following sections:

Front section, asks:

- Demographic data: name (later anonymised), postcode, age, gender, nationality & ethnicity
- The pathway to the activities in that session, i.e. (local resident; therapeutic rehabilitation; vocational rehabilitation; corporate pathway)

Next, PART 1, to be completed BEFORE activities commence, asks:

On a scale of 1-10, please tell us how you were feeling one hour ago (QUANT).

Question 'A' is quantitative to obtain a pre-activity mood score, which will be compared with post activity mood score. Then:

A. Please take a moment to think about why you want to take part in activities today (open-ended question) (QUAL)

Question 'B' is qualitative open-ended and provides participants to express *why* and *what* their motivations are for undertaking the activities today.

B. Indicate on the star below what is important to you about taking part in activities today: to do physical activity; connect with other people; feel closer to nature; learn something new; put back into the community (each scale of 1-10) (QUANT)

Question 'C' is quantitative (scale 1-10) and seeks to gather a score on motivations, i.e. *what* participants are expecting, or *what* their motivations might be using the Five Ways to Wellbeing framework (Aked et al., 2008). This complete the 'PRE' questionnaire, pre-activity.

Post activity, PART 2, to be completed AFTER activities have taken place, asks:

A. On a scale of 1-10, please tell us how you are feeling now (QUANT).

Question 'A' is quantitative to obtain a post-activity mood score, which is compared with pre-activity mood score. Then:

B. Please take a moment to think about what you got out of taking part in activities today. What did the activities mean to you? (open-ended question) (QUAL)

Question 'B' is qualitative open-ended and provides participants to express *how* the activities might have made a difference to them, what they got out of undertaking the activities.

C. Indicate on the star below what you got out of today and how important/relevant the points are to you: the physical activity; connecting with other people; feeling closer to nature; learning something new; putting back into the community (each scale of 1-10) (QUANT)

Question ‘C’ is quantitative (scale 1-10) and seeks to gather a score what made a difference to them and how they feel, using the Five Ways to Wellbeing framework (Aked et al., 2008).

The final section was an open-ended question for any other comments to give people an opportunity to express any feelings or thoughts beyond the questions given, in a qualitative way.

PART 1—please complete this section first, at the start of your session

A. On a scale of 1 to 10, please tell us how you were feeling **1 hour ago** (please circle):

1 = very low/anxious/bad mood 10 = very happy/relaxed

1 2 3 4 5 6 7 8 9 10

Please complete this section **BEFORE** the activity today

B. Please take a moment to think about why you want to take part in the activities today.

C. Indicate on the star below, what is most important about taking part in activities today?

I want to...

Please indicate on the star which circle best represents you, from 1-10:

1 Not important or relevant to you today

10 Extremely important or relevant to you today

do some physical activity

feel closer to nature and spend time in the natural world

learn something new/develop my skills

put something back into the community

feel connected to other people, do something sociable

Thank you for completing PART 1. Please complete PART 2 at the end of your session.

Figure 16. PART 1 PRE-activity GWTWB questionnaire

Please
complete this
section AFTER
the activity
today

PART 2

A. On a scale of 1 to 10, please tell us how you are feeling now (please circle)

1 = very low/anxious/bad mood
←————→
10 = very happy/relaxed

1
2
3
4
5
6
7
8
9
10

B. Please take a moment to think about what you got out of taking part in the activities today.
What did today's activities mean to you?

Thinking about how you feel **now**, please indicate on the star below, on a scale of 1-10, what you got out of the day, and how important/relevant the points below are to you.

I feel...

Please indicate on the
star which circle best
represents you, from 1-10:

1
↑
↓
10

① Not important or
relevant to you today

⑩ Extremely important or
relevant to you today

as though I have
increased my
physical activity
levels

10

closer to nature
and have spent time
in the natural world

10

a greater connection
to other people –
I have done something
sociable

10

I have learned
something new
or develop my skills

10

put something
back into the
community

10

Tell us more –
please give any
other comments
here.

Figure 17. PART 2 POST-activity GWTWB questionnaire

The GWTWB questionnaire has been designed using a spidergram format. Spidergrams (also known as radar charts, star plots, web charts) use radial graphing to gather information on, or compare, multiple variables that can be assessed across pre and post activity time period. Spidergrams are user-friendly and a format frequently used by

98

charitable organisations and form the basis of widely used Outcomes Stars (OutcomesStar, 2021). Saary (2008) advocates the use of radial graphing for health researchers wishing to capture multiple variables (in this case the Five Ways to Wellbeing outcomes). Spidergrams, i.e. radial graphing is also relevant for showing the degree of multiple similarities and differences between a number of groups.

The GWTWB quantitative data was subject to a mix of descriptive statistical analysis and inferential statistical analysis and the qualitative data was subject to thematic analysis (more detail found in section 3.9 below).

3.8.2 Semi-structured interviews

Qualitative data was gathered from semi-structured interviews. The semi-structured questions have been designed to test the hypotheses relating to the Programme Theory in line with a sound realist evaluation approach (Ramesesproject 2021; Westhorpe, 2014), see Appendix D for semi-structured interview questions. Reflexive Thematic Analysis was used as the method for analysing qualitative data and this is covered in much detail later into the chapter. Data was triangulated to determine convergence, differences or a combination of the two between the questionnaire dataset (QUANT-QUAL) and semi-structured interview data set (QUAL) in line with a realist approach (Ramesesproject 2021; Westhorp, 2014).

3.8.3 Focus Groups

Focus groups have been used in research since the 1940's introduced by R.K. Merton who has since documented and expressed concerns around the misuse of the use of this particular method of data collection (Merton, 1987). Critics heed warnings of producing sloppy or hurried accounts from focus groups to service policymaking and call for careful and considered design to meet research aims and produce reliable results (Silverman, 2004). However today, the focus group is used in a variety of disciplines, types of enquiry and formats in research (Massey, 2011; Bokhorst-Heng and Marshall, 2019) and is now one of the most frequently used methods in evaluation (Spaulding, 2008) and therefore a valuable tool for evaluations.

There is no account of a 'realist' focus group nor 'non-realist' focus group but in a realist evaluation a focus group is used to challenge or test a programme theory

(Manzano, 2022). Focus groups can be used in realist evaluation, and Pawson and Tilley (2004) describe the process as a ‘learner-teacher’ cycle whereby the researcher evaluator ‘teaches’ or relays the programme theory to the focus group, who then reciprocate by ‘teaching’ the evaluator, providing deeper insight into elements of the programme theory.

The use of focus groups was an appropriate approach for this study to stimulate and elicit perspectives from a group of participants who had shared experiences relevant to the study (Manzano, 2025). At planning stage, the study design included one focus group – that of practitioners to provide their experience and perspectives relating to the contextual factors as part of the programme theory as well as any observations they may have in relation to the Five Ways to Wellbeing (Aked et al., 2008) framework. A second focus group was later brought into the study design for those seeking therapeutic rehabilitation due to poor mental ill health through life disadvantage which may have included problems with addiction, therefore classed a vulnerable group (sampling and recruitment explained further in the following section 3.8.4).

Ideally, all of the participants would have been engaged through the semi-structured interview process. However, caution was taken to engaging those specifically identified as being vulnerable. NHS England’s guidance on the use of focus groups states that this method of recruitment and data gathering can be a sound way of allowing those who are marginalised or vulnerable to participate in evaluations by hearing and sharing perspectives and voices from others with shared experience (NHS England, 2025).

Focus groups provide a process to generate a rich source of qualitative data from participant’s own words partaking in the context of a mutually understood and shared experience, enabling deeper insights to be gleaned (NHS England 2025, Manzano, 2022). Guidance on focus groups (such as NHS England, 2025) advocate that for recruiting participants, particularly those who are vulnerable – it is useful to work with stakeholder organisations who are already working with the vulnerable groups as trusted intermediaries. Therefore, this was the approach taken in the recruitment of those seeking therapeutic rehabilitation. Participants were invited to take part via a stakeholder organisation, who provided a range of support for this cohort group. It was agreed beforehand that the intermediary (member of supporting staff from the

stakeholder organisation) would ask the potential participants if they would prefer to be individually interviewed or take part in a group setting. The response back from the group was the preferred option was to take part in a group. Although the consultation for preferred options did produce a 'preferred option', this outcome should not be treated as fully robust per se, as this exposes one of the weaknesses to the focus group approach, that of assuming a consensus (in this example of decision-making) will always be reached through joint discussion without the influence of group dynamics (Sim and Waterfield, 2019). Furthermore, confidentiality and anonymity can be compromised forming a barrier to open discussion and expressing feelings (Sim and Waterfield, 2019). This weakness applies to the intra-focus group dynamic as well as the intermediary of 'gatekeeper' involvement. A further dynamic in play is the role of the moderator, i.e. the researcher conducting the focus group in generating data and the impact on the group in doing so (Morgan, 1996). However, realist evaluators do not hide their own knowledge in a focus group setting, they are 'deliberate', bringing their knowledge to the table in the context of the discussion for the purpose of encouraging and facilitating others to share deeper insight without the need for explanation of basic aspects of the topic (Manzano, 2023).

To summarise, two focus groups emerged through the design and recruitment process. The first focus group was part of the original study design, that of practitioners set out to test relevant aspects of the programme theory, particularly in relations to contextual factors, the tools they used to measure outcomes and any observations on wellbeing (or ill-wellbeing) that may (or may not relate to the Five Ways to Wellbeing framework (Aked et al., 2008) See Appendix M Focus Group Schedule. The second focus group consisted of participants identified in this study as vulnerable (those seeking therapeutic rehabilitation – see section 3.8.4). This focus group came about as a reported preferred option by participants who engaged via a third-party stakeholder organisation that supported the group. The semi-structured points of discussion were the same as that of the semi-structured interviews, see Appendix M for details. The strengths and weaknesses of the use of focus groups are linked to the process of focused group interactions. On the one hand focus groups have heuristic value (Morgan, 1996; Massey 2010) able to elicit lively debate and deep discussion intended

to challenge, refine or discard the programme theory (Manzano, 2023). On the other hand, social dynamics, along with a compromise of consent and anonymity can create barrier to open discussion, or worst case bring about unsound ethical standards. In line with best practice guidance (NHS England, 2025) the approach taken to using focus groups for this study was to ensure due care and planning of the sessions, through a carefully planned and transparent approach to organising and conducting the focus groups. Some of the ethical challenges relating to focus groups are addressed through the consent process (Sim and Waterfield, 2019), the ethics protocol agreed by the Ethics Committee at the University was fully adhered to.

3.8.4 Sampling and recruitment

In a realist evaluation, data are required to substantiate C-M-O at play, thus the sampling strategy should seek to recruit key informants, i.e., purposive sampling that will inform the programme theory and this would include participants as well as stakeholders (e.g. practitioners) (Ramesesproject 2021; Westhorp et al., 2011).

According to Creswell (2009) purposeful sampling is used when participants and stakeholders have experienced the phenomenon in question, and this applies to this study. The recruitment strategy was based on organisational sampling from Greater Manchester based environmental organisations. A third-party recruitment strategy was used to reduce researcher and provider bias and participant coercion. Questionnaires (QUAL QUAN) were distributed by organisational staff and returned. All semi structured interviews with participants were undertaken directly. As discussed above, the focus groups were recruited via the Greater Manchester Nature for Health Network (practitioners) and third-party stakeholder organisation (participants seeking rehabilitation).

The data collection and analysis is an iterative process in a realist enquiry (Pawson & Tilley, 1997). The purpose of the enquiry is to drill down to the causal mechanisms at play, and the nature of the open system means that new leads should be followed to generate the best understanding possible (at that moment in time), and within what is practically reasonable. Therefore, the data collection methods and cohort were refined

during the timeframe of the study, and where applicable, additional ethical approval would have been obtained (Ramesesproject, 2021; Westthorp, 2014), but this was not necessary.

3.8.5 Sample sizes and data collection

The sampling is categorised into 4 cohorts, with various sizes (summarised in Table 3-5 below):

Cohort 1 consists of participants who have engaged with one of the 3rd party organisations and have taken part in activities. They were invited to complete a GWTWB questionnaire just before (pre) and just after (post) the session. Their pathway to activities is determined by that stipulated by the participants on the questionnaire.

Cohort 2 are participants who are local residents who have followed a pathway to one of the organisations because they want to improve their immediate or nearby neighbourhood. Cohort 2 were invited to take part in a semi-structured interview.

Cohort 3 are participants who have taken part in activities via a corporate group, i.e. through their employment, usually as part of a corporate social responsibility programme designed to undertake civic environmental activities in public realm greenspace to help improve that greenspace or neighbourhood. Cohort 3 were invited to take part in a semi-structured interview.

Cohort 4 are participants who follow a pathway to the organisations because of reasons relating to either vocational or therapeutic rehabilitation (often these two factors are linked). Cohort 4 were invited to take part in a semi-structured interview/focus group.

Cohort 5 are practitioner stakeholders from the environmental, mental health and public sector who have perspectives and insight through their direct involvement into the phenomenon. Cohort 5 were invited to take part in a semi-structured interview/focus group.

Table 3-5. Cohort and sample sizes

Cohort	Sample size	Data collection method
Cohort 1 – Participants completed GWTWB questionnaire. Participants taking part in activities. Their pathway to activities was determined by their response on questionnaire	n=357	GWTWB questionnaire (quant-qual) taken out in the field at events
Cohort 2 – Local residents Participants who (describe themselves) as living in GM or locally to the greenspaces where activities take place to improve the area	n=5 (n=3 members of Friends of.. Group)	Semi-structured interviews
Cohort 3 - Corporate participants, who have taken part in activities as part of a volunteering initiative at work	n=5	Semi-structured interviews
Cohort 4 – Participants seeking rehabilitation either therapeutic or vocational (or both)	n=3	Focus group
Cohort 5 – Experienced practitioners from the environmental, mental health, health and government sectors who are all stakeholders in nature-based activities and green social prescribing	n=11	Semi-structured interviews/focus group

3.8.6 Who took part

This section gives demographic details of Cohorts 1-5.

Cohort 1 – GWTWB questionnaire participants.

The following tables give an overview of GWTWB participant ages and self-described gender, ethnicity and nationality.

Table 3-6. GWTWB participant age range

Age	Frequency	%
18-24	54	15.1

25-29	68	19
30-34	52	14.6
35-39	40	11.2
40-44	30	8.4
45-49	38	10.6
50-54	26	7.3
55-59	21	5.9
60-64	11	3.1
65-69	4	1.1
70-74	6	1.7
80+	1	0.3
Sub total	351	98.3
Total	357	100

Table 3-7. GWTWB participant gender split

	N	%
Female	192	53.80%
Male	164	45.90%

Table 3-8. GWTWB participant nationality

Nationality	Frequency	%
British	315	88.2
Non-British	41	11.8
Sub total	356	99.7
Total	357	100

Table 3-9. GWTWB participant ethnicity

Ethnicity	Frequency	%
White	308	86.3
Asian	10	2.8
Chinese	7	2
Black African	3	0.8
Mixed	16	4.6
Other	6	1.7
Subtotal	350	98
Missing System	7	2
Total	357	100

Table 3-10. GWTWB participant personal pathway

Personal pathway	Frequency	%
Employment prospects	15	4.2
Improve health	4	1.1
Corporate group	178	49.9
Just to take part	160	44.8
Total	357	100

In summary, Cohort 1, the participants to the GWTWB questionnaire were as follows:

Age

There were of mixed age groups. The most common age range was 25-29yrs which was 19% of cohort (n=68).

Gender

Slightly more females (53.8%) than males (45.9%) participated.

Nationality

88.2% (n=315) of participants described themselves as British and 11.5% (n=42) as non-British or dual nationality.

Ethnicity

86.3% (n=308) described their ethnicity as 'white' which was a mix of British and non-British nationalities and 12% (n=49) non-white ethnicity describing themselves as mixed ethnicity or of Asian, African, Afro-Caribbean, Chinese or Polish ethnicity.

Personal pathway to activity

The personal pathways to the activities were a mixed of 49.9% (n=178) corporate pathway, 44.8% (n=160) 'just to take part', 4.2% (n=15) seeking to improve employment prospects and only 1.1% (n=4) described themselves on a health pathway.

Cohort 2 Local Residents (semi structured interviews), n=5

Table 3-11. Demographic details of cohort 2, local residents,

Unique ID Number	Pseudonym	Personal pathway	Age	Gender	Nationality	Ethnicity
I001	Anne	Local resident	61	Female	British	White
I002	Jack	Local resident	57	Male	British	White
I003	Deborah	Local resident	55	Female	British	White
I004	Ruth	Local resident	61	Female	British	White

I005	Sarah	Local resident	36	Female	British	White

Cohort 3 Corporate Participants, n=5

Table 3-12. Demographic details of cohort3 3, corporate pathway

Unique ID Number	Pseudonym	Personal pathway	Age	Gender	Nationality	Ethnicity
I007	Laura	Corporate	42	Female	British	Mixed
I008	Kat	Corporate	33	Female	British	White
I009	Emily	Corporate	23	Female	British	White
I010	Sally	Corporate	37	Female	British	White
I012	Cathy	Corporate	27	Female	British	White

Cohort 4 seeking rehabilitation (health and employment), n=3

Table 3-13. Demographic details of cohort 4, rehabilitation pathway

Unique ID Number	Pseudonym	Personal pathway	Age	Gender	Nationality	Ethnicity
I015	Danny	Health	32	Male	British	White
I016	Carl	Health	54	Male	British	White
I017	Rob	Health	49	Male	British	White

Cohort 5 experienced practitioner stakeholders, n=11. Mental Health (MH) practitioner; Government (Gov) practitioner; Environmental (Env) practitioner

Table 3-14. Demographic details of cohort 5, practitioners

Unique ID Number	Pseudonym	Role	Age	Gender	Nationality	Ethnicity
I006	Lucy	MH Practitioner	57	Female	British	White
I011	Cathy	Gov Practitioner	51	Female	British	White
I013	Matt	Env Practitioner	44	Male	British	White
I014	Mia	MH Practitioner	42	Female	British	White
I018	Tom	Gov Practitioner	28	Male	British	White
I019	Luke	Gov Practitioner	36	Male	British	White
I020	Rachel	MH Practitioner	43	Female	British	White
I021	Abbie	MH Practitioner	41	Female	British	White
I022	Beth	Env Practitioner	28	Female	British	White
I023	Nina	Env Practitioner	31	Female	British	White
I024	Sienna	Env/Culture Practitioner	46	Female	British	Black African

3.8.7 Consent

All participants are given a Participant Information Sheet (Appendix E Participant Information Sheet). In relation to the GWTWB questionnaire, return of a completed questionnaire signifies consent which is clarified in the Participant Information Sheet. Participants were recruited through the third-party organisation projects, i.e. City of Trees, RHS Bridgewater (community outreach), Groundwork, TCV and Greater Manchester Nature for Health Network (practitioner network). A protocol for recruitment, consent and handling of data via 3rd parties was agreed in advance with 3rd parties once the protocol had been approved by the University Ethics Committee. For the interviews and focus groups, the recruitment and data collection was undertaken directly (not via any 3rd party) and appropriate consent was requested prior to interview data collection, as per Ethics Committee approval. Ethics is discussed in more detail into this chapter in section 3.12.

3.9 GWTWB questionnaire data analysis

This section outlines the approach to analysis of the GWTWB (QUAL/QUANT) questionnaire (3.8.1). All data (QUAL & QUANT) was manually transferred from hard-copy questionnaires and input into SPSS software for data management and analysis.

3.9.1 GWTWB Qualitative data analysis

Qualitative data from the following open-ended questions were entered into SPSS software. This involved a process of thematic analysis (see 3.10.1), coding extracts using the variable function. Once the dataset was complete this was transferred to NVivo for further management, creating parent themes from sub-themes (see Appendix F GWTWB Qualitative themes and sub-themes). The open-ended questions:

Part 1 PRE-activity

B. Please take a moment to think about why you want to take part in activities today (open-ended question) (QUAL)

Part 2 POST-activity

B. Please take a moment to think about what you got out of taking part in activities today. What did the activities mean to you? (open-ended question) (QUAL)

The dataset was then analysed looking for patterns across gender, pathway and age-groups.

3.9.2 QWTWB Quantitative data analysis

The quantitative data was analysed using IBM SPSS software undertaking a mixture of descriptive statistical analysis and inferential statistical analysis. The aims of the quantitative analysis were to undertake the following:

- Generate PRE and POST mean scores of each Five Ways to Wellbeing variable by gender and pathway.
- Carry out Spearman's rank correlation coefficient analysis to indicate any monotonic relationship between age range and the Five Ways to Wellbeing variables.
- Carry out Pearson's correlation coefficient analysis to assess the degree to which the dependent outcome variable POST mood score is linearly associated with Five Ways to Wellbeing independent variables
- Carry out General Linear Modelling (GLM) analysis to explore whether there are statistically significant predictors of the outcome variable, i.e. whether POST mood score, could be predicted from independent variables: 'Ways to Wellbeing', age and gender.

Throughout this section, when referring to the variables used in the statistical analysis, capitals are used for the words PRE and POST. Because the mood, and each of the 5 ways, are measured both before and after the activity there are a large number of variables with somewhat similar names. It is hoped that using the capital letters will help as a visual guide.

3.9.2.1 Rationale for choice of statistical tests

Parametric tests are statistical methods employed when the outcome variable is continuous and the distribution of data is normal or near normal, whereas non-parametric tests do not assume any distribution of data (Faizi and Alvi, 2023). The QWTWB questionnaire used a radar graph measuring ratings on a 10 point scale, and for the purpose of analysis this was treated as continuous variables and therefore

analysed using parametric tests. Parametric tests assume the data are normally distributed on a continuous scale. While a 10 point scale is not a continuous scale, parametric tests are very robust in relation to violations of this particular assumption, as well as assumptions of normality (Norman, 2010). Indeed, it is standard practice to assess effects and relationships between variables measured on scales such as these in in psychological and behavioural research (Norman, 2010).

Because parametric tests assume that the populations from which the samples are taken are normally distributed (Altman & Bland, 1995), risks to validity arise when samples are small, for example, where the distribution could be non-normal, but the test doesn't have the 'power' (due to small sample size) to detect a skewed distribution so could pass the normality and significance test. A large enough sample size (> 30 or 40) would not disrupt the normality assumption enough to cause problems (Pallant, 2007). Therefore, the moderate sample size for this study (n=299 completed PRE and POST activity mood scores) provided a large enough sample size that even a slight deviation from normality would still be statistically significant. However, any sub-groups within the overall sample size which were small would not be able to pass the normality assumption nor generate significant statistics (for example within the 'pathway' subgroups: 'health pathway' n=4 and 'employment prospects n=15). Although small and therefore could yield no statistical significance these example figures were kept in as part of the wider analysis as they add to the overall non-statistical narrative of participant pathways.

The statistical method of analysis chosen to compare the PRE and POST mood score was a 'paired t-test'. This particular parametric test was used as it provides a way compare one unique group at two points in time (Steinberg, 2008), that is, scores PRE activity and scores POST activity. A t-value is reported as part of the output for a paired-samples t-test. The results of the t-test provided paired differences, i.e. a measure of the difference between the means of two groups (in this case, the PRE activity and POST activity groups) relating to PRE and POST activity mood. When interpreting the results, the t-value is interpreted in conjunction with the p-value, which is a measure of statistical significance. A p-value less than 0.05 is the generally accepted threshold for a significant difference between the means of the two time

points, while a p-value greater than 0.05 indicates that there is not a significant difference between the means (Steinberg, 2008). A high t-value indicates a large difference between the means of the two groups, and a low t-value indicates a small difference between the means.

Using a similar logic, Pearson's correlation coefficient was used to assess the relationship between two continuous variables. General Linear Models (GLM) were used to simultaneously assess effects of variables such as gender, as well as relationships between continuous variables (such as between PRE and POST scores). Both Pearsons (r) and GLM (F) tests interpret a coefficient against a P value using the same threshold as the paired t-test, that is, $P=0.05$

Spearman's rank correlation coefficient (denoted as r_s) is a non-parametric test which was chosen because the age variable is ordinal. This test was interpreted in the same way as Pearson's (r).

3.9.2.2 Testing the hypotheses

The hypothesis is that the activity leads to enhanced wellbeing therefore the outcome of interest is POST mood score. As there are several different variables, a GLM approach has been chosen as this enables simultaneous testing of several variables at once. The sub hypotheses relate to whether any or all of the Five Ways to Wellbeing (as measured POST activity) are related to POST mood score. Each of the 5 Ways is addressed in turn, taking into account of, i.e. 'controlling for' participant's mood PRE activity, PRE 5-way, age and gender. Five separate GLM analyses are undertaken for each of the Five Ways to Wellbeing, thus the following 'null hypotheses' were tested:

1. POST Physical activity is not related to POST mood
2. POST Connected is not related to POST mood
3. POST Take notice is not related to POST mood
4. POST Learn is not related to POST mood
5. POST Give back is not related to POST mood

The above were tested against a significance level of $\alpha = 0.05$. A significance level of 0.05 indicates a 5% risk of concluding that an association exists when there is no actual association. If the significance level is less than 0.05, the null hypothesis will be

rejected If this is the case, the alternative hypothesis will be accepted, namely that the particular individual 5 Way is significantly related to POST mood.

3.9.2.3 *Handling of quantitative data*

Missing data from using questionnaires is common to point of being expected and therefore a decision on how to handle missing data needs to be made and be open and transparent (Kang, 2013). Missing data statistics can be found in Appendix H. It is not known why data is missing but given the PRE and POST nature of the questionnaire it is reasonable to expect that not everyone will remember or be inclined to complete the post questionnaire. However, there was not a consistent drop relating to all POST activity questions: Table 3-15 shows the variables POST mood score, POST Learn & develop skills and POST Take notice of nature had more than 10% missing data. An enquiry was carried out to see whether this may be linked to observed variables. For example, whether those in a better mood PRE activity were more likely to complete the mood score POST activity. An independent t-test compared the PRE mood between completers and non-completers of the POST mood score on the questionnaire, and the results are shown in Table 3-16.

Table 3-15. Missing variable analysis where minimum percentage of missing values for variable to be included: 10.0%

	Missing		Valid N	Mean	Std. Deviation
	N	Percent			
Participant mood POST activity	56	15.7%	301	8.95	.978
POST 1-10 scale Learn & develop skills	37	10.4%	320	8.03	2.045
POST 1-10 scale Take notice of Nature	36	10.1%	321	9.15	1.216

Table 3-16. Results from independent paired t-test comparing mean PRE activity mood scores between ‘completers’ and ‘non-completers’ of POST activity mood score

Participant's mood 1 hour ago Completer/Non completer	N	Mean	Std. Deviation
Completer	299	6.91	1.833
Non completer	48	7.15	1.81
t-test	t=-8.18; df=345; P<0.414		

As Table 3-16 shows, the mean mood score for those non completers of the questionnaire PRE activity was higher (M=7.15) than the mean for those who did complete the POST mood score (M=6.91) but not significantly so, there was no significant difference in mood score between the two ($t=-8.18$; $df=345$; $P<0.414$). This shows that missing data was not linked to this observed variable. The assumption is that these data are Missing at Random (MAR) and these were omitted during the data analysis.

In SPSS, variables were created based on questions from the questionnaire and therefore became codes for analysis. During the analysis phase it became apparent that some of the sizes of categories relating to variables such as age range, nationality and ethnicity were too small for meaningful analysis. Therefore, age-range (ranks), were collapsed into smaller categories to enable efficient analysis of the data.

Appendix I outlines the re-categorisation of datasets.

3.10 Qualitative interviews data analysis and coding

The step-by-step process of data coding and analysis of the qualitative data is covered in detail in a later section 3.11.2. Before the detail of this is presented, the approach taken will now be explained.

The two most common approaches to reasoning during data analysis are *deduction*, where a theory, concept or predetermined theme influences the search for data (and coding) to substantiate the concept in question, and *induction* where data are analysed that generate a concept or theme (Braun & Clarke, 2013). Braun and Clarke (2021) argue that ‘pure’ induction is impossible as human researchers or not *atheoretical*, it is

impossible to step outside of our own personal perspectives, experiences, thoughts, ideas etc., therefore inductive seeks to extract meaning grounded in the data. Deduction and induction are often presented as a dichotomy, and traditionally researchers were urged to choose one that reflected their data analysis method, rooted in a particular methodology and philosophical viewpoint (Braun & Clarke, 2013; Braun & Clarke, 2021).

However, there is a third approach to reasoning in undertaking data analysis. In line with realist principles, a *retroductive* approach formed the strategy for data analysis and coding. Retroduction is a form of reasoning used in realist research that seeks to identify causal forces that lie hidden behind patterns or changes in patterns (RAMESES II Project, 2021). A retroductive approach aims to understand causal powers, i.e., what lies beneath patterns by postulating what it is that is causing the changes in those patterns, i.e., the mechanism for change (Lewis-Beck et al., 2004; Sayer, 2000)

Retroduction uses both deductive and inductive reasoning (a continuum moving between the two), combined with the researcher's own experience, expertise and informed insight to create and test theories. The rationale behind this stems from the realist notion that causation cannot be understood through using observable evidence alone. Maxwell (2012) explains the realist viewpoint that individual's own ideas, concepts, emotions are as equally real to physical objects and processes. Patterns of meaning will test the theory and identify intended or unintended outcomes.

Retroductive logic inform data analysis to understand the causal powers of the programme, in the context in which it is applied, and asks: *how does the programme (civic environmentalism) produce outcomes (for participants) and in what conditions?*.

Therefore, a retroductive approach facilitates the theorization of the *Context-Mechanism- Outcome Configuration (CMOC)* that then becomes the evidence that can be applied to the programme theory. The strategy for data analysis combines deductive reasoning to test the initial programme theory and inductive reasoning to produce (if applicable) new theory. New theory created from new observations is then applied as a new concept to the C-M-O configuration embedded within the programme theory, thus creating a new narrative within the programme theory. Inconsistencies with the programme theory or new findings can be used to revise the theory and a refinement

process may be necessary, testing the revised theory through moving between deductive and inductive reasoning with data.

A method, or tool, is required to carry out the qualitative analysis of the data. Realist evaluations are not linked to any one particular method, and a Thematic Analysis approach was adopted for this study. The following section explains the rationale for this decision.

3.10.1 Thematic Analysis (TA)

This section will seek to expand this basic descriptor and explore and explain, the rich detail beneath the umbrella and the opportunity that TA offers for health and wellbeing studies, realist evaluations and this research in particular. The discussion will introduce the more recent developments of TA as not one singular method, but a collection of methods each having characteristics aligning to varying philosophical paradigms. An overview of the different methods of TA is discussed, outlining the challenges and strengths to each approach, with an aim to justify the use of TA, and which TA method has been used for this research.

3.10.2 What is Thematic Analysis?

Thematic Analysis (TA) is a method that provides a systematic approach to data analysis. At its most simplistic description, TA is an umbrella term to describe a process, a methodical approach to identifying, analysing and reporting patterns across a dataset (Braun & Clarke, 2013; Braun & Clarke, 2014a; Nowell et al., 2017).

TA first appeared as a method in 1970s. The publication of Braun and Clarke's 2006 publication *Using thematic analysis in Psychology* excelled the use of TA within research, particularly within the field of health and social sciences (Braun and Clarke, 2021). Despite the widespread uptake of TA within the sphere of qualitative research, there are still musings within the academic community, questioning its validity as a method, citing lack of sophistication or interpretive insight and even making claims that it is atheoretical (Braun & Clarke 2020). These perceptions are perhaps symptomatic of those that find discomfort in its flexibility, nimbleness and unashamed variability, away from being cast to one particular epistemological approach from the outset. Braun & Clarke argue strongly that this is down to a lack of understanding about the potential of

TA, and this has led to TA being misused, misinterpreted and misquoted (Braun & Clarke, 2021).

TA offers an approach that is useful for applied research, where the research has implications for policy and practice (Braun & Clarke, 2014). TA can provide a method that offers robustness and sophistication to qualitative analysis that can also be accessible to practitioners, policy makers, i.e. those outside of the academic community (Braun & Clarke, 2014). Braun and Clarke (2014) add a cautionary note, that TA must be used correctly and in a robust and transparent way, to maximise both its validity, reputation and potential. The process as outlined later in this chapter, aims to provide enough detail of the process undertaken to evidence an transparent and robust approach has been taken for this study.

3.10.3 Quality standards and TA

In their recent paper, focusing on quality practice in TA Braun and Clarke (2020) articulate the difficulty in developing a universal quality standard for TA, because of the various iterations of TA that reflect different (often opposing) paradigms, philosophical foundations and respective procedures and techniques. The pluralistic nature of TA is not wholly recognised, and a default to a post-positivist perspective of coding reliability measures as the marker for quality standards within TA is common by authors and reviewers alike. The paper calls for a broadening of the understanding of TA, particularly the *reflexive* TA approach that in turn will drive the promotion of and raise the bar for higher standards of TA research. Braun and Clarke have produced a six-phase process of undertaking TA (2021) outlining a method for engaging with data, coding and theme development, openly discussing the need to find a balance between offering guidance to users of TA (to ensure quality standards and a methodical approach) and the potential for guidance to be misinterpreted and being overly prescriptive, hindering the immersive powers of more traditional analytical methods, such as grounded theory, and IPA. TA is not one approach, and this misconception has been introduced. TA is an umbrella term that embraces a number of approaches, that have a shared aim, that being to identify and to make sense of patterns across a dataset. The approaches to this differ significantly, both in theoretical assumptions and process. Braun and Clarke (2020) describe how the different approaches, or versions,

fall into three camps under the banner of TA: *Coding Reliability TA*; *Codebook TA*; *Reflexive TA*. Appendix G provides an appraisal and rationale, outlining the decision-making process, for why Reflexive TA was chosen as the analytical tool for this study.

3.10.4 Summary of rationale for Reflective Thematic Analysis

Reflective Thematic Analysis (RTA) was chosen as the analytical tool for this study as it provides a robust, structured method of data analysis that encompasses the critical realist ontological and epistemological assumptions and pragmatist paradigm, and embraces the subjective nature, the issue of reflexivity of the practitioner researcher. This is covered in detail in Appendix G, ‘Which thematic analysis?’.

In line with a realist approach, the strategy for data analysis used qualitative data analysis subject to a mix of descriptive and inferential statistical analysis coupled with qualitative retroductive reasoning during the process of data analysis and coding. Combining the quantitative data with qualitative deductive and inductive reasoning to understand the context and causal mechanisms at play. Reflexive TA was used to identify patterns in data around centralised concepts, facilitating a ‘Big Q’ approach to qualitative interpretation and interrogation to discover rich insights held within the data. The appraisal of TA and RTA is described in detail in Appendix G ‘Which Thematic Analysis’ demonstrates this approach is a good fit, an appropriate method of data analysis, to both derive rich, thick descriptions of people’s experiences, insights and perspectives. This will contribute towards an understanding of causal powers at play, whilst acknowledging and embracing the researcher’s own insights and experience, in line with the realist retroductive approach. The research aims to respond to Braun and Clarke’s (2021) call to action: to use RTA creatively, coupled with reasoned rationale, which hopefully has been fully explained within the discussion thus far.

3.11 Step by step process of RTA qualitative data analysis

This section outlines in detail the process undertaken to the data analysis. It aims to provide an account of the methodical steps taken, using images and screenshots to provide an audit trail to give confidence in the trustworthiness of the work undertaken by, as recommended by Nowell et al. (2017).

The process undertaken follows the six phase process for data engagement using Reflexive TA as devised by Braun & Clarke (201), their most recent version being: 1) data familiarisation and writing familiarisation notes; 2) systematic data coding; 3) generating initial themes from coded and collated data; 4) developing and reviewing themes; 5) refining, defining and naming themes; 6) writing the report (Braun & Clarke, 2021). It is important to note that this process is not linear, and although the six phases as outlined below have been followed in a linear fashion, over the course of the study it was necessary to move between the six stages to synthesize further data collection and refine the outcomes of the data analysis.

3.11.1 Phase 1: Data familiarisation & notes

3.11.1.1 Initial meeting – getting to know the data

Data familiarisation can begin instinctively at the point of data collection, during the period of interaction between researcher and participant, and it is good practice to make notes during the interview that can be brought into the process of data analysis Tuckett (2005). During the interviews and focus groups, notes were made to capture ideas and key points plus highlight observations at the time of the interview.

3.11.1.2 Transcription

Following on from the interview, there was an intense period of data familiarisation during the transcription process. The data were transcribed, firstly by listening to the audio recording, or on-line video recording (e.g. Zoom), or both, rewinding, and relistening and typing the words verbatim (using MS Word). This produced a first version of the transcript that had some ‘blanks’ where the audio was unclear, spelling mistakes and typos, and at this point, included people’s names mentioned by the participant. This was followed by additional (one or usually more) re-plays of the audio, and or, video recording, to ‘clean’ the original transcript, listening and typing, going back over the text to correct spelling and mistakes, and adjusting audio levels to decipher previous ‘blanks’. During this process some brief handwritten notes and annotations were made to flag initial thoughts and reflections of the interviews. This raw transcript document was stored on a secure server, protected by a passcode was given a filename of the participant, e.g. ‘Sally Interview’ (‘Sally’ false name for this report).

The raw transcript was then transferred to a second Word document, whereby the raw text was separated out within the grid and arranged appropriately in rows indicating who was speaking. In this version of the transcript, the participant was made anonymous and given an identification code. Researchers should be observant and honest about their own perspectives, thoughts, and experience in engaging with the data and capture these as notes (Lincoln & Guba, 1985; Nowell et al, 2017). Therefore, in this case, the audio was repeatedly played and a column was apportioned within the grid to capture any notes or observations made, and these were a mix of reflective thoughts about the interaction with the participant, reflexivity and also any poignant moments in the interview that would describe or emphasize the points being made, or how points were expressed by the participant, e.g. 'her voice becomes tight here, this appears to be really important to her'. At this stage all names referenced by the participant were removed, so that no-one could be identified within the transcript. The file was saved on a secure server protected by the passcode and given a filename of the anonymised through pseudonym, e.g. 'Anne Interview'.

A total of 24 transcripts were transcribed and analysed, and all versions are filed in an organised archive on a password protected secure server.

3.11.2 Phase 2: Systematic data coding

Once the data familiarisation process has taken place, the next stage involves the initial generation of codes from the data.

The realist approach to data analysis should be employed as a way of interrogating the programme theory with the data, and vice versa, and using the programme theory to understand patterns in data, to enable the researcher to gain insight into what works for whom and why and in what circumstances. The process is iterative and takes a retroductive strategy to the data analysis, i.e., uses both an inductive and deductive approach to data analysis. This is a process of theorization, and data is repeatedly revisited moving from unstructured data to the development of concepts and ideas from the data, and vice versa. In RTA, researchers move systematically throughout the entire data set, and the number of codes generated at this very initial stage should not be limited but should reflect the usefulness to the researcher.

Initial stage of generating ideas and concepts for codes

King (2004) recommends creating an initial template, a framework, that forces the researcher to justify the inclusion of codes, and each code having a clear definition of how it should be used. Attride-Stirling (2001) similarly advocate the need for clear boundaries defined in the use of a code to avoid the use being interchangeable or redundant. However, these recommendations are applicable and appropriate when conducting Coding Reliability TA or Codebook TA types of TA which are weighted, or lean to, a post-positivist perspective respectively. As discussed, the chosen approach for this research is Reflexive TA, which sits firmly in the qualitative arena, exploring the phenomenological aspects of experience and meaning. Therefore, these recommendations are not applicable for this study, as an approach they would hinder the process of extracting full meaning during interpretation by having restricted and set rules for how a code should be used, or what it defines.

As discussed, this study seeks to explore a programme theory, which uses the Five Ways to Wellbeing (Aked et al., 2008) as a framework to guide the initial theory being tested, to seek a realist narrative, the programme theory is not defined by, or restricted to, the Five Ways to Wellbeing (Aked et al., 2008) narrative. In their 2006 publication, Braun & Clarke stressed that during analysis accounts that are beyond the dominant narrative should not be excluded (Braun & Clarke, 2006), and this point is made even clearer in their more recent papers outlining RTA as a defined method where analysis should absolutely not be restricted by predefined codes or themes (Braun & Clarke, 2021).

A systematic approach was taken to the process of coding at the initial stage of generating ideas and concepts for codes based on the programme theory, and beyond. For example, beginning at the start of each transcript, the audio recording was listened to whilst reading the transcript document and initial code ideas were identified during this process which were logged in a new column in the transcription document (see Figure 11). This process involved pausing and rewinding the audio accordingly to match the tempo of listening, thinking and typing. This was undertaken until the entire transcript had been worked through. The same process was repeated for interview transcripts. The purpose of this stage was to really begin the process of engaging with

the data in a methodical fashion, but constructive way, to stimulate ideas for codes, based on the content of the dataset and meaning within the dataset.

Once the initial ideas for codes had been logged within each transcript doc, a new document was created to explore how the initial code ideas looked like across all six transcripts. The purpose of this exercise was to just take a step back and take a collective overview of the ideas for codes that came out of the initial engagement with the transcripts where coding (rather than transcribing) was the main focus. See Figure 18 & Figure 19. Appendix J gives a step-by-step account of how the data was coded and managed using the NVivo software system.

	Data	Initial code ideas	Notes
Researcher 'R'	Can I start by asking you how you first got involved with that was City of Trees or the RHS Bridgewater?		
Interview participant '1001'	The RHS Bridgewater arm and it was I'm a tour guide RHS Bridgewater	Role	She begins describing herself as Tour Guide but her involvement has been much wider than this
R	Right right ok yeah		
1001	Yeah as a tour guide and there's a group of six of us and we've been there since the word go really so I'm going back to 2017 arm and gradually the team increase Bridgewater to include a small but very fantastic team outreach workers	Sense of Team	She uses 'team' a lot in her explanation – seems important to her
R	Yeah		
1001	...and so it was that team that ran with the Greening Up of Great Britain project and I think it was something like a £500 grant	Sense of Team	
R	Yeah		
	and [name removed] erm who is like manager of the section tell me how many applications came through and she like reeled off all of these sheets and sheets... coincidentally one of the winners was the small space in the woodlands now I've never been out of Worsley lived here all my life and I remember when that little space was first developed I remember it before it was developed and I can't honestly say whether [name removed] who was part of the outreach team approach me directly	Ownership of space Own heritage	

Figure 18. Initial coding ideas

I001	I002	I003	I004	I005	I006
Role	Passion for nature (trees)	SELF IDENTITY	Role - Rotarian	Driver - Wanted to	Covid
Sense of Team	Sense of place (pride)	PATHWAY -	Activity – not the	join group	Networking
Sense of Team	Roles	GARDENING	driver	Community	Pathway – RIIIS outreach
Ownership of space	LACK OF SKILLS	SCHOOLS	Role – charity linked to	Cohesion	In the community
Own heritage	ROLES	SCHOOLS	rotary	Community	Covid
Team	ROLES -	ROLE – EDUCATOR	Celebrity - Dolly Parton	connections	See other sites
Role	NEGATIVE COMM	ROLE –	Links to wider	Links to groups	Supporting org
Ownership of space	ENGAGEMENT	AFFIRMATION	initiatives	Pathway – seeking	Supporting org
Role	NEG COMM ENGAGEMENT	ROLE – IDENTITY	Schools	community life	Short-term projects
Role	NEG COMM ENGAGEMENT	ROLE – AS	Links to wider	Improving places	Social isolation –
Sense of purpose	NEG COMM ENGAGEMENT	TEACHER	initiatives	Working with	supporting org
Team	SENSE OF OWNERSHIP	ROLE AS	Activity	Council	Pathway - engagement
Role	SENSE OF PLACE	EDUCATOR	Making donation	Links to wider	through structured
Sense purpose	CHILDHOOD	OBSERVER OF	Networking	initiative	programme
Role	SENSE OF JOY	OTHERS	Links to other groups	Linking places	Structured programme
Role	SHARING WITH WIDER	BENEFITTING	Activity	Social media	Activity part of
Covid/lockdown	COMMUNITY	ROLE AS	Multiple groups	Community	programme
Sense of self	COMMUNITY ASSET	EDUCATOR	Networking	orchard	Links to wider initiatives
Friendships	ORGANISED GROUP	OBSERVER OF	Families engaged	Networking	People with defined need
Sense of self	GROUP OBJECTIVES	OTHERS	Schools	Negative – council	People with defined need
Sense of purpose	CITIZENSHIP	BENEFITTING	Covid	action	Covid
Meaningful activity	REFLECTION OF SUCCESS	JOY OTHERS	College	Sense of	Activity part of
Ownership of space	CREATING PLACES FOR PLAY	BENEFITTING	Activity	ownership	programme
Own heritage	CHILDREN	EXTENDING	Role – facilitator	Continuation	Links to wider initiatives

Figure 19. Coding ideas – frequency across datasets

3.11.3 Phase 3 & Phase 4: Generating initial themes from coded and collated data; developing and reviewing themes

When using RTA, the process of creating, developing and reviewing themes is iterative (Braun & Clarke, 2021), and thus the next two phases were carried out in an iterative way to generate themes. Up until this point, and although the coding process had generated parent and child codes, the process of identifying themes had not yet begun. An assumption that the parent codes (using deductive and inductive analysis) would become themes is a common mistake highlighted by Braun and Clarke (2021). Braun and Clarke highlight one of the common mistakes in using TA or Reflexive TA is the confusion over what constitutes a theme. There is no agreement over what is conceptualised as a theme in TA, but DeSantis and Ugarriza offer the following definition of a theme: “A theme is an abstract entity that brings meaning and identity to a recurrent experience and its variant manifestations. As such a theme captures and unifies the nature or basis of the experience into a meaningful whole” (DeSantis and Ugarriza, 2000: p.362).

Braun and Clarke initially offered an initial definition of a theme as some patterned response or meaning (Braun & Clarke, 2006) but ascertain that this definition was

perhaps too loose, and the popularity of their 2006 paper unleashed a flurry of use of TA riddled with misunderstandings of how to use TA, one example, confusing ‘topics’ or ‘domains’ as themes. As a response to this, Braun and Clarke revised their ‘Six Phases of TA’ guidelines (Braun & Clarke, 2006), and in their more recent release of Reflective TA as a distinct method, provide a prescriptive definition of themes in RTA as patterns of shared meaning that are united by a central concept or idea (Braun and Clarke, 2013). They describe themes as ‘stories’ that can be told about the data. In the weaker uses of TA, or instances of using Coding Reliability TA and Codebook TA, topics based as themes provide only observations on a shared topic, not on shared meaning. In a Reflective TA approach, themes are conceptualised as having patterns of shared meaning, they are analytic outputs, as opposed to analytic inputs which are more likely to form the basis of Coding Reliability TA techniques.

Therefore, the approach taken to theme generation for this study was to create themes through active interpretative engagement with the datasets. Braun and Clarke argue that themes do not miraculously ‘emerge’ (and for this reason warn the use of the term ‘themes emerge’) they are a product of the researcher’s interpretive powers which is influenced by prior knowledge, thoughts, opinions etc. (the subject of reflexivity is discussed further into this section). That this act of engaging with the data is not passive, but highly interactive (Braun & Clarke, 2021). During the interview, reflective notes were made to collect real-time thoughts on particular points or statement made by the participants that conveyed moments of emotion or were in some way seemed significant or nuanced in the two-way communication. These notes were referred to during the analysis process.

As discussed, the realist approach to data analysis is to use retrodution to identify causal forces that lie behind patterns or changes in those patterns (Ramesesproject, 2021). Therefore, the approach to this research was to undertake the process of theme development initially and then explore and revise themes further to seek causal forces (Westhorp, 2014). This was done at a later stage once the thematic ‘stories’ have been identified, to do this too soon could potentially hinder the full extent of the interpretation of the data to provide rich and telling accounts (Braun & Clarke 2013).

At this point, the aim of generating initial themes was to refine the 177 codes (14 parent codes) into a number of themes. The process of creating themes began with returning to the parent and child codes in NVivo. Each of the parent codes and aggregated child codes were revisited and the data aligned to the codes we re-read. Narratives were developed through the interpretation of the data. This creative process was influenced by existing insight and experience, in line with both a realist evaluation and RTA approach.

During this process, it became obvious that some of the parent codes were developing as themes, as they appear to be a centralised concept with shared patterns of meaning across the theme. The semi-structured interview consisted of questions relating to each of the Five Ways to Wellbeing (NEF,2008) each 'Way' forming the basis of a point for discussion. Therefore, a narrative was forming around each of the 'Ways' as a concept. For example, the parent code *Connect*, reflects NEF (2008) advice to 'Connect with those around you....'. There was a total of 137 references (chunks of data) that were rooted in the concept of being or feeling connected (or disconnected) to others. All six participants provided observations, a story, or narrative that could be linked to the concept of being connected. The numbers quoted here are arbitrary as the process of creating themes is not based on qualitative indicators, the point here is intended to give a sense of the number of interesting insights or 'nuggets' that helped to tell a wider story (through a collection of smaller stories) about how participants felt a greater connection (or not) to other people. For example, the child nodes under parent code, *Connect*, included *community bonds*, *lost connections*, *sense of solidarity*, *group dynamics*, *isolation* and *confrontation*. See Figure 20.

Connect	6	137	12/07/2021 16:42	JT	17/08/2021 12:57	JT
Communication	1	1	14/07/2021 15:59	JT	14/07/2021 15:59	JT
Community bonds	1	2	14/07/2021 20:41	JT	14/07/2021 20:45	JT
Confrontation	2	2	12/07/2021 18:41	JT	13/07/2021 16:43	JT
Extending peer grp	2	5	14/07/2021 15:52	JT	14/07/2021 21:43	JT
Friendships	3	6	12/07/2021 18:02	JT	14/07/2021 21:43	JT
Group dynamics	3	6	12/07/2021 19:28	JT	14/07/2021 15:18	JT
Isolation	4	5	12/07/2021 18:48	JT	14/07/2021 21:43	JT
Links to other group	2	2	14/07/2021 15:33	JT	14/07/2021 18:20	JT
Lost connections	3	3	12/07/2021 19:09	JT	14/07/2021 20:44	JT
Movement	2	5	14/07/2021 15:36	JT	14/07/2021 21:29	JT
Multiculture & diver	2	4	14/07/2021 14:37	JT	14/07/2021 15:52	JT
Networking	5	12	13/07/2021 16:01	JT	14/07/2021 20:50	JT
New connections	5	10	12/07/2021 18:29	JT	14/07/2021 21:43	JT
Picnic & shared foo	3	6	12/07/2021 18:35	JT	14/07/2021 20:28	JT
Reaching out wider	4	10	12/07/2021 18:35	JT	14/07/2021 20:47	JT
Self awareness	2	6	12/07/2021 19:27	JT	14/07/2021 16:03	JT
Sense of solidarity	1	1	14/07/2021 20:28	JT	14/07/2021 20:29	JT

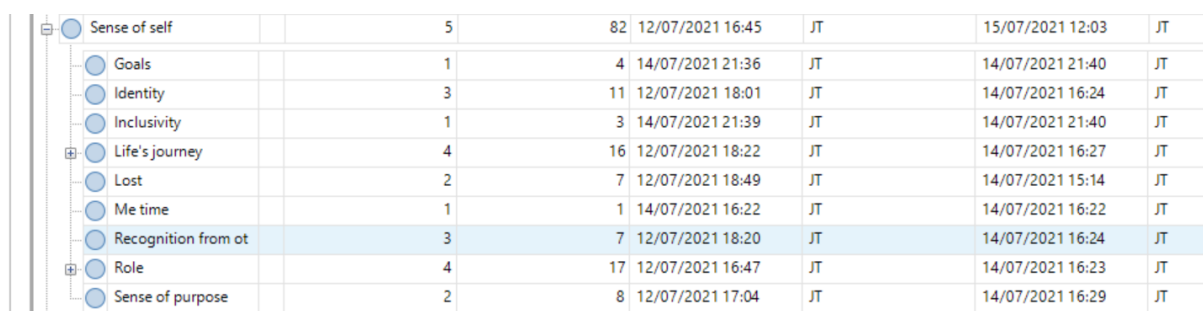
Figure 20. Example of child nodes under parent code 'Connect'

An example of a code relating to the theme *Connect* can be seen in Figure 21 which is a snapshot of some of the data allocated to the code *Group dynamics*. In this example, the participant is describing his experience of trying to step away from his long-standing role as Chair of a community group and the ways in which he and other members of the group interact as the responsibility of Chair is pushed around within the group. This was coded using the descriptor *Group dynamics* as his account has been interpreted as the processes involved when people in a group interact. This tells some of the overall story of how participants in civic environmental activity experience feeling connected to people, hence the central concept, or theme is *Connect*.

Group dynamics	
Reference 1 - 0.43% Coverage	
1002	Because if its like last year if I end up still doing it people will let me do it. It's not like we haven't got capable people we've got capable people they just need to stand up.
Reference 2 - 0.32% Coverage	
1002	Well I think sometimes you can be in a role too long can;t it's good people with fresh and fresh ideas and I can be there to support them.
Reference 3 - 0.20% Coverage	
1002	People with all (unclear) unfortunately nobody has got the willingness to be a Chair.

Figure 21. Example of creating references from data under child code 'Group Dynamics' under the code 'Connect' in NVivo,

An example of a theme created from inductive engagement with the data during coding, was that of *Sense of self*. Again, this was initially identified as a parent code with aggregated child codes. During the process of creating themes following the outcome of the coding process it became apparent that '*sense of self*' was a conceptualisation of the patterns of meaning around perceptions of self-identity, self-worth, feeling recognised by others. Therefore, *Sense of self* was deemed an appropriate theme which housed coded stories of people's experiences relating to life *goals*, *me-time*, *sense of purpose* etc. See Figure 22 which highlights this relationship in NVivo.



Sense of self	5	82	12/07/2021 16:45	JT	15/07/2021 12:03	JT
Goals	1	4	14/07/2021 21:36	JT	14/07/2021 21:40	JT
Identity	3	11	12/07/2021 18:01	JT	14/07/2021 16:24	JT
Inclusivity	1	3	14/07/2021 21:39	JT	14/07/2021 21:40	JT
Life's journey	4	16	12/07/2021 18:22	JT	14/07/2021 16:27	JT
Lost	2	7	12/07/2021 18:49	JT	14/07/2021 15:14	JT
Me time	1	1	14/07/2021 16:22	JT	14/07/2021 16:22	JT
Recognition from ot	3	7	12/07/2021 18:20	JT	14/07/2021 16:24	JT
Role	4	17	12/07/2021 16:47	JT	14/07/2021 16:23	JT
Sense of purpose	2	8	12/07/2021 17:04	JT	14/07/2021 16:29	JT

Figure 22. Example of child codes under the emerging theme 'sense of self'

Some codes (and parent codes) which had initially been identified were not appropriate to become a theme, or even an observation relating to a theme. For example, parent codes such as *Activities*, *Pathways* and *Own heritage*, and associated child codes, on further analysis were deemed not to be conceptual themes, but actually describe the context by which participants were operating within. Although not themes, such examples were kept within the NVivo framework which could provide insight at a later stage of the analysis when seeking to understand C-M-O configuration and causal powers at play. See Figure 23.

Own heritage	3	28	12/07/2021 16:45	JT	15/07/2021 12:02	JT
Attachment to place	1	4	12/07/2021 16:59	JT	12/07/2021 19:12	JT
Childhood	3	9	12/07/2021 18:17	JT	14/07/2021 16:31	JT
Family	2	7	12/07/2021 18:10	JT	14/07/2021 16:31	JT
Memories	1	3	14/07/2021 15:55	JT	14/07/2021 16:13	JT
Pillars	1	4	14/07/2021 16:25	JT	14/07/2021 16:30	JT

Figure 23. . Example of parent code ‘Own heritage’ and associated child codes not being a conceptual theme, but giving insight into context (for CMO configuration)

In order to manage the differences in coded data, using NVivo’s functions, colour coding has been used to identify themes as well as parent and child codes that are related to the Context, Mechanism, Outputs, see Figure 24:

NVivo colour codes to label data:

Theme = pink

Context = green

Mechanism = red

Outcome (positive) = yellow

Outcome (negative) = blue

Miscellaneous = orange

Nodes							
Name	Files	References	Created On	Created By	Modified On	Modified By	
5 Ways to WB		3	5 13/07/2021 16:54	JT	17/08/2021 15:55	JT	Orange
Reflexivity		4	9 13/07/2021 16:17	JT	17/08/2021 16:10	JT	Orange
Pathway		5	22 13/07/2021 16:26	JT	17/08/2021 16:10	JT	Green
Covid		5	23 12/07/2021 18:00	JT	17/08/2021 15:55	JT	Green
Own heritage		3	28 12/07/2021 16:45	JT	17/08/2021 16:05	JT	Green
Be Active		6	32 12/07/2021 16:43	JT	17/08/2021 15:53	JT	Pink
Organisation		4	32 13/07/2021 15:14	JT	17/08/2021 16:08	JT	Green
Feelings & mood		6	38 12/07/2021 18:09	JT	17/08/2021 15:56	JT	Yellow
Learn something new		6	45 12/07/2021 16:44	JT	17/08/2021 16:02	JT	Pink
Activity		6	49 12/07/2021 18:04	JT	17/08/2021 15:51	JT	Green
Give Back		5	51 12/07/2021 16:44	JT	17/08/2021 16:00	JT	Pink
Take notice		5	58 12/07/2021 16:43	JT	17/08/2021 16:01	JT	Pink
Negative		6	59 12/07/2021 18:43	JT	17/08/2021 16:07	JT	Blue
Physical place		4	60 12/07/2021 16:49	JT	17/08/2021 16:06	JT	Green
Observers of others		5	74 13/07/2021 15:38	JT	17/08/2021 16:09	JT	Orange
Sense of self		6	135 12/07/2021 16:45	JT	17/08/2021 16:04	JT	Pink
Connect		6	137 12/07/2021 16:42	JT	17/08/2021 15:54	JT	Pink

Figure 24. Identifying C-M-O across themes using colour coding

3.12 Ethics

According to Braun & Clarke (2013), ethics should be fundamental to the way research is undertaken as it interacts with other academics, participants and the world in general. This is outlined clearly in the Economic and Social Research Council's Ethical Framework based on the ERSC 6 key principles:

- research should aim to maximise benefit for individuals and society and minimise risk and harm
- the rights and dignity of individuals and groups should be respected
- wherever possible, participation should be voluntary and appropriately informed
- research should be conducted with integrity and transparency
- lines of responsibility and accountability should be clearly defined
- independence of research should be maintained and where conflicts of interest cannot be avoided, they should be made explicit.

Principles and protocols have been applied to ensure that informed consent was obtained, participants were made aware of their rights to withdraw, participants have been made anonymous. Both University and organisational GDPR policy has been met. The research is Type 2 Ethical Approval. An application to the Ethics Committee has been submitted and approved.

3.13 Risk

With the exception of the unforeseen global pandemic, the study was low risk. The implications for the impact of COVID were mitigated. For example, no GWTWB data were collected out in the field between March 2020 and May 2021 thus avoiding all lockdown periods. In relation to interviews, many of these were conducted on-line and always online during the period in and around lockdowns. Once lockdowns had lifted, the field data collection carried out by third-party organisations during events and activity periods were subject to rigorous risk assessments and following the most up-to-date health advice on reducing risk whilst holding events or activities. Indeed, this led to a delay of at least 10 months due to organisations not being able to hold events during the pandemic. COVID aside, the risk of not being able to recruit participants was low given that the recruitment took place from existing outreach work. In relation to

reflexivity, I work for City of Trees so any risk of bias at the data analysis stage was managed through cognizant 'bracketing' (Holloway 1997). A clear audit trail in the form of a research log, extensive notetaking and mind-mapping is a sound way to illustrate the process (Smith, Flowers and Larkin, 2009). Examples from transcription of interviews, thematic development, clustering and structuring of data, can be found in Appendix J Process of data analysis and is explained further in the next section.

3.14 Reflexivity – reflecting on positionality

Although both a realist evaluation and Reflexive Thematic analysis welcome the active involvement of practitioners in the research process (Pawson & Tilley, 1997; Westhorp, 2013; Braun & Clarke 2021), it is still necessary to address the issue of reflexivity, to address the risk of bias, provide transparency and ensure a robust and rigorous approach is undertaken (Braun & Clarke, 2006). The process of reflection is goal orientated with the aim of employing a continuous process of co-construction (in this instance the researcher-interviewer and participant) and deconstruction, where the researcher interviewer constantly challenges internally their decision making in the process of interpretation (Barrett, Kajamaa & Johnson, 2020). Reflexivity is an on-going process that involves reflection to adapt our understanding and social realities during the process of interaction with others to better connect, understand and interpret their experience (Barrett et al., 2020). For this study, the process of reflection was a continuum both during the interviews and during the analysis.

For example, all interview participants were made fully aware of my day-role, and that I was wearing a student 'hat' for the interviews. It was explained to interview participants that I could not ever truly disengage from my conscious thought processes forged through practitioner experience. Braun and Clarke, (2020) assert that reflexivity is something which cannot be fully attained but strived for and practical steps were taken to reflect on reflexivity. For example, during the interview process notes were made to capture significant points throughout the interview, whether that be points of conversation that were nuanced through emotion as participants were talking, or thoughts that could be reflected upon later during the process of interpreting the analysis. During the interview and analysis stage the process of challenging interpretation during analysis, seeking alternative perspectives, was part of the

analytical thought process. Furthermore, during the process of listening to the recordings and coding, comments that were made by the participants that stood out to be possibly influenced by my presence, because of the role and organisation worked for were coded as 'Reflexivity'. This was to keep a log of these instances, to refer back to, and challenge myself during the process of interpretive analysis. An example of this was where one of the participants, Jack, talked about trees, and orchards and expressed his passion for trees in an urban setting, in an example quote:

".. cos another things you've not mentioned I'm very passionate about is tree planting trees in urban environments" (Jack - participant)

In this example, a reflexive approach was undertaken during both during the interview stage and during analysis, to self-reflect: *is Jack saying this because I work in trees?* This data was coded as both 'Reflexivity' and 'Passion for nature'. Therefore, during further analysis and in creating themes, this data was treated as potentially less reliable than other data.

Finally, my starting point was not to assume that not everyone loves or values nature in equal measure and that there are negative experiences derived through participation in civic environmental activity. I asked participants to discuss any negative aspects of their experience and data gathered suggests they did not hold back on this request.

3.15 Summary

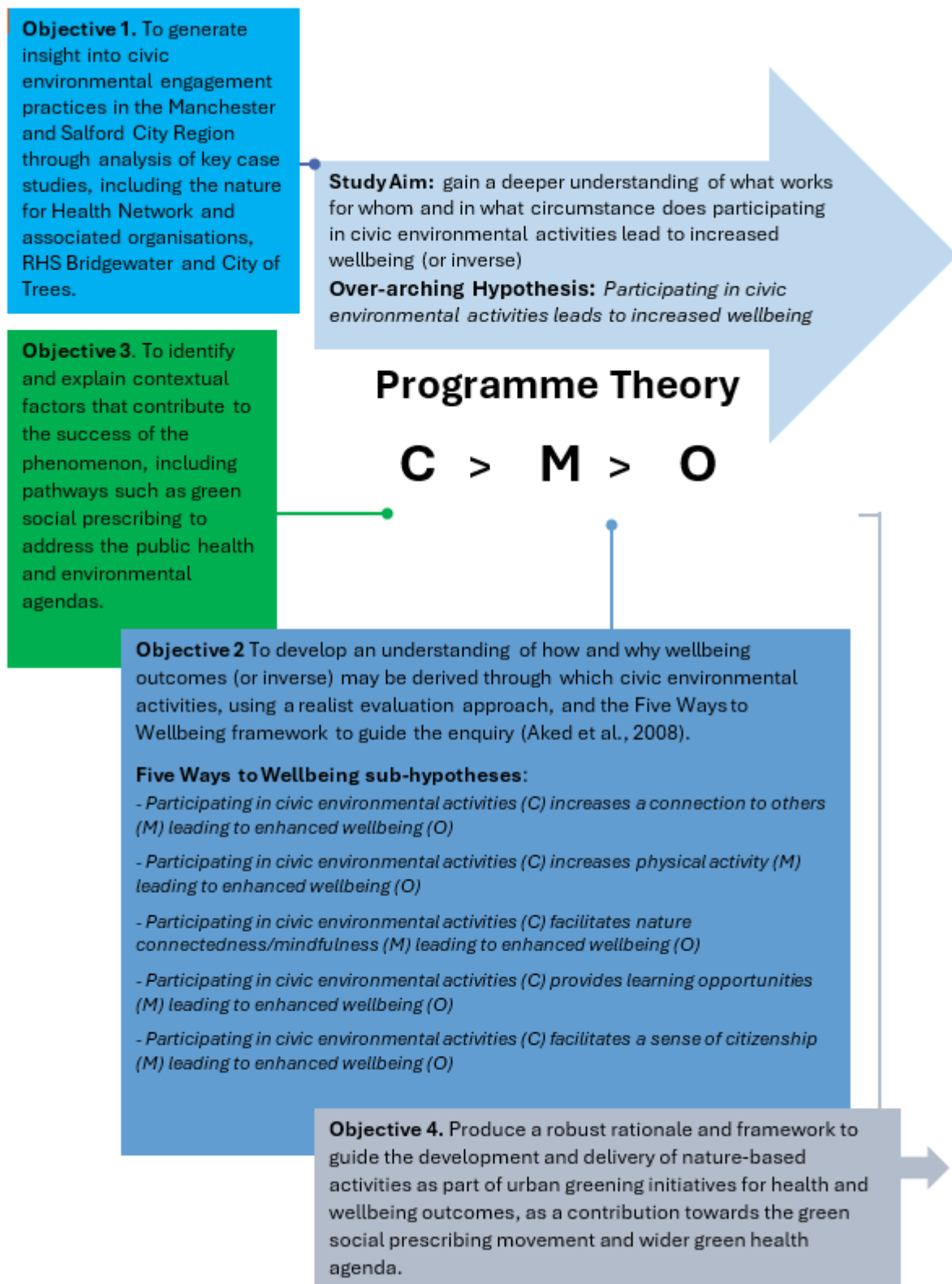


Figure 26. Visual summary of Aims, Objectives & Methodology

This chapter covered in detail the full approach to the chosen methods and methodology, i.e. a mixed-methods realist evaluation . The philosophical underpinnings have been explained in detail and the rationale for why realist evaluation was deemed a good fit for the study.

The realist evaluation design process has been explained with a focus on the development of the programme theory that explains the theory of change behind the phenomenon in question. The programme theory and associated hypothesis and sub-hypotheses have been designed to get a closer understanding of what works for whom and in what circumstance does participation in civic environmental activity lead to enhanced wellbeing. Figure 26 provides a visual summary of the aims, objectives and methodology. The methods of data collection have been presented and discussed in detail. In summary:

Both quantitative and qualitative data were sought from the GWTWB questionnaire and qualitative data from semi-structured interviews and focus groups. With the help of SPSS software, quantitative data analysis using a mixture of descriptive statistical analysis and inferential statistical analysis. This was used to assess data collected in the GWTWB questionnaire, to understand motivations (pre-activity) and reflections on what the activities meant to participants (post-activity). Data from the GWTWB questionnaire comes in several parts: a pre-and post-mood score (1-10) to assess any mood uplift, pre and post activity; spidergraphs to capture statistical data on motivations and mechanisms, based on the Five Ways to Wellbeing (Aked et al., 2008). The analysis of this uses inferential statistical analysis. The pre- and post-activity open-ended questions on the GWTWB provide further qualitative insight into participant experiences. This qualitative data was analysed coded and themed within SPSS descriptive statistics are used to glean further insight.

The qualitative analysis of the semi-structured interviews using RTA approach gives the most in-depth, richer insight into participant experiences and practitioner insight. Reflections on reflexivity have been recorded and discussed to hopefully provide a transparent approach to trustworthiness and rigour.

The next Chapter 4 will present the first installment of findings based on the contextual factors (C) in the C-M-O configuration.

4 Chapter 4 Findings - Understanding the context

This chapter will present findings relating to the Context in the C-M-O configuration and with a focus on contextual insights from both participants and practitioners. As realist philosophy assumes, C-M-O systems operate on different levels but are inextricably linked. The C-M-O configuration for participants will differ from the C-M-O configuration for practitioners, but one does not exist without the other. For example, going back to the programme theory, the resources that enable facilitate activities rely on practitioner time, skills, funding that sits and operates within its own context but impacts on participants' M-O experience. Similarly, without the presence of participants and their M-O experience, the resource provided in relation to staff time, funding, skills etc. becomes a fruitless exercise (Pawson & Tilley, 1997).

Returning to Pawson and Tilley's (1997) assertion that Resource + Reasoning = Mechanism, understanding the context by which resource and reasoning can converge is a vital piece of the jigsaw in this type of evaluation. Typically, realist evaluation seeks to grow an understanding of the mechanisms and how a programme has enabled decision-making or behaviour change. Programmes are multi-dimensional, with decision-making at play at a micro (individual level) and at a macro (organisation or societal) level. Therefore, it is appropriate to triangulate both participant and practitioner perspectives. The data sought to provide greater depth of understanding into the context: the ingredients to enable a programme of activities (as part of an outreach plan) to be successful.

The contextual factors reported here in the findings have derived from qualitative and quantitative data analysis. Key themes were identified through a process of retroduction during qualitative analysis, using data from the interviews and, where applicable, the qualitative elements of the GWTWB questionnaire.

Three datasets were used to inform this section where applicable:

1. Reflective Thematic Analysis of participant perspectives (n=13) to give greater understanding of the motivations for taking part and contextual factors.
2. Reflective Thematic Analysis of practitioner perspectives (n=11) on the context to enable C-M-O configuration.

3. Participant motivations were analysed using GWTWB questionnaire (n=357) quantitative data from the spidergram (radar graph - scales) representing the Five Ways to wellbeing to understand motivations/expectations through descriptive statistical analysis. Qualitative data from the open-ended question provide qualitative insight into participants motivations for taking part.

4.1.1 Participant's perspectives

The aim of understanding better the contextual factors for the participants, is to set the scene and understand how or why the participants took part in activities.

Understanding better participant pathways to activities and their motivations for taking part brings a closer understanding of participant '*reasoning*' which according to realist evaluation theory, interacts with '*resources*' that then lead to causal mechanisms.

Data were collected from participants in two ways: the mixed-methods GWTWB questionnaire (QUANT-QUAL) and through semi-structured interviews and focus group (QUAL). Results from both methods will now be presented respectively.

4.1.2 Practitioner perspectives

As discussed at the beginning of this chapter, there are C-M-O systems operating at different levels, but are interrelated. Therefore, the context and parameters by which practitioners are operating in, has an impact on participant experience. The context from a practitioner perspective will address the key factors (C) which contribute to *resources* which may or may not interact with participant *reasoning* to determine the success of the causal mechanisms (M-O), the ingredients, or underlying factors, which may determine success. All data was taken from practitioner interviews and focus group (QUAL) and analysed as per previous data.

4.1.3 Scope of context

Neilsen, Lemire & Tansig (2021) highlight the methodological challenges related to examining context in realist evaluations due to limited knowledge on how context is conceptualized and applied. This study has responded to Greenhalgh and Manzano's (2021) call for the scope of context as part of configurational narrative of causation, and

contextual factors included in the evaluation having explanatory value to the overall working of the configuration.

Therefore, the scope of the context is presented in this section in 6 points. Points 1-4 relate to the 'Resources' originally identified in the programme theory (see 3.6.5), i.e. The physical space to conduct activities, the activities themselves, organisational resource in the form of funding and staff capacity. These points include all of the elements, 'ingredients', required that may or may not interact with participant 'Reasoning'. Points 5&6 relate to the participant 'Reasoning' i.e., their motivations for taking part, their chosen pathway to activities and the theme of COVID which emerged as a significant point of context through the qualitative analysis since the study timeframe spanned the COVID pandemic and associated lockdowns. The analysis of the GWTWB questionnaire (see 3.9) informed points 5 & 6. triangulated with the qualitative data sets.

Key points relating to 'Resources':

- Point 1. The physical space (public realm greenspace) and landowner permissions for activity.
- Point 2. The activities relating to creating, curating and custodian concept.
- Point 3. Resources being available to facilitate outreach.
- Point 4. Organisational capacity, staff having the right skills and expertise to undertake activities with wide audiences

Key points relating to 'Reasoning'

- Point 5. Participants reasoning and motivation for undertaking activities. This is explored using the Five Ways to Wellbeing framework and included topical contextual factors, COVID, climate change and nature recovery.
- Point 6. Pathways in place to enable people to participate in activities

In order to understand the context within the scope identified above, each point, or theme, will be addressed in turn in the following sections.

4.1.4 Point 1 - The physical space

This section illustrates how the physical space, that is, where activities take place in a public realm setting, is a key contextual factor and can impact on the feasibility and success of activities in a number of ways as outlined in the following sub-themes of ‘the physical space.

4.1.5 Landowner permission & access to land

Activities take place on public realm greenspace land typically owned by local authorities. Practitioner interviewees reported that obtaining permission from the landowner was not always easy and this could be a barrier to activities going ahead or not, despite the activities contributing towards the maintenance of sites.

You know, that there's got to be something in it for the land manager and they've really got to see the benefit but it's got also be a two-way process

(Cathy - Gov practitioner)

There was conflict with landowners (examples being local authorities and social housing providers) over where activities are delivered could be stressful, as observed by two practitioners, Cathy - Gov practitioner and Matt - Env practitioner , that sometimes this was felt at the community level and have a negative impact on participation:

I don't know, it just creates loads of stress and .. that doesn't benefit communities does it, you know?

(Cathy - Gov practitioner)

When there's some sort of larger .. erm, authority that erm, ends up sort of .. messing it up for them, from their perspective anyway... Er, and so that really riles people doesn't it when they're sort of the underdog and they get sort of trampled on or something.

(Matt - Env practitioner)

These examples of conflict suggest that practitioners ideally require a good level of negotiation and persuasion skills necessary to successfully secure land from

landowners in order to obtain permission to carry out activities on 3rd party land. The data highlighted that access to land can be problematic and can have an impact on the type of session, for example practitioner, Matt - Env practitioner, highlights here the predicament of securing land that is of sufficient quality, or less urban, to run sessions he deems to be 'therapeutic':

you know, somewhere away from busy roads, pollution, erm, as much nature as possible as we can possibly have in a city so that, that kind of proper diversity of erm, you know, of plants and species because it's just much more therapeutic basically but it's a lot easier to run sessions in that sort of environment.

(Matt - Env practitioner)

Practitioner, Sienna - Env practitioner, describes the complicated nature of delivering activities in public spaces and how this can cause conflict with stakeholders. For example, wanting the park to remain open-access for all users whilst considering safeguarding for those vulnerable attendees. This practitioner describes how multi-stakeholder relations can be tricky with the public as well as the landowners, who may have competing agendas different priorities and resource challenges.

So erm, the biggest challenge I would say is doing stuff in a public park.. in a public park that is .. obviously for everybody's use but it's a, a park that is not particularly large,

(Sienna - Env practitioner)

This subsection illustrates that in a public realm setting, gaining access and permission to use land as a venue for activities, even when said activities help to improve or maintain the land, is not straightforward process. Data illustrated that accessing land and maintaining land (work beyond volunteer capacity) was an issue experienced by practitioners. Apathy or competing priorities from landowners can impede the delivery of activities and cause stressful situations for practitioners and have a negative impact on community participation and empowerment.

4.1.6 Types of land, urban v rural

There is a perception by some practitioners that the landscape needs to be quiet to be therapeutic. But this isn't always easy in an urban setting with limited availability on quality of spaces:

you know, kind of brownfield, really ..

(Matt - Env practitioner)

Both participants and practitioners discussed the difference between sites in a deeper urban setting, versus site that were either in a peri-urban location or tucked away, having a more 'rural' feel. For example, the corporate participants expressed how they enjoyed being away from the city where they worked/lived, but appreciated sites in more peri-urban places, for example:

I lean more towards the ones where it's very obvious that we're going to be in more of a rural setting than erm, directly in an urban setting... we went to Whitworth Park and did the one there which in my mind even though it's a beautiful park it's still more urban... versus when we were up in Bury and and it's cold and you get that windburn but you, you physically can feel it as well that there's something that you're getting out of just being outside in nature.

(Laura - participant)

Others were happy to be undertaking activities in an urban setting because it gave back more to the wider community:

the land, the area, the people around me that you want them to be healthy and happy as much as you want yourself to be healthy and happy

(Georgia - participant)

The rehabilitation participant focus group debated the difference between activities in an allotment setting and those in urban woodlands. Participants described the allotment as being more therapeutic, which seemed to mean slower paced and quieter. However, the rehabilitation participant focus group all agreed that they enjoyed the

woodland work more as the terrain was more challenging and there were risks (in a good way) to using the tools.

physical, I kinda, you love that thrive of doing it more.

(Rob - participant)

Mentally, it .. words can't describe, it's therapeutic and .. it has a massive effect on you, just being out there

(Rob - participant)

activities are a little bit more, like [name removed] saying, a little bit more .. er, physically demanding because you're using proper tools

(Mia - MH practitioner)

This contradicts the assumption by practitioners that those seeking rehabilitation activities for therapeutic means need to have quiet, gentle pace in a gentle setting. In summary, the type of land, that is whether it has more of an urban or rural feel can be a key factor to participant experience, with some participants favouring a more rural feel (peri-urban) setting. However, it should not be assumed that those seeking therapeutic rehabilitation want to experience low-key activities in quiet spaces. Undertaking more challenging activities in spaces has therapeutic value.

4.1.7 Static vs dynamic spaces

Static spaces refer to activities based at one venue, that does not change. Dynamic spaces refer to the roving nature of some initiatives where participation is not fixed in the same location but 'rove' across a geographical area or district. This lack of geographical continuity that can be an issue for participants wanting to come back to the same space or seeking an on-going relationship with a space. Therefore, activities on dynamic spaces can be a barrier for some, as Beth - Env practitioner, shares her experience with the focus group here:

we don't have a fixed location a lot of the time, we're trying to trial... we can have that regular groups coming, but if we don't it's a new place every single time, so that potentially is something as well that is a barrier.

(Beth - Env practitioner)

Therefore, the use of spaces, whether static or dynamic, is a consideration in the design of the engagement model. For example, whether people are purposefully being targeted hyper-locally, or where a sense of community ownership is an important aspect of desired outcomes in relation to the design of the engagement model.

4.1.8 Safe space

The mental health practitioners highlighted the importance of creating an environment that was a 'safe place' particularly for vulnerable participants. This referred to firstly the physical space itself, somewhere calm, a place to reconnect with nature:

about connecting with nature because it's erm, there is something about escape, like an escape in a way from a certain type of verbal environment or you know, I mean like the people just respond to having a bigger sky and it being quiet or hearing the birds or whatever. And there's something in that, that physical space that allows you to have that I think mental and emotional space actually to let go of things and you see that in people's body language very clearly I think when they move into those spaces of letting go

(Abbie - MH practitioner).

In some instances (this example was described by a mental health practitioner at the focus group), the environment needed to be trauma informed, feel safe and natural environments can provide this due to the calm and tranquil setting.

thinking about what is a trauma-informed space or a trauma sensitive environment. Nature and green spaces fit, tick so many of those boxes that research tells us that it's like developed a sense of safety.

(Rachel - MH practitioner)

In summary, for some, particularly those seeking rehabilitation or mental health services, creating a sense of safe place is important.

4.1.9 Environmental justice issue

The issue previously highlighted in the literature review, relating to environmental quality of spaces and social economic factors (such as Francis et al., 2012; Tzoulas et al., 2007; Cook et al., 2019) is supported by practitioners who articulated that greener places are often perceived by others as being a ‘nice-to-have’ for those on a higher economic status, but it something that should be available to everybody:

we are seeing it as a nice thing and as it becomes more erm, scarce it becomes like erm, a nice thing for rich people to do.
(Abbie - MH practitioner)

In summary, in relation to activities taking place in a public realm setting, the physical space itself is an important contextual factor and the implications of accessing and using the space are not straight forward. There are mixed perceptions between participants and practitioners about what constitutes a ‘therapeutic’ space.

4.2 Point 2 - The activities

As discussed in Chapter 1, the ‘activities’ in question refer to participation in civic environmental activities that improve public realm greenspace at a neighbourhood level, such as improving greenspace provision or helping to maintain greenspace. This is both broad ranging in the types of activities undertaken but also a specific phenomenon undertaken by many organisations, large and small, as part of their community activities to facilitate community involvement in their local environment.

4.2.1 Activity types relevance

The types of activities were mentioned during interviews and the following table gives an example of the activities mentioned. The activities are mixed, but all align with the creator, curator, custodian concept of civic environmental activities for public realm:

Table 4-1. Types of activities reported in semi-structured interviews.

Activity descriptions
Improving church grounds Tree planting Tree maintenance Mulching Tree cages Orchard creation Grafting Gardening in park Tree clearance Wildlife sculpture trail Creation of new path for school through woods (to avoid a road) Woodturning Fundraising Towpath cleanups Rhododendron bashing Woodland management Play area improvements Leaflet production & distributions (promoting local woodland) Fundraising Footpath improvement Chairperson Memorial garden Mosaic garden Seed sowing Litter picking

4.2.2 Activity type unimportant

Despite the range of activities, a number of interview participants (n=5) expressed unprompted, (i.e. without being asked) that they did not care or mind what activity they did, or the fact they had undertaken a range of activities, it was taking part, or being part of something with others, or part of something they were enthused about.

that gives you some idea of the disparate things we've done really.

(Jack - participant)

In this example, the following participant Anne, describes how the type of activity relating to the physical space 'canal' or 'woodlands' did not matter but it provided

points of interest and conversation she could share with others that was beyond the usual conversation which jokes made her conscious of ageing and getting old:

you'll find people saying to you oh so how's it going you know whether it be the canal work or whether it be oh are you involved in the woodlands so if you you if you've got something other than your immediate family to talk about then it expands your conversation and yeah it creates another interest to yourself and to other people because the older you get the more familiar you get in your own group of friends and family and before long you start conversations just revolve about memories and reminiscences and glory be I'm not quite pipe and slippers yet (laughs)

(Anne - participant)

4.2.3 Activities were linked to wider initiatives

Some civic environmental activities were linked to wider initiatives for example, the 'purple pinky' campaign was used to raise the profile of polio overseas, taken on by a Rotary Club member resulted in local community groups planting thousands of pink and purple crocuses and other planting in public realm. Activities provided a medium to work with the community and an opportunity to link together local schools to colleges to Duke of Edinburgh through campaigns, thus strengthening community cohesion:

That is working with children in schools and they kind of emblem of that is is the purple pinky where we go in and talk about erm polio... But it's the planting bit that I'm interested in and getting kids involved erm in planting and growing.

(Ruth - participant)

In summary, perspectives from the participant interviewees indicate that although the activities are varied, they align with the notion of civic environmental activities are undertaken as part of the custodian concept, as supported by environmental organisations. Activities did not necessarily influence the firing mechanism to enhanced wellbeing but form part of the context narrative. Participants described how activities linked back to broader, wider initiatives and this can extend the reach of those

involved, both to other people within the community and a link to organisations offering support.

4.3 Point 3 - Funding

The context of resources available form part of the assumption in the programme theory. Without resources, especially funding, the organisations cannot operate which has a direct impact on the programme.

4.3.1 Funding is essential

This section presents findings that suggest funding activities was a key challenge. The following quote sums up the sentiment expressed by all of the practitioner interviewees.

I just wish it would get us some bloody green wellbeing funding! [laughs]
(Sienna - Env practitioner)

There was general consensus or assumption that funding is absolutely necessary in order to support activities and working with individuals and groups. The notion that volunteers could support and facilitate nature-based activities without additional organisational support was not seen as a viable option amongst practitioners.

I think you'd need, definitely need some sort of professional staff within that space, we cannot expect communities just to go off and do all this themselves.
(Cathy - Gov practitioner)

4.3.2 Funding strategies

The findings showed that there were inconsistencies in the way in which organisations secured and used funding for activities and this came to light during focus group discussion. Some practitioners described how they were creative with funding – using or combining funding related to climate change or biodiversity initiatives, but others found this challenging. There were examples of practitioner's organisations being less creative with funding, with a focus on outputs rather than outcomes. In this example,

this is an organisational issue (rather than funder requirement), internally creating a tick box system, effectively creating silos for their funding:

Nina - Env practitioner - We do tick, we tick, we do tick a box, we tick what does this, is it environmental outcomes or peop- like we have four boxes, is it learning and skills, is it environmental, health and wellbeing or ..

Researcher - What are the boxes, are they your own boxes?

Nina - Env practitioner - Yeah, our own boxes for what di- for what is this project hoping to achieve.

There were different approaches and perspectives on this rigid approach to funding amongst the practitioners as they discussed and debated how to best deploy resources to achieve on outcomes as well as outputs.

4.3.3 Funding for health

Practitioner interviewees and the members of the focus group discussed funding specifically (n=10) for health-related nature-based activities made the point that this type of funding was difficult to secure. Funding for activities framed under 'health' amounted to small amounts over short periods of time which made it very challenging for running programmes. The short-term nature of funding projects specific to Green Social Prescribing (GSP) was cited as an issue and risk to being able to deliver, particularly in the longer term. The short-term nature of the funding often meant that there was a need to hit the ground running, and this approach was not helpful in terms of recruiting participants. Funding for health specific activities was described as chaotic and tricky to navigate by practitioners (n=8):

You know, actually we need I think really long term funding as well, you know?

(Cathy - Gov practitioner)

Yeah, and we do have a, like a pathway ideally and the funding for the wellbeing and the outreach is like patchy as, it's really patchy [laughs]. It's awful, like we have no idea what we're going to be able to deliver and who with and we've got loads of people who we'd love to support through that but we don't have the funding.

(Nina - Env practitioner)

4.3.4 Funding as a barrier to participation

Funding for specific health focused activities was described by practitioner interviewees and the focus group (n=10) which drew out issues around funding creating a barrier to participation due to strict criteria, recruitment targets and a focus on quantity (of people attending) and less about quality of the service.

and yes it was restrictive, it's this amount of people then, and at [org name removed] we also, we always try not to work in quantity ...it's about personal experiences, it's about the quality of the work and we don't want to move into that, that place.

(Nina - Env practitioner)

There was discussion in one interview of examples of pump-priming funding, i.e. funding given to kick-start a project, but worth noting that the remaining project funding is not ever guaranteed. One practitioner interviewee, (Cathy - Gov practitioner), gave an example given were smaller pots of approximately £5k. Given the issues raised regarding short-term funding for health specific activities, this may or may not be helpful. Smaller-scale funding for health-related activities is sometimes rejected when the requirements are too problematic. One mental health practitioner (Rachel - MH practitioner), discussed that they had moved away from trying to secure health-related commissions as it was too problematic:

I'd have to communicate really well with the funder that it's not going to work if you're going to say you want this many .. people to attend this many sessions..We've got six years of experience that erm, the, we believe the impact on people and the people delivering the service is too negative

(Rachel - MH practitioner).

In summary short-term, small scale funding with problematic requirements is being bypassed, leading to funding gaps to run services.

4.3.5 Resorting to utilising core funds

One practitioner working for a mental health charity, described how the charity she works for has resorted to using core funding (rather than project funds) because the current funding landscape for health specific activities was too problematic to be able to run a green offer and maintain a green space as part of their business-as-usual services.

Researcher - So for clarity then, you've moved your funding away from being those more short-term project, you know, commission-based into actually using your core, so to be able to sustain it using unrestricted [funding]?

(Rachel - MH practitioner) – Yeah...

but I still have to scope out funding because that's not a sustainable, it's not sustainable necessarily if other things happen across the charity, and you know, there will be less er, unrestricted income to use for, for that project, do you know what I mean?

(Rachel - MH practitioner)

However, Rachel - MH practitioner acknowledges this approach is not ideal or sustainable for a charity's financial reserves. The mental health practitioners placed high value on the activities as part of their service for the outcomes it provided. As an example:

because it's such a valuable service and our outcomes are fantastic,

(Rachel - MH practitioner)

In summary, mental health practitioners (n=4) placed high value on the activities provide in relation to impact. As such there was an example shared where a charity had resorted to using core reserves to fund projects, acknowledging this approach does not make sound financial sense, putting other core aspects of the charity at risk by doing so. Environmental practitioners feel compelled to recruit beyond their usual audiences of need. For example, Nina - Env practitioner, describes bypassing their usual audience

of ‘people who are unemployed’, to comply with a presumed assumption or requirement from the funder in relation to audiences on a health referral pathway.

4.3.6 Resources for additional support

Linked to funding, practitioner interviewees (n=4) expressed the need for additional support for those participants seeking rehabilitation. The types of additional support involved encouraging people to attend the sessions, providing peripheral support by teams specialising in finance, housing and welfare rights and physical activity. This also included providing CBT with an emphasis on person-centred approach and meeting individual’s needs and providing support for that. It was suggested that often, support for the wider needs was prioritised by clients. This was a specialism of the mental health charities and much less so the environmental organisations, although there was a sense of getting caught up in wider needs when seeking GSP referrals. For example:

It’s not just nature, it’s not just, you know, counselling and therapeutic interventions, it’s not just medicine, it’s not just er, improving your physical health, it’s not just your benefits and your housing it’s all of those things. Obviously, some of them trump others
(Rachel - MH practitioner)

4.3.7 Partnerships to maximise resource

The value of partnerships working together to enable a greater reach to those in need was discussed by all practitioner participants (n=11). An example by Matt - Env practitioner is included below:

So there’s a whole range of different erm, different types of organisations and, and I would say that like al-almost all of them, this sort of activity isn’t their sort of bread and butter, they, they’re kind of working on a lot of other things and then this is just a, erm, it just sort of augments what they’re, what, what they’re doing
(Matt - Env practitioner).

Despite some issues, it was suggested that the links between health and environmental sector led to good partnership work across Greater Manchester, and this was not the case elsewhere. But also a sense that more could be done:

and there's very good sort of partnership work. But if I look to other areas in the North

West, there isn't.

(Tom - Gov practitioner)

we found that the environmental sector has been very siloed in its approach and actually not working with the er, NHS and Environmental Health and Social Care, so looking at preventative measure, and it links in with actually how do we relate to our

service users and, and people? (Tom - Gov practitioner)

4.4 Point 4 - Staff capacity and skills

4.4.1 Staff skills – fighting imposter syndrome

Environmental practitioners had different views on staff capacity and skills in engaging people with mental health issues. On the one hand it was felt as though environmental practitioners found delivering activities targeting people with mental health issues challenging. On the other hand, it was felt as though it was a confidence issue described as 'imposter syndrome':

I think because of actually using that term "green social prescribing" or, or any of the jargon you know, social and therapeutic horticultural ecotherapy, I think people feel like they're sort of erm .. you know, they've got that sort of imposter syndrome for, for doing

those sorts of activities and you know,

(Nina - Env practitioner)

I came really for the creative bit or for the environmental bit but the people that we work with day to day, erm, really have a lot of needs so you end up taking on that other role, whether that's what you chose to do or not I guess.

(Sienna - Env practitioner)

Highly, highly vulnerable people with so many complex issues so I'm, I'm training myself at the minute to get my head back into that space, do you know what I mean?

(Sienna - Env practitioner)

By contrast mental health practitioners were more comfortable with individuals with additional needs, from providing help to attend activity sessions through to other types of support (such as housing, welfare advice, CBT).

4.4.2 Leaning on volunteers

Practitioner interviewees (n=3) felt strongly that the model of using volunteers to run activities for participants coming from a specific health-based pathway was unfair, as this could result in volunteers being under-skilled and feeling overwhelmed. For example:

They, and they didn't necessarily have the skills or expertise and they're being asked to manage green spaces on behalf of landowners and they're being asked like by me, "Oh, would you like to accept referrals from link workers?" and they're thinking, "I'm a volunteer, and like I've retired, I just wanted to plant some flowers in my, in my park."

(Nina - Env practitioner)

4.5 Point 5 - Participant motivations - influencing factors

This section presents findings on the contextual factor of participant 'reasoning' i.e. *how* and *why* participants choose to take part in civic environmental activities, as per realist evaluation approach (Pawson & Tilley, 1997).

The Five Ways to Wellbeing Framework was used as a model to initially explore participant reasoning (motivations) and as findings will show, topical contextual factors, i.e. COVID and climate change were also factors, but to a lesser degree. The GWTWB questionnaire (QUAL & QUANT) PRE-activity section (Part A) informed this section, as did the participant interviews. See the approach to data analysis to the

GWTWB questionnaire (section 3.9) and approach to semi-structured interview analysis (section 3.10).

4.5.1 Motivations – findings from the GWTWB questionnaire

The GWTWB questionnaire collected data (QUAL & QUANT) from participants PRE-activity to better understand participant’s motivations for getting involved (see section 3.9). The quantitative data was collected from the Five Ways to Wellbeing spidergraph, which asked:

Indicate on the star below what is important to you about taking part in activities today: to do physical activity; connect with other people; feel closer to nature; learn something new; give back into the community (each scale of 1-10) (QUANT)

The qualitative data collected was in response to the following question:

Please take a moment to think about why you want to take part in activities today (open-ended question) (QUAL)

4.5.1.1 GWTWB quantitative findings

The mean scores across attributes were examined to seek any significant patterns across the datasets. The attributes examined are gender, age and pathway to activities. Nationality and ethnicity have not been used since the figures beyond ‘British’ nationality ‘white’ ethnicity were too small to produce anything meaningful.

Table 4-2 and Figure 27 below show the mean scores from each of the scales relating to each of the Five Ways to Wellbeing.

Table 4-2. Mean (standard deviation) of 5 ways pre-activity scores by gender

PRE 5 Way to Wellbeing	N	Mean (standard deviation)		
		All	Female (N=172)	Male (N=156)
PRE 1-10 scale Physical Activity	328	7.4 (2.10)	7.5	7.3
PRE 1-10 scale Feel connected to others	332	7.1 (2.10)	7.3	6.8
PRE 1-10 scale Take Notice of nature	328	8.2 (2.01)	8.4	8.0
PRE 1-10 scale Learn & develop skills	326	6.8 (2.47)	7	6.5
PRE 1-10 scale Give something back	329	8.5 (1.75)	8.6	8.3



Figure 27. Spidergraph showing mean scores for ALL, Female & Male PRE-activity based on Five Ways to Wellbein

The figures in Table 4-2 and spidergraphs in Figure 27 show that although the mean score for females was very similar to the male scores. Wanting to ‘give back’ to the community scored the highest (mean score = 8.47), followed by an opportunity to be close to nature (mean score = 8.22). The lowest mean score (6.78) was the action relating to learning new skills.

Table 4-3. PRE activity Mean scores by pathway based on Five Ways to Wellbeing

Personal pathway	N	PRE 1-10 scale Physical Activity	PRE 1-10 scale Feel connected to others	PRE 1-10 scale Take Notice of nature	PRE 1-10 scale Learn & develop skills	PRE 1-10 scale Give something back
Employment prospects	15	7.40	6.20	9.27	8.93	7.87
Improve health	4	9.00	8.33	10.00	8.50	10.00
Corporate group	169	7.33	7.16	8.08	6.48	8.53
Just to take part	142	7.52	7.03	8.24	6.87	8.45
Total	330	7.43	7.07	8.22	6.78	8.47

Table 4-3 and Figure 28 show that by pathway the mean scores follow a similar pattern in that giving something back and being with nature have a relatively higher mean score than other Ways to Wellbeing. Those on a health pathway appear to score most actions higher, however the sample size for this pathway is much smaller than other pathways (1.1%, n=4) which will show disproportionate scores.

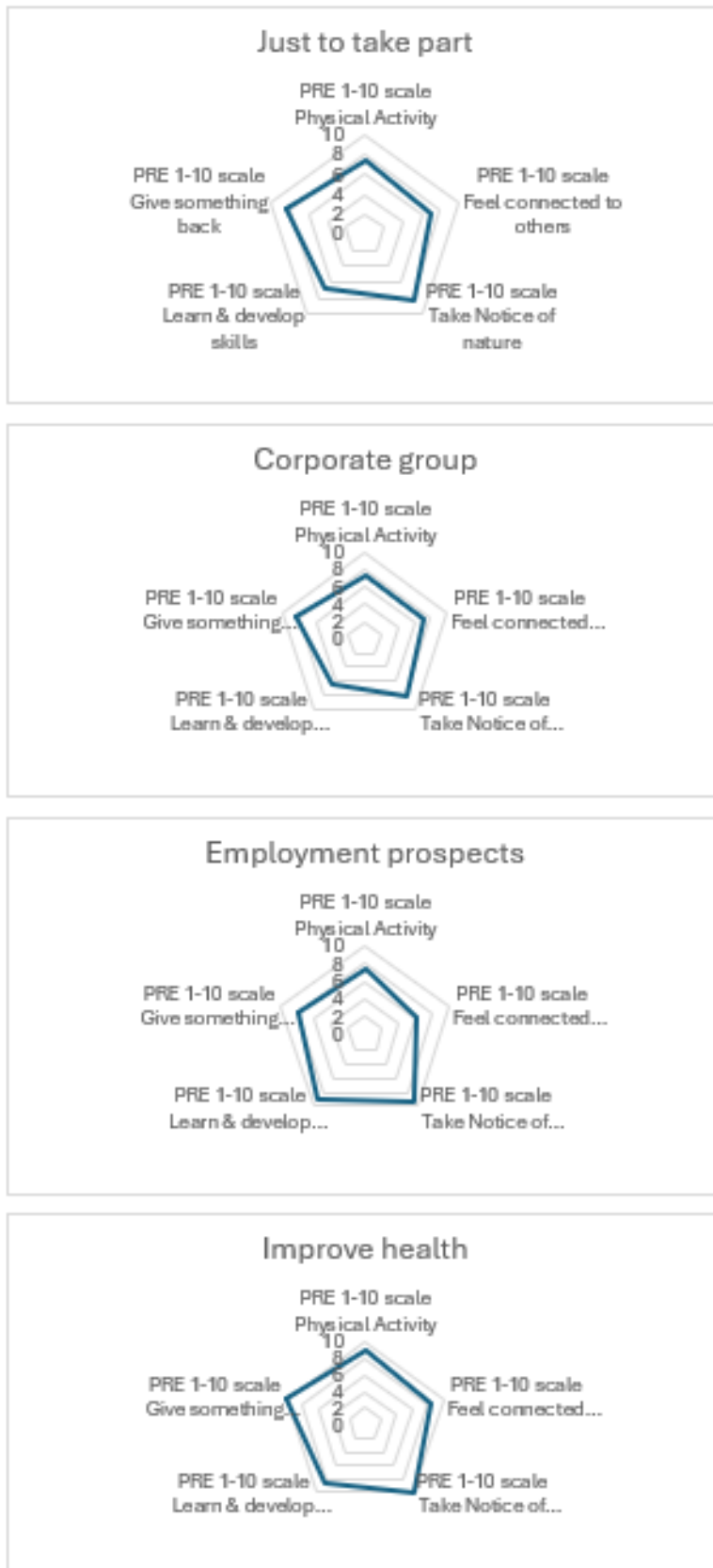


Figure 28. PRE activity mean scores by pathway based on Five Ways to Wellbeing

Table 4-4. Results from a Spearman rank correlation analysis between PRE activity motivations using Five Ways to Wellbeing and age

Spearman Correlations						
	Age range	PRE 1-10 scale Physical Activity	PRE 1-10 scale Feel connected to others	PRE 1-10 scale Take Notice of nature	PRE 1-10 scale Learn & develop skills	PRE 1-10 scale Give something back
Correlation Coefficient	1.000	.150**	.154**	0.053	0.081	0.075
Sig. (2-tailed)		0.007	0.005	0.339	0.148	0.179
N	351	325	328	324	321	326
**. Correlation is significant at the 0.01 level (2-tailed).						

Table 4-4 shows the results from a Spearman rank correlation analysis which indicates there was a weak but positive and significant correlation between wanting to undertake physical activity with increased age. Similarly, there was a weak but positive and significant correlation between seeking a connection with others and increased age.

4.5.1.2 GWTWB - qualitative findings

Using NVivo the qualitative data were coded to the pre-identified Five Ways to Wellbeing (Aked et al, 2008) (see 3.9.1). Through qualitative data analysis new additional themes emerged: *‘help to look after & nurture the space’*; *‘concerned about planet or climate’*; *‘for my wellbeing’*; *‘to do something worthwhile’*. Figure 29 shows that overall, there was a trend towards the three most referenced themes, which were wanting to *‘give something back’* (27% of total references; n=183), *‘help to look after & nurture the space’* (24% total references, n=163) and *‘spend time in the outdoors in nature’* (21% total references; n=146), see Figure 30 showing the highest weighted themes highlighted in yellow. There was a fairly even split across the number of references between gender and pathways and ages (see Appendix K GWTWB Qualitative references PRE-activity) .

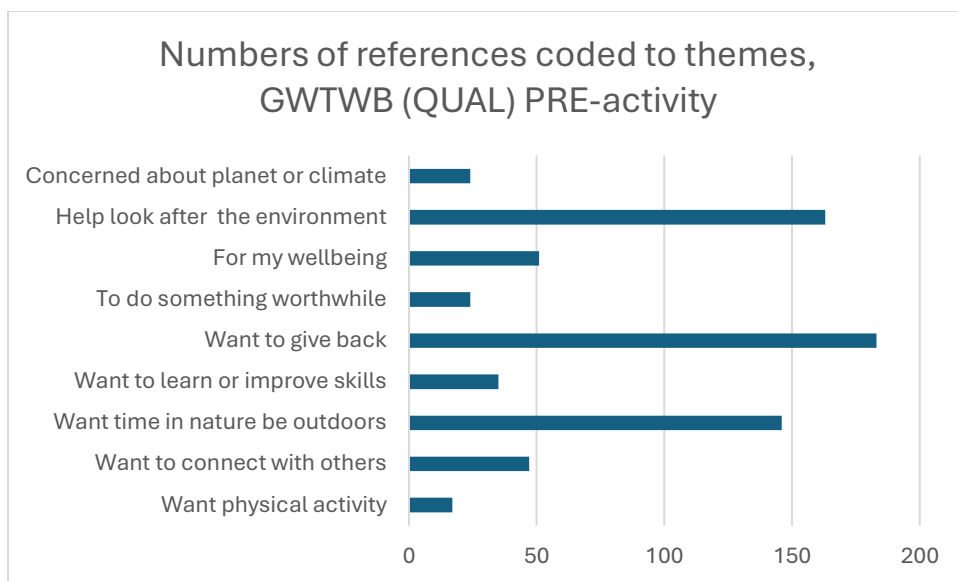


Figure 29 Bar chart showing the numbers of references coded to themes from GWTWB open-ended question PRE-activity

THEME n=total references coded to theme % of total references coded to theme	•Example quotes coded to theme (the number indicates the identifier number)
Want to 'Give Back' n=183 27%	•0009 - To help the community •0011 - To give back to the community •0016 - To help with the local community and give back
Want to help look after and nurture the space n=163 24%	•0301 - To help look after the environment •0300 - To help with maintenance of the space •0310 - Look after place and make it better
Want time outdoors in nature n=146 21%	•0278 - Fresh air and nature •0304 - I enjoy being outside. I like to go out walking in nice surroundings so its good to be part of it
For my wellbeing n=51 7%	•0072 - To increase health and wellbeing •0020 - Wellbeing and look after the environment •0095 - Day away from laptop (honest)
Want to connect with others n=47 7%	•0021 - Bond with colleagues and enjoy the outdoors •0032 - Good for the environment and team building •0041 - Get to know colleagues
Want to learn or develop skills n=35 5%	•0004 - Want to learn more conservation techniques •0006 - Tree management and to learn new skills •0035 - Benefit from being outdoors and learn a new skill
Want to do something worthwhile n=24 3%	•009 - To do something fulfilling •0140 - To take part in something good and worthwhile •0203 - Take part in something good
Concerned about the planet or climate change n=24 3%	•0091 - To help the planet •0085 - Climate change •0299 - To improve air quality
Want to do some physical activity n=17 2%	•0041 - Do some exercise in the outdoors •0142 - Exercise and fresh air

Figure 30 A visual representation of weight of qualitative references from the GWTWB questionnaire open-ended question

Figure 30 provides a visual representation of how the references were weighted in relation to being coded to themes. The top three highlighted themes '*give something back*', '*help to look after & nurture the space*' and '*spend time in the outdoors in nature*' represent the most expressions for why participants were taking part in the session today. '*Spend time in the outdoors in nature*' is an expected response and this may reflect reasoning and rationale for involvement but also the expectation since this is a contextual factor for the activities themselves. '*Give something back*' on the one hand is to be expected as those on a corporate pathway have been given paid work time to 'put something back' into the community as part of the ESG agenda. However, the qualitative expressions on this theme were evenly split across different pathways therefore this suggests that this sentiment is strong and not just related to those on a corporate pathway. The theme '*help to look after & nurture the space*' emerged through repeated qualitative expressions that described how participants wanted to 'help look after the environment' and help look after and maintain the spaces. The number of references to this theme demonstrates that this is a powerful factor in relation to rationale and reasoning. That participation in activities supports the concept of participants as 'custodians' of the landscape.

Other themes included '*for my wellbeing*' whereby participants expressed references (n=51, 7% total references) to want to undertake activities in nature (sometimes expressed as 'the outdoors') because of a perceived awareness of this being a good thing for mental health. This was nuanced by descriptions of wanting to gain some 'headspace', escape from the daily grind, escape from technology and wanting to do something fun or enjoyable. This was particularly so for the corporate pathway who referenced (n=30) their wellbeing as a driver compared to other pathway groups.

'*Wanting to connect with others*' was described by participants for example, as wanting to get to know colleagues, meet new people, spend time with family members. '*Want to learn or develop skills*' incorporated comments such as "*Want to learn more conservation techniques*" – 0004 and "*Benefit from being outdoors and learn a new skill*" – 0035. Participants expressed that they wanted to do something worthwhile and take part in 'something good' which was coded to '*Want to do something worthwhile*' (n=24; 3% total references). The least referenced theme was one of the Five Ways to

Wellbeing, was wanting to do something physically active, which made up only 2% (n=17) of the total number of references. The references are in response to an open-ended question therefore this does not necessarily indicate that physical activity was not important as it was still expressed by a few. However, relative to the top three themes (see Figure 30) it would not appear to be as strong a driver overall by comparison.

4.5.2 Motivation insights from the semi-structured interviews & focus group

Semi-structured interviews (cohorts 2-4) revealed there were a number of influencing factors that participants described as being a draw towards their respective pathways to the activities. Participants were asked to think about their original motivation and expectation for being involved in activities. These varied by participant. For example, participants described the influencing factors linked to their motivations as ranging from: an awareness of improved wellbeing from being in nature (n=2); a keen interest in horticulture nurtured from their own garden (n=2); not having a garden of their own (n=3); keeping physically active (n=1); feeling part of the community (n=1); fixing spaces in their community (n=2); their own heritage and upbringing (n=2); (self-perceived) prestige from being associated with an organisation (n=2).

Further insight into participant motivations was further revealed as they described their pathways to activities and this is covered in detail in the next section.

4.5.3 Motivations - climate emergency and biodiversity crisis

Qualitative data from the GWTWB questionnaire showed that there were a relatively small number of cases (n=24, 3% total number of references) that mentioned wanting to help the planet for example by tackling climate change, or efforts to reach net zero carbon, or improve air quality, with the younger age range, 18-30, referencing this theme the most.

The context of the climate emergency and biodiversity crisis was not mentioned at all by any of the participant interviewees in the first round of interviews (n=5). Wanting to explore this further in the second round of interviews and in line with best practice realist evaluations (Ramesesproject, 2021), this was addressed in the second round of

interviews, where these subjects were prompted (if the subject had not come through organically). In the second round of interviews some of the younger participants (18-30 yrs) would mention climate change unprompted. Those that were prompted on the subject of climate change, did make the connection, but the connection was not always made immediately:

Yeah, it was definitely, I definitely made the connection
(Emily - participant)

Yeah, I mean yeah but not immediately, I know that's why, that, at the end of the day I
kind of know it.
(Kat - participant)

And for some, for example, Kat - participant, climate change was not a driver to get involved in activities:

so it's always there but like for me, like I say again selfishly, no, that's not why I'm
immediately doing it but like I appreciate that it adds to that if that makes sense, so it so
on my mind but not ..
(Kat - participant)

These examples illustrate that there was cognisance of the urgency of climate change but questions over its influence as a key driver for participation. For example Kat – participant makes an interesting point as she ponders whether people take part for ‘selfish’ reasons rather than the planet. One participant described a debate during the session on whether the activities they were undertaking would indeed make any difference:

I think there was in all honesty, there was a few discussions on the day about it because
erm, you know, a couple of people said, “not to be cynical”, they said, “but are these
trees gonna change the climate
(Sally - participant)

There were some unprompted responses from participants on the topic of climate change. For a small number (Laura - participant, Sally - participant, Georgia - participant) climate change was a driver, and in their opinion some of their corporate volunteer team too:

*You feel like right now the world is burning and if you can contribute in any way
whatsoever*

(Laura - participant)

*It's sometimes really difficult in your life to see that you're making an impact, you
know..we were quite aware on that day that we are making a positive impact.*

(Sally - participant)

*but there's the element of this is doing good for our planet and this is doing good for our
city. So I think it's from that if any of that makes sense?*

(Georgia - participant)

One participant explained that she is conscious of climate change, but she struggles with always doing what is perceived to be the right thing to do, (gives example of drinking out of plastic).

*Not everyone is as passionate about it but like obviously, you know, you're thinking
about your kids' kids and down the line and you can see global warming's really
affecting the planet,*

(Kat - participant).

Practitioners working in the context of climate change and nature recovery were well aware of the links between nature, climate change and human health:

you know, you can't, you can't tackle one in isolation without trying to tackle the other.

(Cathy - Gov practitioner)

One practitioner thought that taking part in activities could be a potential strategy to cope with eco-anxiety:

Because people often in activism get very burnt out if they're trying to, to solve everything themselves and actually that's part of what green prescribing I guess can do is give you a container in which you can hopefully feel nourished and also take action.

(Abbie - MH practitioner)

However, the reality and complexity of weaving in the topic of climate change into practice was debated by practitioners. Points of view ranged, from the topic being a barrier (Cathy - Gov practitioner), through to examples of previously addressing the topic using carbon calculations as part of the engagement experience resulting in figures which seemed insignificant, and therefore difficult to interpret any impact (Matt - Env practitioner).

straight off the bat, that's not what they're coming for, not even what they're thinking about but I think that's lack of knowledge and lack of education

(Sienna - Env practitioner)

However, there were points of view shared (Tom - Gov practitioner) that participation should match people's needs, not necessarily the agenda:

but, you know, climate change is very much in the news and prevalent which relates to nature which relates to people's relationships in nature in their local doorstep, and if they don't feel as though, if their mental health is poor or they're struggling and they're wanting to or they're feeling isolated and they're wanting to find belonging through that activity,

(Tom - Gov practitioner)

About these issues, definitely because everyone's just going about their busy lives, just cost of living crisis, everything, just trying to survive basically

(Sienna - Env practitioner)

In summary, climate change and biodiversity did not appear to be a key motivational driver for most participant interviewees. The connection between making improvements to greenspace in order to help mitigate and adapt to climate change or improve biodiversity specifically, was not either not cognisant or an important key driver for participation by participants. Practitioners did not contradict this finding, but views were mixed as to whether the climate and nature emergency narratives would enhance the wellbeing experience, ranging from creating a barrier to coping with climate anxiety.

4.5.4 Motivations - COVID

The first round of interviews took place (on-line) during 2020 when the country was experiencing periods of strict lockdown. The subject of COVID understandably came up during interviews in that period of the pandemic, but the aftershocks of COVID were evident during interviews that took place in 2023 and 2024. Any discussion on the subject of COVID and a reported relationship with nature came about unprompted during all of the interviews, therefore it forms part of the context relevant to this study. Findings illustrated the impact of COVID, for example, there was a sense of frustration and sometimes shock by participants interviewed during the lockdown period (n=6) that their involvement in activities had to be paused or restricted:

One thing obviously over the last few months that we've not touched on is the effect of covid.

(Jack - participant)

I genuinely missed being in the back in.. because every day's a school day it was brilliant we had a little peek round last week and it was just like a breath of fresh air yeah lovely

(Anne - participant)

a shock to not get up and running but unfortunately the virus has come at the same time hasn't it.

(Jack - participant)

Well, I think an illustration of that is because of in when we were in the first phases of lockdown and we weren't allowed to go outside, we had no gardening group on a Saturday.

(Ruth - participant)

There was a sense of loss expressed at not being able to see the usual people they mixed with during activities due to COVID lockdowns. Arguably, this was part of the general tide experienced by most during this time, feeling isolated from friends and family. However, participants expressed a sense of loss not being able to connect with others and keeping physically active through their activities, and looked for strategies to keep in touch with others and maintain physical activity lost through not being able to participate. Participants expressed how connections to volunteering and places where they volunteered helped them cope during lockdown:

Also on a personal level, you know, when you're self isolating and on your own and whatever going into the woods its uplifting and beneficial and whatever so that is a good aspect you know

(Jack - participant)

One participant cited her involvement in civic environmental activities providing resilience compared to her perceived husband's resilience (who she had stated didn't get involved in activities):

It makes you resilient I think what it does is it's like everything else isn't to be the fewer of those pillars that you have. The less resilient you are, the less able to be able to cope when things go wrong. So, for example, in covid me, my husband doesn't cope wonderfully well in Covid. And, you know, he he recognises just he just worries for the sake of worry.

(Ruth - participant)

Participants continued to want to 'give back', through sense of ownership and facilitator of their spaces or activities:

We've noticed a massive increase in people coming into the woods..... which is brilliant the downside is sometimes they're not as respectful of the area as all the people are

we've had more vandalism and litter but hopefully ongoing some of those people will come back or continue to come and will benefit that way.

(Jack - participant)

we've got covid this year, we can't get into schools to kind of highlight about the polio and to take crocuses so I've made up bags and gifted to all of our local schools

(Ruth - participant).

The lockdown and restricted time outdoors rekindled an appreciation of being outdoors and nature, taking notice and increased awareness of the outdoor resources they had:

It forced us outdoors, like I had never done as many walks in my life, I'd never explored some of the areas near me until then.

(Sally - participant)

Having somewhere where you can get outside and you can do things has been absolutely, totally invaluable. It really has.

(Ruth - participant)

Participants interviewed post-pandemic described the COVID pandemic as being a pivotal moment, which was illustrated in two ways. Firstly, an increased awareness of mental health issues and how accessing nature can support mental health and wellbeing, and therefore a desire to undertake activities for this reason. Secondly, a change to working practices, working from home and having a desire to meet people in nature in the outdoors to re-connect with others to manage a sense of isolation through home working. For example, Laura – participant, describes ways in which her working environment changed which led to seeking opportunities for social connections in the workplace, coupled with an awareness of spending time in natural environments being a good thing for mental health:

Then COVID hit, our o-office closed erm, within the COVID er, lockdown period we had erm, we started to establish more formality and adopt a global process which is a team

group called Give Back... And it was really important to have opportunities where we could all get together still without having an office.

(Laura - participant)

In the quotes below, participants (Laura - participant & Sally - participant), describe how experiencing the Covid lockdowns changed behaviour patterns in relation to experiencing the outdoors which has drawn participants from the corporate setting to want to do outdoor activities:

They're not doing what they did in COVID of going out for a nice walk. But when I send these out I say, "Hey, does anybody want to do this?" the, the ones that see it as a mental health thing as well are always the ones, the consistent ones that are always coming because they know it's two hours, three hours, four hours, whatever blocked in their calendar that they're going out, they're stepping away from their desk.

(Laura - participant)

I also think, you probably agree, COVID played a big part?

(Sally - participant)

The desire to spend time outdoors and in nature during and post-COVID pandemic was reflected in the practitioner perspectives who felt the impact through increased numbers of people wanting to attend activities:

But I think with lockdown though it has changed and we've been getting a lot more referrals with more more needs. Yeah.

(Lucy - MH Practitioner)

4.5.5 Motivations - summary

The quantitative analysis began by looking at mean scores by attribute relating to the Five Ways to Wellbeing. Overall in relation to the mean scores there was little difference between female and male participants. A desire to want to 'give back' to the wider community and spend time with nature had the highest mean scores across both

genders, and pathways. A Spearman correlation was found with age in terms sense of wanting to connect with others and physical activity.

Overall, wanting to 'give back' to the community may well have scored high because of the high number of corporate participants who are given time out of work to do something worthwhile 'for the community'. Overall, the relatively higher score in relation to being closer to nature could be because the activity takes place in the outdoors, in natural environment, and this type of environment would have been the expectation upon taking part. Further investigation was sought through the interrogation of the qualitative data.

The qualitative data taken from the GWTWB open-ended question gave similar results to support the quantitative data findings. For example, the highest expressed motivational factors were coded to wanting to 'give back' to the community and spend some time in nature, across both genders and all pathways with an emphasis on younger age ranges 18-25. This was also expressed as wanting to 'help the environment' whether this be locally or globally is unclear. Some corporate and younger participants being driven by wanting to do something to nurture or preserve the planet however this was relatively small. A sense of wanting to do something worthwhile and purposeful was strong.

A richer understanding of participant motivations can be gleaned from the qualitative data (cohorts 2-4). Participant interviewees expressed a range of reasons as to how and why they were initially drawn to the pathways that led them to take part in activities. Motivations to get involved in activities varied and although it was not explicitly discussed during the initial section of the interviews, some motivations align with the Five Ways to Wellbeing (Aked et al., 2008). For example, the context for participation for some included keeping active, connecting to others, seeking a connection with nature for wellbeing. Some areas of motivation did not fit within the Five Ways to Wellbeing framework, such as factors relating to one's own heritage and upbringing, or being drawn to the prestige of an organisation. The context of climate change and nature recovery were discussed less and not at all, respectively. The corporate participant interviewees were the only cohort to discuss climate change and they grappled with this context being either directly linked as a driver behind their motivation

to take part, or it being too tenuous to be making a difference, or a perception that more ‘selfish’ motivations influenced motivations for participation.

4.6 Point 6 – Pathways to the activities

Successful pathways to engagement is an assumption within the programme theory model and therefore is an important factor in the context to support causal mechanisms. In other words, the pathways form the route by which participants take part in activities, therefore the pathways need to exist and function accordingly. From a practitioner perspective this relies on a communication and engagement plan as well as other virtual infrastructure (partnerships, networks, connections) to link to organisations, groups and individuals. This section draws on both participant and practitioner perspectives. Beginning with participant’s perspectives on their personal pathways to activities, next the practitioner perspectives will be addressed, finally leading to perspectives on the green social prescribing pathway.

4.6.1 GWTWB Participant personal pathways

Findings from the GWTWB questionnaires (cohort 1; n=357), showed that most participants pathways were either ‘just to take part’ (n=160) or the corporate route (n=178) and only a small number coming through specifically to improve ‘employment prospects’ (n=15), with an even smaller number through a health-related initiative pathway (n=4). It is highly feasible however, that there is crossover in relation to pathway, for example, some corporate participants could have been, for example, a local resident and/or looking to gain experience in environmental activities to enhance career prospects but chose ‘corporate pathway’ in response to the questionnaire as it felt a better fit in the context of that time. See Figure 31 pathways chart.

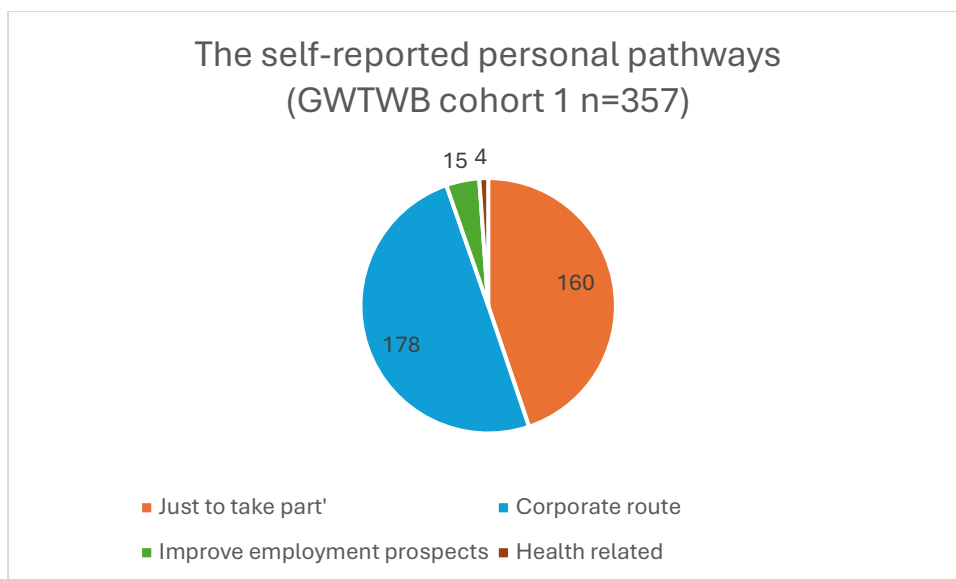


Figure 31 Numbers of participants of self-reported personal pathways from GWTWB questionnaire (cohort 1)

4.6.2 Pathways – insights from the semi-structured interviews

The pathways into the activities varied across the participant interviewees (cohorts 2-4). All interviewees were categorised into a cohort based on how they described their initial involvement, e.g. local resident, corporate pathway, rehabilitation pathway (see section 3.8.3).

4.6.2.1 Local resident's pathway

Participant interviewees who described themselves as local residents (cohort 2; n=5) to the location of the activities described how and why they got involved in their local spaces, sometimes by joining a local Friends of.. group (n=3). Their motivations varied from having more time on their hands and wanting to improve their local greenspace, having a personal connection to a place through their own childhood or family heritage, moving to an area and wanting to meet people. One participant illustrates the sporadic ways in which people get involved in activities.

And I joined for completely nothing to do with trees. I have an interest in early education and early communication so I have a charity that I run where we give books to children linked with Dolly Parton. And that's how I kind of got involved with Rotary.

(Ruth - participant)

This participant went on to explain how a Rotary club campaign to highlight polio by planting thousands of crocuses across Salford, then led onto joining local Friends Group. This illustrates how personal pathways can intersect across different pathways, leading to deeper or sustained involvement in activities.

4.6.2.2 Corporate pathway

Participant interviewees who described how they had come through the corporate pathway (cohort 3; n=5) were enabled by schemes that allow time of work to volunteer, or 'put something back' into the community as part of Environmental Social and Governance (ESG) agenda. Some corporate participant interviewees (n=3) had played a role of facilitator for others to attend the activities, as they had an interest in sustainability, or this was part of their job role. The premise for the corporate pathway is that participants are participating through work but have individually chosen to undertake nature-based volunteering. Participants describe being drawn to the activity because they wanted to get outdoors and away from the office or home working environment or wanting to try something new. There was a sense of the corporate pathway being a safe place to try something new, with peers all doing the same thing, as highlighted by participant Laura - participant:

I guess it's, it's going out of your comfort zone and trying something new, it's not necessarily, it's, it's not necessarily something that I would have done, you, you know, it, it just isn't, it's not something that I would have ever thought of doing and going and seeing if there's somewhere that I could tree plant and maintenance and what not. So it's kind of and that's really good for your – I don't know if it's mental health but it's good for you personally, isn't it? to always push yourself, try new things, opens new .. area, you know
(Laura - participant)

4.6.2.3 Rehabilitation pathway

There were participant interviewees (cohort 4; n=3) who had come through a rehabilitation, health focused route. Their pathway was via an organisation that specialises in providing support to those who experience disadvantage through having mental health and/or addiction problems. The organisation provides therapeutic and

vocational rehabilitation opportunities. Participants had taken part in activities as a result of a partnership between their supporting organisation and an environmental organisation to do something outdoors in nature.

4.6.2.4 Pathways to continued activity

The more interested you become, the more interested you become.

(Ruth - participant)

Participants described how their original pathway led to continued interest through participation, wanting to want to learn more, and do more, in some instances, exploring new pathways to further activities hosted by other organisations. Sometimes inspired to take action to do other 'good things':

"Oh, look at them out in the fresh air, and I've been in my office so I'm going to make sure I'm going to go for a walk at lunchtime tomorrow." Or it could be, "Look at them doing something, yeah, I'm going to go and give blood next week," that kind of thing ..

(Laura - participant)

There were other examples of continuity where people's experiences had prompted them to undertake further activities independently:

So I mean for me it, it has changed that and it's given me a bit more kind of confidence just to .. do the smaller things like litter pick 'cause I would never have walked round a park with my dog litter picking, but I just do that sometimes now, you know, just because, because why not? Because it's kind of ingrained in your brain a little bit.

(Kat - participant)

And having the friends of Parbold Park has been a way where I can actually give something back to to the community. And then you get that feeling of ownership as well on being part of it. So you take a bit of pride in it. So you walk through the park and if you see litter, you pick it up. And if people see you picking it up then they think twice about dropping their own or they'll pick their own up. So that's that's really my motivation is to to make it a really pleasant place as best we can erm for our community.

(Ruth - participant)

In summary, understanding better participant personal pathways is an important aspect of the context. This insight gives an indication of how people are reaching activities, and some insight into their expectation and motivations for taking part. Interestingly, data from the GWTWB questionnaire shows that most participants have not come through any form of formal health route, i.e. formal social prescribing route. Participant interviewees on a formalised rehabilitation programme have accessed activities via a partnership between the environmental delivery agent and the organisation that sets out to support their wider needs. From a practitioner perspective this understanding is valuable as it can help to shape engagement and communications strategies for targeting specific audience groups and give an indication of the movement through formal social prescribing pathway. Further discussion on the findings relating to green social prescribing can be found further into this section.

4.6.3 Pathways practitioner perspectives

Practitioner perspectives from the semi-structured interviews reflected the discussion within the practitioner focus group.

4.6.3.1 Attendance and recruitment

A lot of effort went into supporting people to be introduced to activities or getting to the location of activities. At the focus group Mental Health practitioners expressed the significance of people feeling disappointed, even shameful, in themselves for not turning up or letting the service down and this having a detrimental impact on their mental health, something they wished to avoid. Transport and buddying systems were used as strategies but there was an acknowledgement that this was difficult to sustain, as MH practitioner interviewee, Abbie articulates:

You know, well, it's internalised shame, isn't it? we would never shame anyone but we know there's a lot of shame involved in non-attendance and trying to get through that.

(Abbie - MH practitioner)

4.6.3.2 Community challenges

Practitioners expressed the challenges of working with communities, highlighting the challenges of working in areas of high IMD, where it was harder to gain trust and get buy-in to activities because of other pressing life challenges associated with multiple deprivation, such as low income, unemployment, ill-health. These challenges were not helped by the short term nature of funding, as this practitioner interviewee, (Cathy - Gov practitioner), articulates:

*it's people with young kids, it's people who have like huge barriers to participation and it's when they're included, that's when we, that's when we get the social change so I think .. Like literally, two- like a lot of these DEFRA projects seem to be 18 months, h
how can you ..?*

(Cathy - Gov practitioner)

However, it was discussed that when disadvantaged communities and individuals did participate, it was felt that the outcomes were very impactful.

4.6.3.3 Signposting and moving on

'Signposting' and 'moving on' in this section refers to the awareness, intersection and connectivity between available pathways. For example, pathways to, from and between organisations offering activities or additional support. Practitioner interviewees described how some participants from a mental health pathway require additional support and a stepped approach to their pathway to activities (Abbie - MH practitioner, Rachel - MH practitioner)

*You're giving people the outreach opportunity and then the smaller interaction and then that pathway for moving people on into more sustained engagement generally occurs
across all kinds of activities, doesn't it?*

(Rachel - MH practitioner)

In summary, particularly mental health practitioners described the need for considerable additional support for those more vulnerable from external 3rd parties, or within their own organisation, in order to encourage participation in activities and

services. This would indicate a high level of resource in order to support those who are vulnerable or seeking rehabilitation.

4.6.4 The Green Social Prescribing Pathway

Green Social Prescribing (GSP) has been introduced and discussed in Chapter 1. The pathway most discussed by practitioner interviewees was GSP. This became a key theme from the practitioner interview and focus group analysis. However, notably this theme was not apparent in the participant interviewee sample and of the GWTWB questionnaires (n=357), only a very small number (n=4) described coming through a specific health pathway, whether this was through GSP is unknown. However, it may be possible that participants had been formally 'socially prescribed' and chose not to stipulate this.

There were sub-themes that emerged from practitioner interviews on the key theme of GSP. For example, issues relating to perceptions of GSP, the types of activities deemed appropriate for GSP and how this is framed in the wider sphere of engaging communities and individuals in civic environmental activities. GSP terminology and the relationship to funding and how that can shape how activities are delivered were key points of discussion. Similarly relationships with GPs and GSP link workers and the recruitment of participants.

The sub-themes from the practitioner interviews and practitioner focus group are discussed next. Each subtheme has subsections to help narrate the complexities of GSP as a key part of the pathway context:

4.6.4.1 Sub-theme 1: Perceptions of GSP

The context of GSP is interesting in how it is perceived amongst practitioners, particularly in the broader context of community engagement.

4.6.4.2 Nature based activities are not new

The first point of note is that all practitioners supported the view that they had been running activities for health and wellbeing outcomes for years, therefore, the notion of nature-based activities for health and wellbeing existed well before the GSP movement.

Yeah, so we've always done it as a social prescription pilot from 2019, erm, well before 2019, even when we started Grow so from when I started, so we're talking about 2014 really, 2015

(Sienna - Env practitioner)

4.6.4.3 Perceptions on what is 'GSP type' activities are and how they are delivered

The way in which GSP 'type' activities were described by some practitioners that GSP 'type' activities had to be somehow 'different' in order to be appropriate for GSP. This was the subject of debate in the practitioner focus group:

It's, so this is the midweek group is not, is our volunteering programme that is not set up, it's not specifically designed to support people's mental health, it's an open volunteering programme, but we obviously want to support as many people as possible into that.

(Nina - Env practitioner)

and so many things that I would not think is green social prescribing badged under green social prescribing,

(Cathy - Gov practitioner)

There were mixed views on what constitutes 'GSP-type' activities. Here a participant articulates the view that GSP has a specific format, of running over the course of a set number of weeks. This type of format (of running sessions as a 'course' or 'course of treatment' over a number of weeks) is usually stipulated by the funder of activities specifically for health, rather than a preferred delivery model set by the delivery organisation. Funding is discussed in more detail in the next section 'Point 5 – Resources', however, the point here is an example of a funder projecting parameters onto programmes, therefore influencing perceptions of the structure of programmes of activities:

I think it's slightly different for formal .. social prescribing really because those tend to run as a set, set number of weeks don't they and they're sort of more formal, with the beginning and end whereas actually, maybe, maybe the two are parallel, like regular

volunteering and actually that's somewhere for someone who's done a 12 week, if it's a 12 week intervention, like to be referred onto, you know? But, but the regular drop-in sessions will be more, as long as they're the same time each time, you know, people can drop in and out of them and fit in with their lives.

(Cathy - Gov practitioner)

The environmental practitioner interviewee (Matt - Env practitioner) describes how the activities are framed and how they are influenced by funders:

But the erm, yeah we er, we, we tended to sort of call things er, ecotherapy or erm, yeah or kind of Nature for Wellbeing, that's kind of how we described it

(Matt - Env practitioner)

But there was also a sense by other practitioners (such as Nina - Env practitioner) that running activities for improved wellbeing should not be restricted to GSP label, as this might hinder accessibility and appeal of activities:

..for, the people that have been accessing volunteering, environmental volunteering it is, we already know it's improving their wellbeing but erm, there wasn't as many barriers for them to join as some of the people. That we want, we want nature to be accessible to everybody that could benefit.

(Nina - Env practitioner)

One practitioner (Tom - Gov practitioner), during the practitioner focus group described the need for a rich and varied approach and not categorising people into types of activities, highlighting the need to break down silos and instead create a rich mosaic of flexible offers that allows participants to decide what suits their desires and needs. Rather than it being dictated to by health or environmental staff, for example:

Erm, and I, I just want to reiterate that point where we have a very fixed, silo working, where actually, "Oh, I'm going to, you're going to have GSP and you're going to do creative health," in no other way do we put a human brain down into, "Well you like that, so we'll shove you in that room,"

(Tom - Gov practitioner)

4.6.5 Sub-theme 2: GSP terminology

As discussed in Chapter 1, Social Prescribing is an approach that connects people to activities via trusted professionals, therefore GSP in its truest sense it is a pathway or approach and not a definition of activities. This section will highlight how terminology used to describe a pathway, is being used to describe – and influence – activities and how they are delivered.

There were mixed views between practitioners about the definition of GSP is and its terminology. The following quote is interesting and highlights how symptomatic the use of GSP terminology is in becoming the main discourse, moving away from ‘business-as-usual’ activities to a more medicalised description of the same thing. The environmental practitioner interviewee begins by describing the activities his organisation runs as being ‘green social prescribing’ but then reminds himself that GSP is a pathway rather than the activities themselves. The interviewee goes on to say activities and sessions are not any different under GSP it’s just the terminology has changed.

previously, we would just call our activities kind of .. erm .. you know.. it’s a pathway, it’s like a, it’s a referral sort of system rather than the actual erm .. support that people get, it’s just a way of getting people that support isn’t it? So it’s like the, the link isn’t it rather than anything else.

(Matt - Env practitioner)

4.6.5.1 GSP terminology – mislabeled and overused

There was confusion about GSP terminology and the context in which it is used. There was common feedback from practitioners that GSP was a term that was over-used, to being used beyond the pathway itself, i.e. being socially prescribed by a third party (GP, link worker etc.), to describe the activities themselves. Although GSP is a relatively new defined pathway, the activities are not actually new at all. Frustrations over the misuse of the terminology were aired. Here are two examples:

Because I know like somebody er, [NAME REMOVED] who I really like at [A UNIVERSITY], she like will not use the words “green social prescribing” even that’s a term we use in

[GOVERNMENT ORGANISATION], you know [for her], it's always "nature based interventions"

(Cathy - Gov practitioner)

[it should be seen as] a pathway, it's like a, it's a referral sort of system rather than the actual erm .. support that people get, it's just a way of getting people that support isn't it? So it's like the, the link isn't it rather than anything else.

(Nina - Env practitioner)

Therefore this shows that there are frustrations over the use, and over-use of the term 'GSP' amongst practitioners and concerns this could create barriers to engagement.

4.6.5.2 GSP terminology creating barriers

Some practitioner interviewees described how the language and terminology associated with GSP could be a barrier to people coming through the GSP pathway because of the way some of the descriptors sounded clinical, and this may not be appealing:

I think of "service intervention", "client", all those words, like for me, like if I thought of those I pro- that would put me off and er, this is me as a punter, not me as a professional member of staff, erm, because you think "oh that's the sort of thing that Social Services organise isn't it?", you know?

(Cathy - Gov practitioner)

"nature based interventions", and erm .. you know, that, that's quite a wordy mouthful but like literally, if I wasn't in the sector, I wouldn't know what that meant, I mean you say the same about green social prescribing as well but I think .. so words are important about bringing people along the journey.

(Cathy - Gov practitioner)

Therefore, the way activities are advertised are important, and an awareness of opening up opportunities to the wider community, i.e. not just those formally channeled through a 'social prescription':

So whether you use the word "mental health" or you use the word "wellbeing" or whatever, erm, and so then I thought, "Well, what would be really nice is .. if you can open it up to self-referral", and then that's when I was very much around .. concentrated on the language I used around the programme and really just starting to say, "It can be for anybody who feels it will improve their wellbeing."

(Sienna - Env practitioner)

There were further challenges to the GSP pathway described that related to the social prescribing infrastructure itself.

4.6.6 Sub-theme 3: GSP infrastructure is unreliable as a pathway

Practitioner interviewees described challenges with general social prescribing infrastructure. For example, poor connections across the system infrastructure, perhaps due to a lack of communication between GP's and social prescribing link workers (this role is often confusingly called alternative names such as 'community connectors') who are then tasked with sign-posting individuals to activities - for which there may be a lack of awareness of. There was broad consensus amongst the practitioners (within the focus group and individual interviews) that the GSP pathway was unreliable, due to disconnection between GPs, link workers, participants, and the delivery agents (practitioners). In some instances, it worked well, and provided additional support to both participants and the delivery organisation:

do you see a difference from attendance where they're supported by link workers and other kind of social workers, you know, like you said, they, they can come along to help them support them there, get them there, make them feel comfortable and confident with it,

(Luke - Gov practitioner)

In other examples, the pathway did not seem supported by link workers and frustrations were aired around the role of link workers and GPs either through lack of contact or appreciation of the opportunities available. A call for better training for GPs to understand the benefits on offer:

And we never got one referral and they're on our doorstep and we're offering stuff for free so .. you know.

(Sienna - Env practitioner)

and you can see that disseminates down into actually GPs and primary care networks where they don't see the value in the nature connectedness and maybe see it as a nice, flowery thing that's add-on, when actually green social prescribing can actually be a huge cog in a very complex erm, case of treatment for individuals

(Tom - Gov practitioner)

because if we don't put education engagement then actually we, we can't actually support the people that most need it.

(Tom - Gov practitioner)

In summary, practitioners described different experiences regarding the success of receiving formal referrals. A successful referral seemed to need considerable additional support from link workers. A common experience was that the referral system was not successful in bringing forth participants to activities.

4.6.6.1 Diverting from the GSP pathway

What was apparent from the practitioner interviews was that the GSP pathway lacked consistency, perhaps to due weak communication between, GPs, link workers, participants and delivery agents or because link workers being overwhelmed with other pressing social-economic issues. Alternative ways to reach people 'in greater need' were proving to be more successful than the GSP pathway. The alternative ways to reach people involved going back to original outreach methods and practices:

I've found that more like actually the referral people are not necessarily [laughs] the best ones and you've just got to get out, you've got to let people know in the neighbourhood,
(Sienna - Env practitioner)

All practitioner interviewees agreed that a more successful route to reaching those in need was through their original outreach practices which included working in partnership with organisations with aligning aims. One example from Nina - Env practitioner suggested that:

Whereas actually a much bigger referral pathway that we've been successful with is erm, other VCSE sector organisations where people erm, might be a bit further on in their journey.
(Nina - Env practitioner)

In summary, the lack of reliability and consistency for the GSP pathway to bring forth participants has meant that practitioners are relying on other means to reach people, particularly of 'greater need' by working in partnership with organisations who specialise in supporting those in need, or resorting to their usual outreach practices.

4.6.6.2 The importance of 'self-referrals':

'Self-referral' is a term that has emerged with the social prescribing movement to describe people joining activities on their own volition, i.e. without being formally sign-posted. Interestingly there was much discussion around the issues and challenges surrounding GSP as told by practitioners and the importance of 'self-referrals' was agreed across the board. Practitioners aired the point that it does not matter if a participant is socially prescribed, or self-referred, the outcome is likely to be the same for that person:

One practitioner interviewee gave her own lived experience as an example:

So for me, it's like I know the benefits of that for my wellbeing, do you know what I mean? But it wasn't necessarily my doctor who told me

(Sienna - Env practitioner)

Whether that be through doing or a need or, or a want for something, at the end of the day the outcome is the same isn't it?

(Tom - Gov practitioner)

4.6.6.3 GSP falling out of favour

One practitioner describes purposefully disengaging from the GSP system, because in their experience it's become a closed-circuit scene, creating an arena for competition amongst practitioners for funding and even participants:

- I don't really talk about social prescribing or anything of that anymore because I just feel like we're kind of not part of that network in a way

(Sienna - Env practitioner)

In summary, from a practitioner perspective, on the whole the GSP pathway is not a reliable way of reaching out to participants, particularly those in most need. Therefore, more well-trodden pathways such as working in partnership, and reliance on participants attending of their own accord are seen as being more successful.

4.6.7 Summary of GSP pathway and sub-themes

This section summarises the GSP pathway and subthemes within. The findings in this section on GSP have come solely from the practitioner interviewees. GSP was a key theme that emerged from the analysis of the data from these interviews. The subject of GSP came about unprompted from the semi-structured interviews. This suggests that the matter of GSP and civic environmental activities specifically for health and well-being activities go hand-in-hand currently which is understandable. However, the two are not an easy marriage. GSP is riddled with issues from a practitioner perspective, from confused terminology (is it a pathway or activity type descriptor?), restricted and restrictive resources impacting the deliverability of activities and the dynamics between organisations. Interestingly, the most successful referral type reported by interviewees

were those that ‘self-referred’. Removing the GSP lens from the term ‘self-referral’, simply means, ‘taking part’. Individuals choosing to take part under their own determination.

4.7 Context summary

This Chapter discussed the breadth and depth of the contextual factors (C) that are significant enough to have an impact on the firing mechanism (M-O), to achieve the desired outcome, enhanced wellbeing for participants.

To understand better, ‘*what works for whom and why?*’ the context has been explored through both participant and practitioner perspectives using three data sets: the GWTWB questionnaire (QUANT-QUAL); Participant interviews (QUAL) (n=13); Practitioner interviews (QUAL) (n=11). Analysis and triangulation of data has created a rich and complex picture. The phenomena being multifaceted with a broad range of contextual factors that influence and impact, providing the ingredients for the mechanisms to operate and reach the desired outcome.

This Chapter was structured using 6 ‘points’, i.e. 6 key themes and associated sub-themes, which have been explored in detail with the aim of providing a narrative which explains the broad, dynamic and fragile nature of the context.

Point 1 covered findings relating to contextual factors relating to the physical space. Landowner permissions and access to land are essential for activities to take place and this could be tricky to navigate, even though the assumption would be that physical spaces could be improved through activities. For some but not all, having a deeper connection with nature could depend on how urban or rural the space may be perceived. A deeper connection with the space itself was aided by activities taking place in a consistent area, although a sense of having a deeper connection to Manchester was also evident in instances of activities of a roaming nature. A need to create a ‘safe’ space or environment was deemed important by mental health practitioners so people could give themselves permission to take part in something that may be deemed frivolous, lacking depth or importance. The space itself, i.e. the natural environment in the urban setting was integral to the context of activities for all participants, which is an assumption of the programme theory. The implication for this

being that access to land, and how people experience the landscape, is both fragile and subjective. Fragile because obtaining permission and access to land relies on 3rd party support which may be thwarted for many reasons including competing priorities of the landowner or other users, therefore it is not guaranteed that land will always be available and relied upon to run activities. How people experience land, landscapes, or types of greenspace (for example, deep urban to peri-urban to rural) is subjective, therefore the learning here is not to assume that the activities associated with specific environments or habitats are a 'one-size-fits-all' when it comes to therapeutic value.

This leads to the section 'Point 2 – The activities' which presented findings in relation to insight into participant's relationship with particular activity types (or tasks). What was interesting was that the task itself, for example, improving a path, clearing a pond, woodland maintenance was less important than the purpose and outcome from the said activities. Therefore, the activities themselves are not the firing mechanism, instead they form part of the context. In the example of this study, activities that take place in a natural setting to improve and look after public realm greenspace. This supports Pawson & Tilley's (1997) assertion of not falling for a common mistake within a realist evaluation of assuming that activities themselves are the firing mechanism.

'Point 3 – Funding' - this section addressed the importance and challenges around practitioner resources, namely funding, which still remains highly problematic when it comes to securing funds to deliver nature-based activities specifically for 'health' outcomes. Practitioners varied in their capacity to recognise the need to be creative in their funding efforts. The common factor was though that funding was essential to support activities taking place. Point 4 covered other resources, that being staff capacity and skills. There were mixed views around confidence levels in delivering nature based activities particularly for those with higher needs. Both practitioners and participants felt it was unfair to expect volunteers to take on too much responsibility particularly around overstepping the role of custodian of spaces and supporting other volunteers who may have varying degrees of needs. The implications for this again bring forth the importance of adequate and sustained resources to support staff training and capacity, the implications for not doing this leaves activity providers and arguably participants themselves vulnerable. The issues around funding bring to life

the significance of ‘Point 6 – Pathways’, for example assumptions and reliance on how GSP is conceptualised has material impact on how resources are deployed.

‘Point 5 – Participant motivations and influencing factors’ addressed participant motivations and although there were some minor discrepancies between gender age-range and pathway, the key motivations for wanting to take part was to do something that involved spending time in the natural environment that was *meaningful* that would make a difference to the space itself and the wider community. A greater understanding of participant motivations to take part in activities is crucial in relation to targeting engagement, addressing specific needs and supporting behaviour change. The need to create greener, resilient landscapes in the context of climate change and how that might relate to personal wellbeing was mentioned as a driver by few, those that did were younger in ages range. Arguably therefore, there is scope to develop the awareness between the significance of activities on climate change further in practice. The contextual unexpected curveball, COVID, was not identified in the original programme theory which was devised pre-pandemic. It would appear that COVID and the associated lockdown periods have left a trail of both enlightenment, love, appreciation and awareness of wellbeing benefits of natural spaces in the urban setting, along with a change in work practices, people working from home feeling isolated from people and the environment. A greater awareness and longing to spend time undertaking activities in the outdoors has fueled for some a greater demand to take part in activities. This has positive implications from a public health and environmental perspective. However, opportunities will be missed to capitalise on this relatively new interest if practitioner and funder perceptions on pathways are too exclusive to the GSP pathway in particular. This links to ‘Point 6 – Pathways to activities’ - how participants are drawn to and access pathways to activities. Data from this study would suggest that the vast majority of participants are deciding to take part in activities through their own accord or through an existing initiative via their corporate employer (rather than being formally ‘sign-posted’ or prescribed). Practitioners discussed in detail the challenges to the more formal pathway, GSP, which interestingly still remains a concept for practitioners rather than participants. The implications for this are not insignificant given the traction that GSP has in relation to influencing

engagement practices largely through assumptions by practitioners and funders as to what GSP is or ought to be.

Overall, the contextual picture is complex, the interaction between different players - participants and practitioners – operating on different levels but interacting in a dynamic and multifaceted way in order to achieve desired outcomes. Therefore, the rationale for bringing together, triangulating both participant and practitioner perspectives has been well justified.

4.8 Context as Reasoning + Resource

One final note before moving on to the next Chapter, is to return to one of the key concepts in a realist evaluation, that of 'Reasoning + Resource = Mechanism' (Pawson & Tilley, 1997) the sentence or 'equation' which was introduced in Chapter 1.

The themes outlined in this Chapter have been categorised accordingly in Figure 32 which aims to illustrate how the context themes align with the equation 'Reasoning + Resource = Mechanism'. As Figure 32 shows under the umbrella of 'Context' the 'Reasoning' attributes include participant motivations and chosen pathways and COVID influencing the reasoning and rationale for participation. 'Resources', i.e. access to land, activities, funding, capacity and skills, also form part of the broader 'Context'. It is the interaction between 'Reasoning' and 'Resource' which leads to the success of 'Mechanisms' and this is explored in much detail later in Chapter 7 Discussion. The following Chapter 5 will present and discuss findings on 'Mechanisms', the core of the C-M-O configuration.

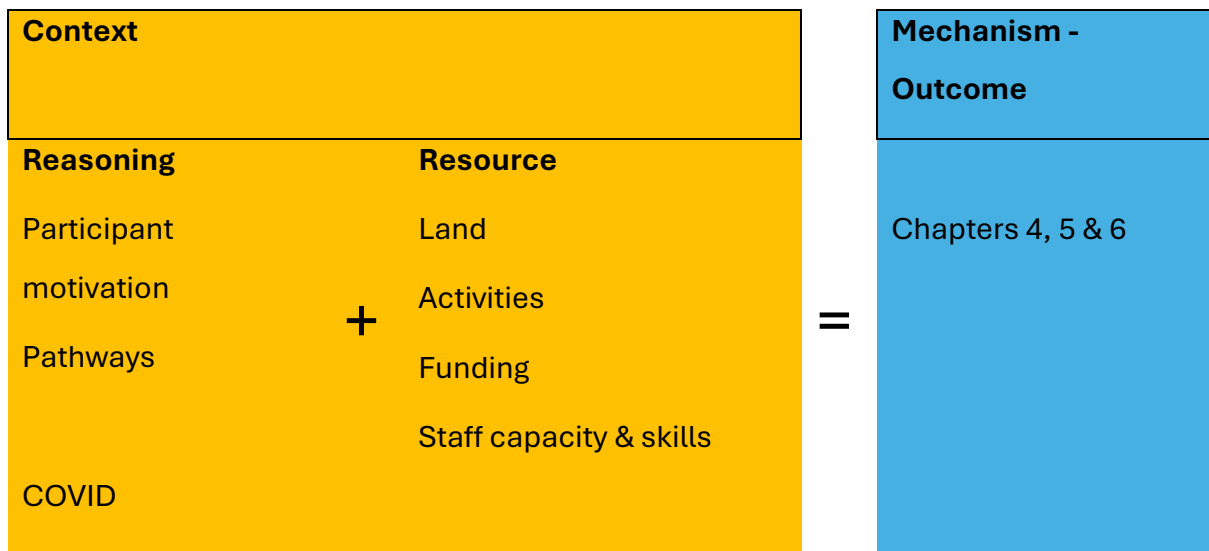


Figure 32. Relationship between 'reasoning ' and 'resource' in the C-M-O configuration

5 Chapter 5 Findings - Mechanisms

Realist evaluation seeks to understand better the *what works for whom and why and in what circumstance*. As previously discussed in detail in Chapter 3 Methodology, this is represented using the following configuration C-M-O.

The previous Chapter 4 Findings: Context, presented findings relating to the contextual factors (C) that enable participant experiences as part of the C-M-O configuration. The aim of this chapter is to present findings relating to the causal mechanisms (M-O) underpinning participants experiences. As discussed throughout, the Five Ways to Wellbeing was used as a framework, or starting point, to understand the C-M-O configuration, therefore each of the ‘5 Ways’ are presented as (predetermined) themes.

In this chapter the quantitative findings are addressed in turn, the ‘5 Ways’ (both the preconceived idea of how important the ‘Way’ was, and the post-activity rating of that ‘Way’). The quantitative analysis aims to determine whether the ‘5 Ways’ are related to mood, and if so, does this appear to be the case in people with different ages and in men and women differently. Qualitative findings present any new themes that emerged following the qualitative analysis process. Therefore, in summary the findings in this chapter are focused on the causal mechanism, described as the ‘firing point’ which leads to participants experiencing enhanced wellbeing.

Data were extracted from the following datasets to inform this chapter:

1. The GWTWB questionnaire (cohort 1 n=357). A reminder of the quantitative and qualitative POST activity questions relevant to this section, found in PART 2, B & C, on the GWTWB questionnaire:

B. Please take a moment to think about what you got out of taking part in activities today. What did the activities mean to you? (open-ended question) (QUAL)

C. Indicate on the star [radar graph] below what you got out of today and how important/relevant the points are to you: the physical activity; connecting with other people; feeling closer to nature; learning something new; putting back into the community (each scale of 1-10) (QUANT)

The approach to GWTWB data analysis is found in section 3.9.

2. The qualitative interview dataset from participant semi-structured interviews and focus groups (cohorts 2-4, n=13) to give greater understanding of the outcomes from each perspective. Where applicable, the analysis of practitioner

perspectives (cohort 5, n=11) on any observations relating to firing mechanisms are presented.

The structure of this chapter begins with presenting quantitative findings taken from the GWTWB as described. Quantitative findings limit the insight into the nuances of understanding *what works for who and why*. Therefore, this is triangulated with data derived from the GWTWB qualitative data and the semi-structured interview and focus group data. A reminder that a Reflexive Thematic Analysis approach was taken to the qualitative data analysis. The aim being to build a rich picture of each theme, presented in turn, using the different datasets (QUANT & QUAL), which include perspectives from participants and practitioners.

5.1 Mechanism Themes

The process of Reflective Thematic Analysis (RTA) of the participant interviews (discussed in detail in section 3.11) identified six themes as possible Mechanisms leading to Outcome (M-O in C-M-O configuration). In the process of RTA, Braun and Clarke (2013) recommend using rich descriptors as theme headers, thus avoiding ‘bucket’ style theme-headings, in order to help draw out the narrative and stories behind the findings. This was the approach taken in developing the theme headings.

In all six themes were identified. The first five themes are the previously identified Five Ways to Wellbeing, the theme headers showing a richer nuanced version based on the findings. The sixth theme emerged through the RTA process.

Six themes:

1. Physical activity is horses for courses
2. Connect – teams, togetherness, tolerance and turbulence
3. Learn something ‘to keep my little grey cells moving’
4. Take notice and lose yourself in nature
5. Giving back – life stories unleash altruistic tendencies
6. Sense of self – ‘meeting me again’

The findings relating to each theme will now be presented in turn.

5.2 Theme 1 - Physical activity is horses for courses

Referring back to the initial programme theory guided by the Five Ways to Wellbeing (Aked et al., 2008), one of the recommendations is to 'Be Active' (Aked et al., 2008). The programme theory draws on the well evidenced benefits of being physically active in the outdoors to improve mental health and wellbeing as discussed in the Literature Review chapter. The title of this theme *Physical activity is horses for courses* conveys the mixed response to the physical activity aspects of civic environmentalism. As the following findings show, it would appear that different people are suited to different levels of physical activity in this context.

5.2.1 GWTWB quantitative findings

Table 5-1. POST physical activity mean scores by gender

Gender	N	Mean	Std. Deviation
Female	168	8.89	1.416
Male	155	8.63	1.624
Total	323	8.76	1.522

Table 5-2. POST physical activity mean scores by pathway

Personal pathway	N	Mean	Std. Deviation
Employment prospects	14	8.93	1.385
Improve health	4	9.50	0.707
Corporate group	166	8.72	1.572
Just to take part	141	8.79	1.491
Total	325	8.76	1.522

After a session, participants were asked to score how much they had valued the physical activity aspect of the intervention. Physical activity was valued highly, rating an average of 8.76 (out of a scale of 1 to 10). The mean scores did not differ by gender (females=8.89; males=8.63, Table 5-1) nor by pathway (Table 5-2). The four people who were on a health pathway valued the physical activity aspect very highly (with a mean score of 9.5) than participants on other pathways, but the number of participants (n=2)

is too small for this to be meaningful. There was no correlation between age and POST physical activity (Spearman's $r=0.067$, $P=0.234$, $n=320$).

Table 5-3. General Linear Model Results showing how POST-activity mood is related to PRE- and POST-activity ratings of the importance of physical activity as a way to wellbeing, controlling for pre-mood, age and gender (n=347).

Tests of Between-Subjects Effects					
Dependent Variable: Participant mood POST activity N=347					
Independent variable	Type III Sum of Squares	df	Mean Square	F	Sig.
PREMood	32.093	1	32.093	50.360	<.001
PREPhysicalActivity	.190	1	.190	.299	.585
POSTPhysicalActivity	19.073	1	19.073	29.929	<.001
Gender	.298	1	.298	.585	.451
AgeRecode	1.037	2	.519	1.551	.382

To evaluate the effect of physical activity on the main outcome of interest (participant mood POST activity), a general linear model was constructed with POST mood as the outcome. Predictors were: gender; age; the participant's mood prior to the activity (PRE mood); the expectations of physical activity prior to the activity (PRE physical activity); and how highly physical activity was rated after the activity (POST physical activity). The results are shown in Table 5-3. As expected, participants who indicated a higher PRE Mood score were more likely to score a high POST mood score ($P < 0.001$). There was no relationship between wanting physical activity PRE activity and having a higher mood score POST activity ($P = 0.585$). However, participants who gave a higher score POST activity for physical activity were more likely to have higher POST mood score ($P < 0.001$). There was no effect of age ($P = 0.382$) or by gender ($P = 0.451$) on POST mood score.

Table 5-4. Pearson correlation coefficient analysis between physical activity variables

Pearson Correlations					
		Participant's mood 1 hour ago	Participant mood post activity	PRE 1-10 scale Physical Activity	POST 1-10 scale Physical Activity
Gender	Pearson Correlation	.055	-.055	-.045	-.084
	P (2-tailed)	.309	.341	.412	.133
	N	346	300	328	323
Participant's mood 1 hour ago	Pearson Correlation		.452**	.159**	.166**
	Sig. (2-tailed)		<.001	.004	.003
	N		299	323	321
Participant mood post activity	Pearson Correlation			.178**	.392**
	Sig. (2-tailed)			.003	<.001
	N			284	282
PRE 1-10 scale Physical Activity	Pearson Correlation				.472**
	Sig. (2-tailed)				<.001
	N				314
**. Correlation is significant at the 0.01 level (2-tailed).					

Table 5-4 shows results from Bivariate correlation analysis, which illustrates how each variable is related to each other. This confirms the positive relationships between POST mood and POST physical activity and PRE mood shown in the General Linear Model (Table 5-3). In addition, it shows that PRE and POST physical activity are related to each other (in other words, the benefit that is expected from the activity is related to the benefit achieved rated after the intervention).

In relation to physical activity, these quantitative findings would suggest that those seeking physical activity enjoyed the physical activity aspect of activities. There was a trend for participants with a higher mood score to have enjoyed the physical activity. There was no significant pattern across ages, gender or pathway in relation to the quantitative data.

5.2.2 GWTWB – qualitative findings

The qualitative data analysis from data collected through the GWTWB questionnaire showed that some participants expressed that POST activity they valued the physical exercise component. There were a relatively small number of references, over all 6% (n=52) coded to '*physical activity*'. There was a fairly even split of references across pathways and ages, with slightly more references (n=29) from males than references (n=23) from females commenting how they valued physical activity compared to females. Refer to Appendix L Qualitative references POST activity.

Example references (quotes) from the GWTWB questionnaire which were coded to 'physical activity' (the numbers are identifier codes):

0009 - Physical activity whilst socialising with the team

0010 - Good exercise

0012 – Good exercise and fresh air

5.2.3 Qualitative interviews - participants

The qualitative interviews gave a much richer picture of the relationship between participants which is discussed next. The data from the qualitative interviews indicated that physical activity was not an important aspect for all participants, but it was for some.

5.2.4 Keeping fit and staying fit throughout life course

Participants (Anne - participant & Deborah - participant) found that they had to improve their fitness levels to meet the challenge of undertaking the activities involved (which involved lots of walking on site), and through the act of undertaking the activity that they felt their fitness levels improved. One participant Ruth – participant expressed being determined to keep her activity levels high and was highly motivated to do so through physical activity related to gardening and maintenance of sites. In fact, participant, Ruth, described how not undertaking physical activity that did not result in any additional benefits as 'squandering' energy:

I can tell you that because, you know, like, I try and get the ten thousand steps in every day now and we'll just walk down the linear walkway and do his 10000 steps and back. But you see, I think, squandering your energy I like to see something for my effort. So I would much rather go to the park and spend an hour doing something, a bit of hoeing or something like that there. And then I've got something for it at the end.

(Ruth - participant)

The same participant stressed the importance and virtues of physical activity in the outdoors as needing to be recognised and passed down through generations.

5.2.5 Own pace

It was reported that there was appreciation for the way sessions were structured, when participants could go at their own pace - this was perceived to be beneficial. The option to set one's own goals or take things easy was appreciated:

Erm, and we all feel- I hope that we all feel empowered enough to go, "you know what, I'm just putting me feet up, I'm, I'm going, going a bit easy this week 'cause you know, I'm not feeling too good.

(Mia - MH practitioner)

for people that aren't necessarily gym bunnies you can still be .. in, you can still want to move and be active, but it doesn't have to be a sport that you're doing. So I quite like that it, we give that option to people that you can, yeah.

(Laura - participant)

The rehabilitation participants agreed that the type and location of activities offered different levels of physical activity, which you could adapt your own pace to:

terrain is different, you just don't know why, we were doing the lopping of the trees out, it was like mounds of grass or your, it was physically .. hard and whereas the allotment, it's more like therapeutic and ..

(Rob - participant)

To summarise, the feedback from this section would suggest that offering a range of activities requiring various physical effort would ensure that physical activity aspect is accessible to a wider range of participants with different fitness levels and goals.

5.2.6 Exercising outdoors

Exercising outdoors was a key driver for some participants and was associated with a sense of achievement. This was reported by younger participants from the corporate pathway in particular, especially for those who said they did not have a garden to be physically active in:

I think the being outside and the physical element was, was also really important to what I enjoyed the most.

(Emily - participant)

You know, the challenge element, not, you know, not many of us have gardens, I live in the city, we don't really have gardens that we can go to every weekend, erm .. and it, yeah, and actually get, yeah, it was that, it was that, yeah, that physical element was quite a drive, yeah.

(Emily - participant)

Overall, some participants are drawn to the challenge of exercising in the outdoors, The example highlighted this was important for those without gardens, living in the city, seeking a physical activity experience in the outdoors that also brought a sense of purpose.

5.2.7 Exercise for a purpose

The sense of being physically active in the outdoors for a purpose or achieve a useful output was evident for some participants. This was presented by two participants (Deborah - participant and Ruth - participant) in the context of ageing, questioning why people would be motivated to go to a gym or organised exercise-for-exercise-sake, when you could do exercise in an outdoor setting as part of the activity or experience:

What's the point in that I really don't get it I do not get that. Why would I go to a gym?

Why do I want to sit on a static bicycle? I'd rather go and look at something.

(Deborah - participant)

And I have said it to them and I said, you know, come and join us. Look have a look round there's nobody fat in our.. I mean I haven't said that I mean, we're all quite fit and we've got something at the end of it.... I think just come and do a bit of digging. Even if you just go brushing and you you're gonna you're gonna to get that exercise, because, as I say, there's nobody who I would say is overweight in our group at all. And even we've got people who've had hip replacements and who struggle with their knees, but they keep on doing it. And I know that that is the key.

(Ruth - participant)

In summary, having the opportunity to undertake exercise whilst achieving something additional, such as maintaining greenspace was common across all ages of interview participants. Another strategy was described for undertaking exercise whilst achieving other set tasks or goals, therefore the exercise element being 'hidden' from direct consciousness.

5.2.8 Hidden exercise

Physical activity for a purpose was also a strategy for not consciously trying to make oneself do exercise, and that it was 'hidden'. In this way the participants believed that exercise is just something you do as part of something else, rather than a goal in itself, overcoming insecurities about exercising in front of other people. An example:

I'm I've never been a great one for exercise I really like exercise with a purpose

(Deborah - participant)

I like the idea of that, I think it depends on [laughs] like I'm, I'm a bit kind of insecure sometimes about exercising in front of people and things like that so I suppose it depends

(Kat - participant)

To sum up, the concept of hidden exercise as described by Kat - participant is interesting as those not drawn to physical activity per se, still perceive an increase in physical activity levels during activities.

5.2.9 Hard graft but good

There was considerable feedback that the physical activity could be challenging, however post-activity the sense of achievement from having challenged one's self physically was reported as a significant positive factor. Participants described they were surprised by how physically challenging the activities were:

Yeah, I, I think when, when we originally started doing it, it was for the, the community and kind of giving back side of it. And I think we were probably a little bit naïve about the physical aspect of it [laughs] when the next day ..

(Laura - participant)

I didn't realise you had muscles in those bits, even people that go to the gym were like, "Oh, this is a different kind of pain."

(Laura - participant)

For some the physical activity aspect of the activities was a pull. One participant from rehabilitation pathway describes how it made him feel invigorated (after being physically inactive for a prolonged period of time):

Erm, because I knew it'd be physical, I kinda, you love that thrive of doing it more. I mean I .. I mean some people will be like, "I can't wait to put me feet up when I get home." .. But I, I had the opposite, it just creates this energy and .. I just boom, I mean that, that was me years ago, I had that energy constantly .. And to get that feeling again is ... great, it's a good feeling.

(Rob - participant)

Physical activity presented challenges to participants, in a positive way. For example, the physical challenge was the focal point of working with others as a team, with shared enjoyment and laughter which provided a positive experience.

The positive aspects of having physical activity as a challenge extended to a feeling of accomplishment and satisfaction, as well as a strategy for relieving stress by getting 'lost' in the activity that resulted in improved mood and sleep. The term here getting 'lost' has been interpreted as being deeply immersed in the activity.

Because by going out firstly on those garden days came home absolutely exhausted but you get a damn good sleep after it (laughs)...I feel a little stressed out and tense like I want to throw a few plates if you get stuck in with something that's physical then then I know I come back in a much better mood definitely

(Anne - participant)

Erm probably the, the feeling I had, erm .. that was like I've actually contributed and I've spent my time, dedicated my time to this, um .. I think the being outside and the physical element was, was also really important to what I enjoyed the most.

(Emily - participant)

In summary, the sub-theme of 'hard graft but good' is significant as it demonstrates that for some participants who are not naturally drawn to physical activity, the sense of achievement from stepping outside of a self-directed comfort zone was very rewarding.

5.2.10 When physical activity gets too hard

Participants described feeling demotivated if the work becomes too challenging 'too hard', it's demotivating:

But yeah, so there was a period where I was sort of losing motivation a bit but that was just sort of in the middle of the day, 'cause we were there for quite a while, we were there from, from when it started to it, till it ended so from 10 till about half 3.

(Emily - participant)

This feedback would suggest that being overstretched physically could end up having a negative impact on participant's experience and wellbeing.

5.2.11 Physical activity is not for everyone

One participant did not think that physical activity aspects of involvement was particularly important and certainly was not a driver or a benefit that she identified with:

Like the litter pick thing you don't you don't really see it I suppose it is exercise as you're walking and stuff you do quite a lot you tend to get like a blister on your finger while you've been grabbing the picker. Yeah I don't that's not lack of motivation to do it because I'm thinking oh it's some exercise. Yeah but it's not really something that I think about.

(Sarah - participant)

Researcher - "So erm talk about the sort of physical aspects of the work involved. So you talked about rhododendron bashing, it is very physical, isn't it? And is that was that something that attracted you to get involved or is that by the by really."

Jack - participant - "Not at all really in fact the opposite"

The negative aspects of physical activity as a challenge was expressed by two participants Jack - participant and Sarah - participant , who felt that old age and injury (respectively) had meant they had not enjoyed aspects of physical activity:

5.2.12 Summary: Physical activity

To sum up this section, the physical activity aspects of taking part in civic environmental activity was perceived differently across the participants. This forms an interesting case in understanding the mechanisms i.e. the trigger or 'firing point' for change, in understanding what works for whom and in what context (Westhorp, 2013). For some participants it was an important factor, consciously identified as being part of their own motivational drivers for taking part and led to positive outcomes relating to their experience. This experience was not shared by all participants, and it was clear that a one-size-fits all approach to physical activity is not the case. The implications for this are to ensure that participants are able to set their own goals during sessions in relation to physical activity. For those that are not driven towards goal setting around

physical activity, the activities offer opportunity for ‘hidden’ exercise, i.e. being active whilst being immersed in other aspects of the activity.

5.3 Theme 2: Connect – teams, togetherness, tolerance and some turbulence

Data linked to the theme of ‘connect’ and connecting with others revealed a mix of experiences ranging from a sense of team and bonding with others, through to testing one’s tolerance of others in a group setting and some descriptions of turbulence, i.e. challenging experiences in relation to group dynamics.

Activities take place in a group setting, therefore are deemed to be sociable. Chapter 4 discussed that for some, motivations for taking part in activities could be driven through a desire to want to spend time with others. This section will present quantitative and qualitative findings that support the sociable aspect of participation, i.e. connecting with others.

The following findings show that there were a number of narratives that were linked to a sense of connection with others. This theme cut across observations linked to sense of team and solidarity as well as participant’s self-reflection on their tolerance in their interaction with others. Observations have also been included where social connections were not positive experiences.

5.3.1 GWTWB quantitative findings

Table 5-5. POST connect to others mean scores by gender

Gender	N	Mean	Std. Deviation
Female	173	8.47	1.888
Male	155	8.23	1.782
Total	328	8.35	1.84

Table 5-6. POST feel connected to others mean scores by gender

Personal pathway	N	Mean	Std. Deviation
Employment prospects	14	7.79	2.007

Improve health	4	7.33	3.055
Corporate group	167	8.59	1.625
Just to take part	144	8.16	2.006
Total	329	8.35	1.84

After a session, participants were asked to score how much they had valued the social aspect of the activity. Having an opportunity to connect with others was valued highly, rating an average of 8.35 (out of a scale of 1 to 10). The mean scores did not differ by gender (females=8.47; males=8.23, Table 5-5) nor by pathway (Table 5-6). There was no significant correlation between ages and having felt a connection to others (Spearman's $r=0.092$, $P=0.098$, $N=324$).

Table 5-7. General Linear Model Results showing how POST-activity mood is related to PRE- and POST-activity ratings of the importance of feeling connected to others as a way to wellbeing, controlling for pre-mood, age and gender (n=347).

Tests of Between-Subjects Effects					
Dependent Variable: Participant mood POST activity N=347					
Independent variable	Type III Sum of Squares	df	Mean Square	F	Sig.
PREMood	27.242	1	27.242	48.172	<.001
PREConnection	4.217	1	4.217	7.457	0.007
POSTConnection	43.672	1	43.672	77.224	<.001
Gender	0.002	1	0.002	0.002	0.964
AgeRecode	0.406	2	0.203	0.184	0.845

To evaluate the effect of having a connection with others on the main outcome of interest (participant mood POST activity), a general linear model was constructed with POST mood as the outcome. Predictors were: gender; age; the participant's mood prior to the activity (PRE mood); the expectations of feeling connected to others prior to the activity (PRE connection to others); and how highly a connection to others was rated after the activity (POST connection to others). The results are shown in Table 5-7. As expected, participants who indicated a higher PRE Mood score were more likely to score a high POST mood score ($P < 0.001$). There was a relationship between wanting a connection to others PRE activity ($P=0.007$) and having a higher mood score POST

activity. Participants who gave a higher score POST activity for a connection to others were more likely to have higher POST mood score ($P < 0.001$). There was no effect of age ($P = 0.845$) or by gender ($P = 0.964$) on POST mood score.

Table 5-8. Pearson correlation coefficient analysis between feeling connected to others variables

Pearson Correlations					
		Participant's mood 1 hour ago	Participant mood post activity	PRE 1-10 scale Feel connected to others	POST 1-10 scale Feel connected to others
Gender	Pearson Correlation	0.055	-0.055	-0.101	-0.066
	Sig. (2-tailed)	0.309	0.341	0.067	0.234
	N	346	300	332	328
Participant's mood 1 hour ago	Pearson Correlation		.452**	.166**	.201**
	Sig. (2-tailed)		0.000	0.003	0.000
	N		299	327	326
Participant mood post activity	Pearson Correlation			.182**	.493**
	Sig. (2-tailed)			0.002	0.000
	N			287	286
PRE 1-10 scale Feel connected to others	Pearson Correlation				.572**
	Sig. (2-tailed)				0.000
	N				320
**. Correlation is significant at the 0.01 level (2-tailed).					

Table 5-8 shows results from Bivariate correlation analysis, which illustrates how each variable is related to each other. This confirms the positive relationships between PRE mood, POST mood and POST connection to others shown in the General Linear Model (Table 5-7). In addition, it shows that PRE and POST connected to others are related to

each other (in other words, the benefit that is expected from the activity is related to the benefit achieved rated after the activity).

The quantitative data shows that taking part in activities is sociable, particularly for those seeking sociable activity. A higher mood score PRE and POST activities was linked to high levels of feeling a connection to others. This did not significantly vary by age or gender.

5.3.2 GWTWB qualitative data analysis

The qualitative findings from the GWTWB questionnaire describe how participants found the activity sociable, and a good way to bond with team members, new people and family members. A total of 13% (n=110) of all references were coded as ‘*connection to others*’. There were more comments relating to valuing having had a connection to others towards the higher age categories. Refer to Appendix L.

Example references (quotes) from the GWTWB questionnaire which were coded to ‘connected with others’ (the numbers are identifier codes):

0076 – Meet new people

0077 – It was great meeting and working with such lovely people

0079 – Socialising & fresh air

5.3.3 Qualitative interviews – participants

This section presents findings from the qualitative interviews under the overall theme of ‘connect’. The quantitative data showed that the activity was sociable and linked to increased mood score, with a slightly higher mean for corporate groups. This is explored in more detail through the qualitative datasets.

5.3.4 Sense of team

Participants in existing groups describe a sense of team ethos, assigning virtual (i.e. non-formal) roles within the groups. The sense of team was both a source of fun, enjoyment and joy but also a sense of responsibility, allocating roles intra-groups as well as playing a supporting role for staff, which reaffirmed a sense of team.

Participants shared a sense of ‘mucking in’ to get a task or job done (Laura - participant). For participant Anne, her involvement gave her a sense of satisfaction

through purposeful activity, being part of 'the team' and camaraderie that came with that:

Erm but it didn't matter it really really didn't matter we're just part of a team and we were just given a task and we just got on with it.. she's behind me pulling faces left it was just a moment where everybody turns around one at a time and we all started laughing and it's moments like that that release tension they really do release tension and so if you have got anything in your life I think just by engaging with other people just by having a laugh

(Anne - participant)

Yeah, erm, but I think that that's nice because nobody quits, everybody keeps going even if we've had it when it's been snowing, when it's been hailing, when it's been torrential rain.

(Laura - participant)

The sense of team and responsibility within the team and feeling part of a team was taken seriously by all participants. Participants Anne and Jack's concept of team included them being part of a team along with paid staff. Even to the point of identifying strengths and weaknesses within the team.

And we used to have a lot more rangers and the used to have different parts of people who suited different aspects..So you have to work with the strengths and because there's fewer people available from the council there's fewer differences in abilities and skills, really, you have to work with what you've got

(Jack - participant)

The sense of responsibility of being part of a productive team did come with negative aspects, particularly around feeling over-burdened with responsibility, and evidence of boundaries between paid and the participant volunteers becoming blurred. For example:

You know, people from that sort of a team in tears with me not because they've been made redundant, because they've been left and they end up doing two or three people's

jobs leave people's jobs and they just can't cope and but they shouldn't be crying to me as a volunteer because the government has cut all their funding should they really.

(Jack - participant)

There was a sense of team evident beyond formal groups (such as Friends Groups) or arrangements, neighbours coming together to complete tasks together:

So (name removed) will say does anyone want to come on Sunday and there'll always be somebody who'll come along. So you know we couldn't do what we were gonna to do but we spent time in the community orchard this week

(Ruth - participant)

To summarise, participants reported a sense of team described as camaraderie, pulling together, to get tasks done or achieve on objectives. Sometimes this instigated people to take on roles within a team in order to complete a task resulting in a shared sense of achievement. The sense of team was reported as being fun, entertaining each other. Negative experiences were reported when a blurring of lines, or overstepping expectation and feeling overburdened by tasks or expectation by the delivery organisation.

5.3.5 Corporate teams

For those participants that came through on a corporate pathway, there is a tangible element to sense of team, as pre-existing teams and roles are already in place within their corporate setting. There was significant emphasis from all corporate participants that since COVID, their working practices had changed from being present in the office day-to-day, to mainly working from home. Therefore, participation in the activities had been driven to a degree by the opportunity of team bonding.

And it was really important to have opportunities where we could all get together still without having an office.

(Laura - participant)

Corporate participants describe how they meet their colleagues, sometimes for the first time, in person and therefore the sessions are a good way to reconnect with their peers. One participant made the point that she would attend even if she did not know anyone as the activity felt social and open to all (Laura - participant). A participant described how she shares the experience on social media afterwards to promote the event and further uptake so more people might choose to get involved.

*And there's erm, even if I didn't have my team with me I would still do it
(Laura - participant)*

In summary, participants from the corporate pathway described how they were drawn to the opportunity of being able to connect and re-connect with fellow colleagues to forge stronger relationship and alleviate a sense of isolation from working from home, as part of new working practices since COVID. Participating in activities allowed a sense of connection with others lacking in their day-to-day work life.

5.3.6 Turbulence

The participants described how group dynamics could be challenging - and created a sense of turbulence. For example, participants described their frustrations at needing to work hard to enable a sense of team to function. There were disagreements on actions and activities (Anne - participant , Jack - participant and Laura - participant) and frustrations that people were not pulling their weight and stepping into roles. A sense of having to be tolerant to work within a group dynamic (Anne - participant , Jack - participant & Laura - participant). For example:

*..that was enjoyable yeah yeah learning not to to to judge people as well being tolerance
all comers and yeah yeah because although you may agree or disagree with other
people's points of view they've got a right to their own point of view
(Anne - participant)*

*Because if its like last year if I end up still doing it people will let me do it. It's not like we
haven't got capable people we've got capable people they just need to stand up
(Jack - participant)*

..the balance of keeping it wild and keeping it managed we have big arguments about how many benches we put in how much seating and how we do up the paths and which paths we do up

(Jack - participant)

Erm, I will just be honest, like there have been times where people get frustrated because they see other volunteers not put in the same amount of effort. Erm, and that, that frustrates a lot, we know, I think erm, when .. there's limited spaces and we, we come and we work, we really graft [laughs] at it and when you see people come for five minutes, take a picture and leave,

(Laura - participant)

There were no reports of negative dynamics by those participants seeking rehabilitation, in fact they appeared to be more empathetic and supportive towards each other, as this practitioner observes:

I-I, you know, I think that you know, we don't rea- we don't really have any fallings out, I think people turn up with different energies and you know, sometimes I have a different energy, just because I'm a staff member doesn't mean you know, I'll just feel a bit off,

"I'm not feeling it today" [laughs].

(Mia MH - practitioner)

To summarise, the sense of team emerged as a pattern under the conceptual theme *Connect*. The sense of team could be in a formal context with paid staff, or informally with neighbours. Participants described how a sense of responsibility and roles could have a positive or negative effect on group dynamics.

5.3.7 Getting to know the neighbours, workmates and reaching out to others

Some participants reported that their motivation for participation was to actively make connections within their immediate community at a neighbourhood level.

For example, participants (Ruth - participant and Sarah - participant) described how the activity, and their involvement in activity was a way to get to know their neighbours. For Sarah - participant , getting involved in civic environmental activity was a strategy for her to meet new people as she moved into a new neighbourhood:

Yes, so I moved to Ordsall think it will be six years this year and I sort of wanted to get involved in like the local community and stuff. And so I looked around in my area, so I joined the friends of...

(Sarah - participant)

Participants reported that they valued having a shared experience with others and this was meaningful to them in their sense of connection with others. Five of the participants expressed that they had wanted to reach out to the wider community and make connections with a wider range of people. The premise of this seemed to be to recruit more people into the activity, or present opportunities for people for people to engage in activities. Two examples:

Like we have we have a Facebook page within the neighbourhood and when we do an activity during the gardening or a cleanup or whatever we'll post on there to get people involved

(Sarah - participant)

And the pupils came out helped create that. So we had a faith garden which represents four different faiths and a different groups, was working on that at the eco group after school but also your more vulnerable children who need a bit of space or would drive me nuts in a classroom.

(Deborah - participant)

Participants described their experience of connecting with new people over a shared mutually shared interest. Deborah – participant, expresses her sense of joy, it being a thrill to meet new people and engage with them in their shared interest.

And and I think about all the new people that I've met you get to know them and you get to know what they're interested in and then you think, oh, well, ooh such and such I could take that because they'd be interested in that.

(Ruth – participant)

I'm completely engaged and thrilled and reminded of the excitement that I have and so that's been a great advantage you know mentally, physically, it's great walk it takes ages just to take people.

(Deborah - participant)

All participants shared a sense of forging new friendships through their experience and strengthening existing friendships. New friendships were sometimes reflected an extension of their usual peer group, and this itself was valued as an enriching experience.

In summary, participants reported that participation in activities enabled them to proactively reach out to others within their respective wider communities such as neighbours, distanced friends or work colleagues. Therefore, participation facilitated extending and strengthening their social connections.

5.3.8 Forging strong relationships

Deep and meaningful relationships were both forged through activities and strengthened through a sense of shared experience and mutual understanding of personal circumstances. This was particularly evident in participants seeking vocational/therapeutic rehabilitation, where they drew strength from a shared sense of belonging. The sense of support and connection with staff members was particularly important to this group who name-checked staff several times during the interview:

It's, it's like a secret society of people, erm and we all know if one's a bit low .. we lift.

(Rob - participant)

And .. using the different organisations .. they're not just accepting, we get involved in, is it going to be right for us or not and it .. I know I, I know I go on and I say about [name removed] but it is like a family.

(Rob - participant)

Yeah, erm, I have, what, what [name removed] saying, I've erm, I've, well I've just, I've just enjoyed actually being to [name removed] and [muffled] I've worked with some, there's some, it's just a really nice, it's just a really nice place to come to.

(Carl - participant)

In summary, a sense of shared experience would appear to strengthen relationships for some, particularly those seeking therapeutic rehabilitation who found strength in shared experience and common understanding of lived experience. This extended to staff supporting activities.

5.3.9 Overcoming isolation

The sense of team, getting to know people, reaching out and forging new friendships were important factors in overcoming a feeling of isolation. This was discussed as being a situation prior to starting to become involved and also during the lockdown of 2020. Participants (n=6) expressed a sense of loss and grief from having made connections through their involvement and then losing connections either by people moving on, or through the literal and sense isolation experienced during the lockdown period of 2020 due to COVID. An example of a participant describing how wanting to escape the feeling of isolation and a loss of sense of self by getting involved in activity:

Yep I think so because I was beginning to feel a little bit isolated at home at home have used this analogy quite a lot.. the make-up of our family is obviously small but I seem to be the hub and the wheel and everybody is pulling in different directions and so I'm getting smaller and and I was beginning to feel that I was doing things for everybody else.

(Anne - participant)

Corporate participants expressed a sense of isolation from working from home, new working practices since the pandemic. Participants described seeking facilitated social connections, because of feeling shy or underconfident:

Even more so being at home because I'm quite a sociable person so I struggle a bit sometimes, being at home all the time. So this opportunity wouldn't be something that I would have normally done in all honesty,
(Kat - participant)

I do, I feel like that's a motivation but it would be nice to also kind of get to know a few of the other people doing it and different teams and things like that.
(Emily - participant)

because this is our first time in a mixed group, when we went last Friday, if they went round and introduced everyone as an initial kind of ice-breaker? Because I found that people kind went into their own teams.
(Sally - participant)

For all participants there was a sense of assumption that by taking part in something, this would increase their social connections. This was recognised by practitioner, Lucy - MH Practitioner, who had identified and wanted to capitalise the opportunity of taking part in activities as a medium by which her clients could become less isolated:

So it could be isolation due to I've got like women in the 50s who've worked all the lives and lost the job due to mental health or physical health so quite high achieving people as well as well as mental health, maybe they've been isolated because they've drunk and in the past had alcohol issues and now they want to form new friendships with people who have suffered domestic violence.

Lucy - MH Practitioner

In summary, participation in activities brought an opportunity to meet and mix with like-minded people which helped to overcome a sense of isolation due to life circumstances.

5.3.10 Balance of sociable and solitariness

Not all participants wanted or felt the need to be sociable all of the time during activities. For example, those participants seeking therapeutic rehabilitation, a mixture of sociability and solitary moments suited them best, as observed by Mia – MH practitioner:

We were just like, just having just a wander round so it wasn't .. you know, we're not always, we're not always deep in conversation with each other so it's, there's, there's a, there's definitely a value in just, in doing tasks alone but with other people.
(Mia - MH practitioner)

Therefore, a balance of having opportunity to connect with others but having the option and space to enjoy solitary time whilst undertaking activities is a key consideration.

5.3.11 Summary: Connect

In summary, the conceptualisation of 'Connect' as theme contained many narratives that had a shared meaning around the concept of feeling connected to others. This included a sense of team, relatedness to others, reaching out to others to form new friendships and overcoming a sense of isolation by connecting and forming relationships with others. Not everyone did want to connect all of the time and appreciated space to spend some solitary time as well as time connecting with other people. Some social connections were not always positive and navigating group dynamics and personalities could be challenging.

5.4 Theme 3: Take notice and lose yourself in nature around you

This theme 'Take notice and lose yourself in nature around you' describes participant's experiences of nature connectedness. All activities take place in the outdoors in the natural environment and findings are presented here that supports whether there has been a reported connection with nature, or not. Furthermore, where a connection with

nature is reported, a sense of how deep or meaningful that connection may have been, for example through moments of mindfulness. The findings presented here will demonstrate that a sense of connectedness to nature varied across participants.

5.4.1 GWTWB quantitative findings

Table 5-9. POST take notice of nature mean scores by gender

Gender	N	Mean	Std. Deviation
Female	168	9.33	1.006
Male	153	8.96	1.39
Total	321	9.15	1.216

Table 5-10. POST take notice of nature mean scores by gender

Personal pathway	N	Mean	Std. Deviation
Employment prospects	14	9.29	0.994
Improve health	4	10	0
Corporate group	166	9.19	1.111
Just to take part	139	9.08	1.357
Total	323	9.15	1.216

Post-session, participants were asked to score how much they had valued the aspect of taking notice of nature within the activity. Taking notice of nature was valued highly, rating an average of 9.15 (out of a scale of 1 to 10). The mean scores did not differ significantly by gender (females=9.33; males=8.96, Table 5-9) nor by pathway (Table 5-10). There was no correlation between age and POST physical activity (Spearman's $r=0.001$, $P=0.986$, $n=351$).

Table 5-11. General Linear Model Results showing how POST-activity mood is related to PRE- and POST-activity ratings of the importance of taking notice of nature as a way to wellbeing, controlling for pre-mood, age and gender (n=347).

Tests of Between-Subjects Effects					
Dependent Variable: Participant mood POST activity N=347					
Independent variable	Type III Sum of Squares	df	Mean Square	F	Sig.
PREMood	37.254	1	37.254	61.185	<.001
PRETakeNotice	.010	1	0.010	.017	.897

POSTTakeNotice	27.607	1	27.607	45.342	<.001
Gender	.040	1	0.040	.052	.826
AgeRecode	1.038	2	0.519	.521	.657

To evaluate the effect of taking notice of nature on the main outcome of interest (participant mood POST activity), a general linear model was constructed with POST mood as the outcome. Predictors were: gender; age; the participant's mood prior to the activity (PRE mood); the expectations of taking notice of nature prior to the activity (PRE Take notice); and how highly taking notice of nature was valued after the activity (POST Take notice). The results are shown in Table 5-11. As expected, participants who indicated a higher PRE mood score were more likely to score a high POST mood score ($P < 0.001$). There was no relationship between wanting to 'Take notice' PRE activity and having a higher mood score POST activity ($P = 0.585$). However, participants who gave a higher score POST activity for taking notice of nature were more likely to have higher POST mood score ($P < 0.001$). There was no effect of age ($P = 0.657$) or by gender ($P = 0.826$) on POST mood score.

Table 5-12. Pearson correlation coefficient analysis between Taking notice of nature variables

Correlations					
		Participant's mood 1 hour ago	Participant mood post activity	PRE 1-10 scale Take Notice of nature	POST 1-10 scale Take notice of Nature
Gender	Pearson Correlation	0.055	-0.055	-0.099	-.151**
	Sig. (2-tailed)	0.309	0.341	0.073	0.007
	N	346	300	328	321
Participant's mood 1 hour ago	Pearson Correlation		.452**	.144**	0.085
	Sig. (2-tailed)		0	0.01	0.128
	N		299	324	320

Participant mood post activity	Pearson Correlation			.228**	.401**
	Sig. (2-tailed)			0	0
	N			284	282
PRE 1-10 scale Take Notice of nature	Pearson Correlation				.502**
	Sig. (2-tailed)				0
	N				312
**. Correlation is significant at the 0.01 level (2-tailed).					

Table 5-12 shows results from Bivariate correlation analysis, which illustrates how each variable is related to each other. This confirms the positive relationships between POST mood and POST Take notice and PRE mood shown in the General Linear Model (Table 5-11). In addition, it shows that PRE and POST Take notice are related to each other (in other words, the benefit that is expected from the activity is related to the benefit achieved rated after the activity).

The quantitative data shows that those seeking a connection with nature did experience a connection with nature, although this was not significantly different across gender, pathway or age. There was a strong relationship between enhanced mood POST activity and having a connection with nature.

5.4.2 GWTWB qualitative data analysis

A connection with nature was well documented in the GWTWB questionnaires with a relatively higher number of references (n=146; 18%) in total across all age groups and pathways, with more references (n=92) to this from female participants. Participants described having a connection with nature that was sometimes mindful, and the expression of being ‘in the outdoors’ was cited frequently to describe being in a natural setting. See Appendix L.

Example references (quotes) from the GWTWB questionnaire which were coded to ‘connected to nature’ (the numbers are identifier codes):

0015 – Felt good to spend the day in nature

0018 – Really therapeutic, calming, relaxing enjoyed being out in nature

0028 – Felt nice to create habitats for wilding in the woodland and was very therapeutic

5.4.3 Qualitative interviews – participants

Both quantitative and qualitative findings from the GWTWB questionnaire suggest that a connection with nature was both a contextual factor and a mechanism to enhanced wellbeing. This section presents the findings from the qualitative interviews under the theme ‘Take notice and lose yourself in nature around you’ to provide more depth on this theme. Participants described in their own way, the varying degrees to which they found themselves ‘lost’ in nature or having a heightened sense of awareness of the natural world around them captured in moments. This may or may not be reported as having moments of ‘mindfulness’, and whether this is a ‘trigger’ in causal powers that may have influenced increased wellbeing. When prompted in the interview about their relationship with nature during their involvement in activities, the response ranged from nostalgic memories reflecting definite nature connectedness as a child, to purposefully seeking and getting a ‘fix’ of nature for wellbeing purposes, to trying to forge a connection with nature by trying to achieve mindfulness-like moments in nature.

5.4.4 Nostalgia and nature

The participants memories and nostalgia around childhood and nature illustrated how innate connection with nature that could be influential in the context and circumstances where people are driven to get involved in civic environmental activity. Participants (Ruth - participant and Sally - participant) describes the sense of reconnecting with her own childhood:

And if I was thinking of one of the most delightful things I could do, and that would be to sit in a blue bell wood, because as a little girl, I can remember where the wood again
(Ruth - participant)

Erm, I think there's an element of, I don't know if this goes under wellbeing, of, of like, of play? Like I think a lot of us did associate it to childhood, a bit more, being kids and being really curious and, and like you know, pl- I don't know how to describe
(Sally - participant)

5.4.5 New connections with nature

Some participants described having unexpected moments of nature connectedness. Participants Sally and Kat described a journey (during activities) of connecting with nature, until reaching moments of joy:

Yeah it, it was, yeah it was a nice backdrop when you kind of get started but it's the, like the touching and the, and the smell of stuff..... we uncovered like a little group of ladybirds and we don't really see them in the UK much anymore so I'd said, "oh my God, there's ladybirds" and people put their tools down and just came over to just look at the ladybirds, and it was like we were children again, like yeah, it was really cool.
(Sally - participant)

And even like we were talking about how the birds are loud, keep- they tend to be louder every time you go,
(Kat - participant)

In summary these are examples of participants rekindling a connection with nature, describing the sense of wonder experienced by themselves and observation of others and relating this back to childhood awe. The quote (Kat - participant) describes a growing cognisance of nature, describing birds getting louder every activity session. Some, participants expressed being already in-tune with nature as being good for wellbeing.

5.4.6 Awareness of existing nature connectedness

Participants particularly those from a corporate pathway describe feeling the need to get outdoors and the feeling of reward for doing so. This desire for nature

connectedness was especially apparent for those participants (Laura and Kat) living in the city centre:

like actually doing something in nature a, to me, and I feel it from the ones that do it regularly it has even more of a reward

(Laura - participant)

Yeah, I mean with the first time, that was like I say, my motivation was “I just need to be out the house”, we don't get out very often, like even do you know that whole commute, like walking from a train station to an office, like being outdoors is really good for your mental health

(Kat - participant)

I think ‘cause I live in a flat in town it does because I don’t always get out into even the parks locally.

(Georgia - participant)

So if I do that when I’m in my flat I can hear sirens [laughs], I can hear the road, I could probably hear builders And I think that’s what you’re looking for or that’s what I find I’m looking for when I do an exercise like that, I’m like, “Come on, can I hear one bird?”

(Georgia - participant)

To summarise, the corporate participants in particular expressed an understanding of the need to be outdoors, in nature, as it was deemed good for mental health, and feeling the benefits from doing so. This links to discussion in Chapter 4, ‘Motivations’ section, where this cohort articulated a greater sense of awareness and desire for connecting with nature for wellbeing benefits, and this being linked to COVID in two ways: experiencing the outdoors in lockdown; feeling isolated due to a working-from-home culture. This cohort reported having a ‘fix’ of nature and that being highly valued especially when city centre living meant they had little access to gardens. The extent to which a ‘fix’ of nature extended to deep nature connection, i.e. to mindfulness moments, was mixed across participants.

5.4.7 Moments of mindfulness

There were some reports of a deeper sense of nature connectedness whilst being in ‘the moment’, i.e. in a state of mindfulness or feeling emotionally moved by nature:

And you know you can be in the garden for an hour and think, oh, like, where's the time gone sort of thing
(Sarah - participant)

It, it was .. mesmerising. It really was.
(Rob - participant)

lot, that I mean sometimes I get quite emotional when I'm in nature as well, if it's really beautiful ..
(Emily - participant)

5.4.8 Searching for moments of mindfulness

Cognisant of mindfulness practice and connecting with nature, some sought to have a mindfulness moment but struggled to do so:

So I can't say I'm great at it. I can't say I've mastered it in any shape or form. Erm it's a work in progress.
(Deborah - participant)

In summary, mindfulness moments with nature were actively sought after by some, because either because of their awareness of mindfulness being good for mental wellbeing, or perceptions of nature being good for wellbeing, or both. Some reported seeking mindfulness moments but not quite achieving it.

5.4.9 Moments of calm

The calming and uplifting effect of nature was highlighted by a number of participants, Deborah - participant and Sally - participant expressed that having sight of nature was a better alternative to staring at screens and technical devices:

..So I like to look out the window I call it the big screen. So I sit there and and and look out and so it's a huge advantage if nature is there to make me sit still.

(Deborah - participant)

We realised you know, we hadn't like checked our social media all day or emails or we were so much more present, looking around and noticing stuff that we might, that there might just be a backdrop but we really saw stuff in detail and I could see in my head, I can envisage what we were looking at and things.

(Sally - participant)

Participants (such as Jack - participant , Ruth - participant , Danny - participant) described how they used nature as a remedy for relaxation and uplift of mood.

..on a personal level, you know, when you're self isolating and on your own and whatever going into the woods its uplifting and beneficial and whatever so that is a good aspect you know

(Jack - participant)

And I know that if I was, my mood was low. One of the best things for me would be to get outside, not necessarily to work, but to be outside

(Ruth - participant)

This is calming and I'll just, you know, lose myself in the time really. So yeah, it has that effect

(Danny - participant)

One participant described how she felt her experience of nature had the opposite effect from feeling calm. She explains she did not at all connect with nature during her experience as she associated nature with the bad weather:

[laughs] No, no, no I didn't, no, it was too wet, too snowy and too cold, I think like that was the feeling towards nature, like "Why are we doing this in this weather?"

(Emily - participant)

5.4.10 Permission to connect with nature

One participant from rehabilitation pathway described their connection with nature as him doing his best to keep things clean, this has been interpreted as wanting to nurture a place for wildlife, and perhaps indicating a lack of permission to enjoy nature, instead have to do a job for nature.

Yeah, erm, I just love anything to do with nature, erm, erm, I love keeping things clean because of erm, not just that, er, [name removed], I did erm, er, what was it from?

(Carl - participant)

I was really involved and er, were going round different erm, you know, through these different entries, cleaning up people's rubbish which wasn't, I can say it was unpleasant, it was.

(Carl - participant)

The example (Carl - participant) may indicate that for some, a need to give themselves permission to enjoy nature, and perhaps feel uncomfortable expressing that they enjoying nature for its intrinsic value.

5.4.11 Summary: Take notice of nature

During the qualitative interviews no participants described a connection with nature as being the single most important aspect of their enjoyment of activities. This may be that since the activities take place in the outdoors, the nature angle may be perceived more as a given backdrop to the activities themselves. However, all participants appear to have a high appreciation of nature and it appears to be an important factor in their motivations and experiences. Therefore, for some, it may be that nature

connectedness forms part of the context. For others, nature connectedness may be the ‘firing point’, i.e. mechanism by which outcomes are generated.

5.5 Theme 4: Learn something – ‘keep my little grey cells moving’

The conceptualisation of *learning something* as a theme, i.e., learning something new, or refreshing skills and knowledge. This theme was developed through links to patterns in data around participants experiences related to being intellectually challenged, experiences of shared or sharing learning and the significance of formal and informal learning. As described by Deborah (participant), ‘keep my little grey cells moving’.

5.5.1 GWTWB quantitative findings

Table 5-13. POST learn something mean scores by gender

Gender	N	Mean	Std. Deviation
Female	168	8.3	1.885
Male	152	7.74	2.177
Total	320	8.03	2.045

Table 5-14. POST learn something mean scores by pathway

Personal pathway	N	Mean	Std. Deviation
Employment prospects	14	8.86	1.994
Improve health	4	8.67	1.528
Corporate group	164	7.97	2.01
Just to take part	139	8.01	2.099
Total	321	8.03	2.045

After a session, participants were asked to score how much they had valued the learning aspect of the activity. Learning rated an average of 8.03 (out of a scale of 1 to 10). The mean scores did not differ by gender (females=8.3; males=7.74, Table 5-13) nor by pathway (Table 5-14). There was no correlation between age and POST physical activity (Spearman’s $r=0.004$, $P=0.945$, $n=351$).

Table 5-15. General Linear Model Results showing how POST-activity mood is related to PRE- and POST-activity ratings of the importance of learning as a way to wellbeing, controlling for pre-mood, age and gender (n=347).

Tests of Between-Subjects Effects					
Dependent Variable: Participant mood POST activity					
Independent variable	Type III Sum of Squares	df	Mean Square	F	Sig.
PREMood	35.311	1	35.311	50.746	<.001
PRELearn	2.024	1	2.024	2.909	.089
POSTLearn	13.394	1	13.394	19.249	<.001
Gender	.046	1	.046	.063	.807
AgeRecode	1.126	2	.563	.713	.582

To evaluate the effect of learning on the main outcome of interest (participant mood POST activity), a general linear model was constructed with POST mood as the outcome. Predictors were: gender; age; the participant's mood prior to the activity (PRE mood); the expectations of learning prior to the activity (PRE Learn); and how highly learning was rated after the activity (POST learning). The results are shown in Table 5-15. As expected, participants who indicated a higher PRE Mood score were more likely to score a high POST mood score ($P < 0.001$). There was no relationship between wanting to learn PRE activity and having a higher mood score POST activity ($P = 0.089$). However, participants who gave a higher score POST activity for learning were more likely to have higher POST mood score ($P < 0.001$). There was no effect of age ($P = 0.582$) or by gender ($P = 0.807$) on POST mood score.

Table 5-16. Pearson correlation coefficient analysis between learn something variables

Pearson Correlations					
		Participant's mood 1 hour ago	Participant mood post activity	PRE 1-10 scale Learn & develop skills	POST 1-10 scale Learn & develop skills
Gender	Pearson Correlation	0.055	-0.055	-0.089	-.139*

	Sig. (2-tailed)	0.309	0.341	0.11	0.013
	N	346	300	326	320
Participant's mood 1 hour ago	Pearson Correlation		.452**	.164**	.168**
	Sig. (2-tailed)		0	0.003	0.003
	N		299	321	319
Participant mood post activity	Pearson Correlation			.122*	.290**
	Sig. (2-tailed)			0.04	0
	N			283	280
PRE 1-10 scale Learn & develop skills	Pearson Correlation				.576**
	Sig. (2-tailed)				0
	N				311
*. Correlation is significant at the 0.05 level (2-tailed).					
**. Correlation is significant at the 0.01 level (2-tailed).					

Table 5-16 shows results from Bivariate correlation analysis, which illustrates how each variable is related to each other. This confirms the positive relationships between POST mood and POST learn and PRE mood shown in the General Linear Model (Table 5.15). In addition, it shows that PRE and POST learn are related to each other (in other words, the benefit that is expected from the activity is related to the benefit achieved rated after the intervention).

The quantitative data shows that there is a relationship between learning and enhanced mood but this was weaker than other '5 Ways' such as feeling a connection with others and taking notice of nature. Within the quantitative data there was no significant difference across gender, pathway or age groups.

5.5.2 GWTWB qualitative data analysis

Participants expressed that they had learned something or had tried something new with 7% (n=60) of all references being coded to ‘*learned something*’ this was particularly so for the 18-29 age group. See Appendix L. Example references (quotes) from the GWTWB questionnaire which were coded to ‘learned something’ (the numbers are identifier codes):

0004 – More training on creating wildlife and habitat corridors

0002 – Learnt new skills

0003 – I had a ton of fun and developed my skills

5.5.3 Qualitative interviews – participants

This section presents the findings from the qualitative interviews under the theme ‘learn something’. This theme was not as prominent across all participants compared to other themes, such as ‘Connect’. However, for those participants that enjoyed the learning aspect of activities, it appeared to be of high value. The following highlights various subthemes within the theme ‘Learn something’.

5.5.4 Being intellectually challenged

One participant (Deborah) expressed that she had enjoyed the process of being challenged intellectually – having to learn lots of information on plant species and this being tested when she was giving talks engaging others in the subject. She referred to this challenge in the context of ageing and menopause, and forced to be out of her comfort zone, but in a positive way. This was a challenge she set herself to compensate for her lack of intellectual stimulation since leaving her job teaching. Anne - participant also described the challenge of learning about plant species:

Erm I suppose something that but maybe hasn't mentioned is having left teaching intellectually I don't have the same challenges at all ..unless you do these things, then you think you're not capable of doing it anymore.

(Deborah - participant)

..but learning about different planting schemes and how to describe those that was tricky early days and still now because they're adding to..

(Anne - participant)

Some participants expressed a desire for learning and wanting to learn more than they had. There were examples of learning about the wider functionality of GI in the context of what activities were taking place and this was well received:

like yeah, the how would be nice a bit more, a bit more detail, even on the nature, like why we're planting those particular trees? Like why.. how will that be for the environment and like the area that we're in and you know, that kind of reasoning?

Kat – participant

Erm.. yeah, it was good to hear about the history of the site as well, how it was ex landfill, erm and that therefore because they couldn't develop on it, it was the best thing for it to be a woodland and that it would also, the woodland would provide sound insulation to the houses around the site as well.

(Emily - participant)

And being able to go away and tell someone this, I'm like that, that, it gives me a boost, like in terms of a boost, um, but I think we also learned other, we learned other things that I think have made me think about things like um, about the noise pollution and how the trees can affect that and it made me sat thinking about .. like the noise pollution in the city where I live and how that could be affecting me,

(Sally - participant)

In summary, participants expressed a desire to learn, to challenge themselves intellectually. There was reported curiosity for the surrounding flora and fauna and an appetite to learn more about the impact of the activities within the wider environment. Being challenged in this way evoked a sense of pride around developing new knowledge and skills.

5.5.5 Pride leading to confidence

One participant described a sense of pride in achieving formal learning qualifications (Deborah - participant) that came about through their involvement, but this also extended to informal learning and being able to apply skills in their own domain, especially to help others, and this increased the confidence of participants. There was a sense of pride in learning something that would then be shared with others:

well I think from my perspective I think it was quite clear that you didn't need to be an expert about tree planting or anything [laughs]

(Laura - participant)

As a result of that you know I went to Alexandra Park that that was one of the things that I did. Um I also did a course myself

(Deborah - participant)

And I really find that fascinating and interesting as well. So, yes, I think I've learned quite a lot from from just joining in not just about people, but about the environment as well. I understand where the park comes from far better now about how it fits within this environment here you know, erm so yep.

(Sarah - participant)

I think learning very much about what I said being more aware and watching things actually there watching the birds so learning informally.

(Jack - participant)

and I got home and I told my partner about it, I went on about it for ages, [laughs], I was really excited, I was like "we planted oak, birch, holly .." and I told him [laughs] about how we did it! So yeah, it was actually really exciting, yeah.

(Emily - participant)

The relationship between learning and increasing confidence, particularly when the learning is applied to help others starts to form as a pattern:

You know that goes on the learning skills. But it, it's a revision of skills. Useful thing.

Because those skills would go and my confidence

(Deborah - participant)

Yeah it's an added benefit to it. It's not something that I thought about how I'll learn something new. But I've sort of learnt out of it because of it and and with like a group like when I first got in the house I didn't really know much about gardening and I transformed my garden. And it's something that I'm really proud of now because it's really well

established

(Sarah - participant)

And I feel like when I learn something, I've achieved it, I've achieved something.

(Sally - participant)

The stages of actually planting that tree was like "wow".

(Rob - participant)

But it grewed on you, it really, really did.

(Rob - participant)

In summary, participants expressed a sense of pride and achievement through learning and this leading to increased sense of confidence.

5.5.6 Shared learning experience

There was a sense of enjoyment and satisfaction in shared learning, which could potentially link to a 'sense of team' as well as 'giving back' to others. For example:

but they're telling the group is also informing me as a guide of the group and so I can give to them I encourage them to feedback to both myself and the group learning again

(Anne - participant)

So I've I've learned a lot about the names of plants erm and about the habitats and the the environments that they need. You know, I wouldn't have been able to probably I wouldn't have found out any other way.

(Deborah - participant)

that kind of was like a networking thing to see l-learning together is really nice, that we remember different bits.

(Laura - participant)

In summary the shared learning experience – learning alongside others and sharing one's own skills with others - was a valued experience. Particularly giving back to others in this way leading to a sense of purpose.

5.5.7 Recognition for learning

Recognition for learning was particularly important to those seeking rehabilitation. The desire to have the recognition printed in paper was very important:

Erm, I mean I love doing courses and even more so, I [muffled] gain a certificate for my portfolio.... and like you participated in .. and successfully achieved, then [name removed] give us a certificate. Just a pie- it's only a piece of paper but it's got the [NAME REMOVED] logo on it and just a thank you that you've done this-

(Rob - participant)

The certification affirmed their learning journey and represented recognition of achieving something positive, and being associated with an organisation, was a huge boost to those seeking rehabilitation.

5.5.8 Summary: Learn something

The conceptualised theme of 'Learn something – 'keep my little grey cells moving'' revealed that for those participants who particularly valued learning, it had a significant impact on their experience. A sense of learning, and valuing learning was shared by

those seeking vocational and health rehabilitation as well as those who were adjusting to a new chapter in life, such as retirement. This would suggest that an opportunity to learn something through participation could support those looking to boost confidence and reestablish a sense of purpose.

5.6 Theme 5: Giving back – life stories unleash altruistic tendencies

This theme presents findings on ‘giving back’ to the wider community or for a greater good. To re-cap, ‘giving back’ means giving over time voluntarily to help develop, improve or nurture local public realm greenspaces, The following findings will argue that altruism, in the context of civic environmental participation, is shaped by life stories, that is, participant’s circumstances and/or existing relationship to places and spaces shapes motivations for involvement (as covered in Chapter 4) but also how and why the outcome of increased wellbeing might be achieved.

5.6.1 GWTWB quantitative findings

Table 5-17. POST ‘give back’ mean scores by gender

Gender	N	Mean	Std. Deviation
Female	169	9.28	1.14
Male	155	9.02	1.326
Total	324	9.16	1.238

Table 5-18. POST ‘give back’ mean scores by pathway

Personal pathway	N	Mean	Std. Deviation
Employment prospects	14	9.36	1.447
Improve health	4	10	0
Corporate group	166	9.19	1.224
Just to take part	142	9.09	1.243
Total	326	9.16	1.238

POST-session, participants were asked to score how much they had valued the ‘giving back’ aspect of the activity. A sense of giving back was valued highly, rating an average of 9.16 (out of a scale of 1 to 10). The mean scores did not differ by gender (females=9.28; males=9.02, Table 5-17) nor by pathway (Table 5-18). The two people who were on a health pathway valued the ‘giving back’ aspect very highly (with a mean score of 10), but the number of participants (n=2) is too small for this to be meaningful. There was no correlation between age and POST ‘give back’ (Spearman’s $r=0.016$, $P=0.770$, $n=320$).

Table 5-19. General Linear Model Results showing how POST-activity mood is related to PRE- and POST-activity ratings of the importance of ‘giving back’ as a way to wellbeing, controlling for pre-mood, age and gender (n=347).

Tests of Between-Subjects Effects					
Dependent Variable: Participant mood POST activity					
Independent variable	Type III Sum of Squares	df	Mean Square	F	Sig.
PREMood	35.642	1	35.642	55.328	<.001
PREGiveBack	.799	1	.799	1.240	.266
POSTGiveBack	20.485	1	20.485	31.800	<.001
Gender	.055	1	.055	.109	.742
AgeRecode	1.234	2	.617	2.255	.301

To evaluate the effect of ‘giving back’ on the main outcome of interest (participant mood POST activity), a general linear model was constructed with POST mood as the outcome. Predictors were: gender; age; the participant’s mood prior to the activity (PRE mood); the expectations of wanting to ‘give back’ prior to the activity (PRE give back); and how highly a sense of giving back was rated after the activity (POST give back). The results are shown in Table 5-19. As expected, participants who indicated a higher PRE mood score were more likely to score a high POST mood score ($P < 0.001$). There was no relationship between wanting to ‘give back’ PRE activity and having a higher mood score POST activity ($P = 0.266$). However, participants who gave a higher score POST activity for a sense of giving back were more likely to have higher POST mood score ($P < 0.001$). There was no effect of age ($P = 0.301$) or by gender ($P = 0.742$) on POST mood score.

Table 5-20 shows results from Bivariate correlation analysis, which illustrates how each variable is related to each other. This confirms the positive relationships between POST mood and POST ‘give back’ and PRE mood shown in the General Linear Model (Table 5-19). In addition, it shows that PRE and POST ‘give back’ are related to each other (in other words, the benefit that is expected from the activity is related to the benefit achieved rated after the intervention).

Table 5-20. Pearson correlation coefficient analysis between ‘give back’ variables

Pearson Correlations					
		Participant's mood 1 hour ago	Participant mood post activity	PRE 1-10 scale Give something back	POST 1-10 scale Give something back
Gender	Pearson Correlation	0.055	-0.055	-0.106	-0.107
	Sig. (2-tailed)	0.309	0.341	0.055	0.054
	N	346	300	329	324
Participant's mood 1 hour ago	Pearson Correlation		.452**	.120*	.165**
	Sig. (2-tailed)		0.000	0.031	0.003
	N		299	324	323
Participant mood post activity	Pearson Correlation			.185**	.371**
	Sig. (2-tailed)			0.002	0.000
	N			285	283
PRE 1-10 scale Give something back	Pearson Correlation				.582**
	Sig. (2-tailed)				0.000
	N				316
**. Correlation is significant at the 0.01 level (2-tailed).					
*. Correlation is significant at the 0.05 level (2-tailed).					

The quantitative data sets show that relatively speaking a sense of wanting to give back to the community and a sense of having given back was an important contribution to

wellbeing as all mean scores were above 9.0. There was significant positive correlation between having a sense of given something back to the wider community and POST activity mood score.

5.6.2 GWTWB qualitative data analysis

A sense of '*giving back*' was described and coded as wanting to '*give back*' by carrying out tasks that would improve the space and benefit the wider community and future generations, evoking a sense of civic pride. A total of 9% (n=79) of all references were coded to this theme. This sentiment was common across all age groups but particularly younger age groups, see Appendix L. Example references (quotes) from the GWTWB questionnaire which were coded to 'sense of giving back' (the numbers are identifier codes):

0007 – Got to give something back to the community

0008 – Fun, fulfilment giving back to the community

0029 - I was helping the community around the area

5.6.3 Qualitative interviews – participants

This section presents the findings from the qualitative interviews under the theme 'Giving back – life stories unleash altruistic tendencies'

5.6.4 Sense of place

There were patterns of shared meaning in the qualitative data gathered from the interviews that portray a sense of ownership of places and spaces, and a desire to improve those places for an individual's reasons (to improve where they live, or for the activity itself), and/or for the benefit of the wider community. Analysis of data indicate that places at a neighbourhood level (that are part of the activity in question) provide a sense of place, that reflects participants own personal heritage, and as such people express a desire to want to preserve, enhance or improve those places. Places and features of places provide a window to their own life stories. Participants expressed a thrill at being recognised by others for being associated with the places they love:

because it means something to me that little bit it's part of who I am courting bringing my children it was it was all their basically and I knew what it was and wanted to become so yeah

(Anne - participant)

..as a kid I lived in the woods and grown up in the woods so I supported it because it's nearby and I really enjoyed it and appreciated it and wanted other people to do the same I was talking to somebody earlier the that you know amazingly sometimes you come across people who've lived in Worsley for forty years and never set foot in Worsley Woods

(Jack - participant)

It's good to know you've contributed to so improving the paths of making the paths less overgrown and you know they appreciate it. So that's good really.

(Jack - participant)

And I think that's great you know I've contributed I've helped out and then it gets tweeted and then you get parents saying this is great thanks very much for doing that, you know.

(Anne - participant)

In summary, the satisfaction from 'Giving back' was important for some as they felt as though they had helped to look after places and spaces that were close to their own hearts or heritage. The sense of nurturing a space, and being seen and recognised for that evokes a sense of ownership and a stake in a sense of place, which is very rewarding. Part of the rationale being to pass on something good to future generations in the neighbourhood.

5.6.5 Future generations

Participants (Deborah - participant and Laura - participant) described a sense of wanting others to experience what they have had, and this being particularly important to future generations.

A sense of worth. What's the point in life if you can't help others? And it's given me that opportunity

(Deborah - participant)

And I think it's, it's really nice that I know myself and the gentleman that suggested .. the charity, we're doing it because we've got kids and we want to make sure that w-where we've grown up .. that there's yeah, that it, there's still trees and woodlands and everything for them.

(Laura - participant)

Participants described why their involvement with schools was important and each felt strongly that school children should experience activities in nature and the outdoors. This too was part of awareness raising, for children to understand the benefits of undertaking activities in the outdoors. This was extended to local families (Ruth - participant) and opportunities for families to engage and interactive with their environment formed a core aspect of the activities undertaken.

The concept of 'Giving back' extended to helping to raise awareness locally to younger generations of the benefits of local greenspace and the need to nurture these places:

.. why it makes no sense to me that adults don't stop and educate the children and [name removed] did exactly the same as I've done with this little boy and this huge great plants was completely pulled up and so she said she said to the little boy shall we put that back and he helped to put it back.

(Anne - participant)

In summary, the older participants in particular reported a sense of wanting to 'give back' by passing on quality spaces for younger generations to enjoy. There was an

expectation that the younger generations should have an awareness and respect the value of greenspaces.

5.6.6 Being told to give back to the community

For those undertaking activities via a corporate pathway, the activities were taken under work time, as part of a Corporate Social Responsibility. Hours are given to employees to 'give back to the community' so this was a predefined rationale for taking part. Corporate participants reflected on that and whether the corporate values were in line with their own, or whether they had other motivations for taking part. However corporate participants expressed something more personal to them other than falling in line with their corporate values:

think it's [sighs] erm, I think it's more .. the formality of it that at first you think you're doing, you're doing, "Oh, I, doing cha- something for a charity," or, "I'm doing something for a foundation," and that's why you're there. So obviously it has to be about impacting other people in the community because that's the connotation of what charity is. But, but I think whilst you're doing it, and, and sometimes I think we're kind of encouraged to be s- so humble and you know, it, it, it's okay to say you're doing it because it makes you feel good. And I think that, that, that's probably a driver on a lot of people about why they do these things.

(Laura - participant)

like I want to see .. positive things around me, not just for the people I know and everybody but I think just even minor things such as litter picking and stuff like that,

(Kat - participant)

Yeah, it's hard to narrow it down, I'd say yeah, it was the, the physical element of actually planting a tree and then also knowing what difference that made ... that I'd contributed in that way.

(Emily - participant)

to actually be out there physically in the w- in the “wild”! [laughs] In the outdoors, in you know, fresh air away from the city because I live in the city as well, erm and actually, you know, doing something and making a change to the landscape and the community

(Sally - participant)

When you walk past a park that you may have planted trees in or cleaned up and you think, “Oh, [laughs] I, I did that [laughs].”

(Georgia - participant)

but the, that impact from one volunteering day you can do 10 times more than you do by just giving money. Erm, so I think there’s a – when you give something back you get something back and it’s usually reward, it’s pride, it’s happiness, that sort of thing,

(Georgia - participant)

Some corporate participants actually expressed the opposite of giving something back to the community as they felt they had not made that much of a noticeable difference, so questioned the impact they had. Perhaps wanting something more immediate.

Erm, no, I’ll be completely honest, no, not immediately. I think when you look back on it, like I think we had this conversation when we did the first one, like we’d like to come back in a year and see how this has grown...not really because I guess you don’t

immediately see a change

(Kat - participant)

Yeah, erm, so I think .. the fact that .. we ... wouldn’t see any trees there for years and years is kind of hard to, to process that and think “oh”, especially as well the fact that a lot of them wouldn’t survive. It was hard to see that it was necessarily gonna going to translate .. um, into the community because it would be a big delay between us doing what we were doing and then seeing like the woodland, um, appear. So I had to keep reminding myself of like the process and it was actually going to achieve something.

(Emily – participant)

I feel like ... it wasn't achieved in a day, we know, I think we know that but I felt like we'd laid, you know, we'd laid the [muffled] kind of the seeds, erm, for that
(Sally - participant)

To summarise, in relation to the concept of 'giving back', the corporate pathway is interesting. Due to the nature of their pathway, via a work initiative generally tailored to 'give something back to the community' as part of a corporate ESG agenda, this tended to be a key motivational factor in relation to participation. However, upon undertaking activities there was a sense of satisfaction from achieving motivational goals, but for some they described the experience of making a personal (rather than corporate) impact. Some questioned their impact at all and pondered whether they had made any difference in terms of giving back to the wider community or the planet.

5.6.7 Summary: Giving back – life stories unleash altruistic tendencies

To summarise this theme, the act of 'giving back' is altruistic in its essence. The decision to undertake altruistic actions – such as taking on a custodian role of greenspaces or playing a part in duties to help maintain spaces - is shaped by life stories. For example, for some, their altruistic streak is deeply woven into their own heritage and existing relationship with a space and the act of place-making and improving places for future generations to enjoy and benefit from. For others, the altruistic nature of their activities is arguably, initially not intrinsic, as it is instigated through a work initiative to 'give back' to the community. However, data would suggest that in most cases a sense of satisfaction for having made a difference is achieved.

5.7 Theme 6: 'Sense of self' – 'meeting me again'

'Sense of self' was a new theme to emerge from the process of Reflexive Thematic Analysis and sits outside of the pre-determined themes featuring the Five Ways to Wellbeing. Therefore, this theme was not featured on the GWTWB questionnaire in relation to quantitative data. However, qualitative data from the GWTWB questionnaire were coded to this theme.

5.7.1 GWTWB qualitative data analysis

Having heightened ‘sense of self’ was commonly expressed as having sense of achievement, pride and accomplishment for having done something meaningful and worthwhile as well as a sense of feeling valued by others. There were 13% (n=112) of references coded to ‘*sense of self*’. See Appendix L.

Example references (quotes) from the GWTWB questionnaire which were coded to ‘*sense of self*’ (the numbers are identifier codes):

0017 – Satisfaction

0072 – Being congratulated by passers-by

0045 – Sense of achievement

5.7.2 Qualitative interviews – participants

Following analysis there was a considerable amount of data coded to ‘*sense of self*’ hence why this became a theme in its own right. The following sub-sections aim to describe the nuances within this theme.

5.7.3 Sense of Identity

Participants had shared experiences relating to a sense of identity, questioning who they are and who they did not want to be. There was a distinct pattern following the first semi-structured interview question: *How did you get to hear about this research, what was your pathway to activities?* Almost all participants answered with a similar response, (*to paraphrase*) ‘I am a’ which is a natural response if you have a pre-defined role within the context of the question or study, for example, ‘I’m a...’ practitioner (Lucy - MH Practitioner), but was more remarkable when the description of who they are, was actually referring to who they *were*, thus defining their own identity by something that was now in the past. More significantly, that it did not quite address the question asked, and that some participants were consciously (or subconsciously) defining their own identity up front at the start of the interview, therefore this was deemed important to them and therefore significant in the context of an informal introduction. Participants described how they wanted to be defined, or not be defined

and be re-defined in terms of their identity as seen by others. An example of how participants defined themselves at the start of the interview:

So my background is erm Head of Humanities Head of Geography at (unclear), erm I then reduced my hours there
(Deborah - participant)

Specifically for the RHS I finished my big day job I was a primary school teacher and I finished early to be a family carer
(Anne - participant)

An example of a participant (Anne - participant) wanting to diminish or hide her perceived identity at the time and rekindle a sense of her 'old-self'.

..so that was the background so basically I think basically it was purely because I could go to the RHS or Bridgewater nobody knew my backstory and I liked it that way.. because at home your constrained and you are the mum the carer the wife but out of the home environment you can be to a large extent yourself
(Anne - participant)

This sense of rekindling oneself was something also observed by practitioner, Cathy - Gov practitioner:

Why do I feel so much better?" and I went, "Well, I think maybe you've just been able to use a different bit of your brain [laughs] for a bit, you know?", like this, I-I didn't really have a, a scientific reason, you know and, and it's given you some proper like respite where you know, you're chatting and, and she was just like, "yeah, I've just been able to feel like my old self," and I, it's always stuck with me, that,
(Cathy - Gov practitioner)

There was a recurrent notion of wanting to 'find' or 'rediscover' oneself again. This was a common response to the open ended semi-structured interview question: *What has been the best thing for you [in relation to their experience of being involved in civic*

environmental activities] ... what has been the most significant thing for you by being involved? This semi-structured question elicited some strong responses around self-identity, such as:

*Probably meeting me again
(Anne - participant)*

In this example, the participant alludes to a narrative where she once felt she had lost her sense of self, her own identity, and the most significant thing for her that she's got out of her experience so far, is regaining self, or 'meeting' herself again. This was both a driver and an outcome for participants.

*I didn't have anything that was specific to me that I enjoyed doing so it ties very much to the reason as to why I did it in the first place.
(Anne - participant)*

*.. because yeah part age parts life hitting roads who you are and so all these wonderful experiences have just made it so that I can re-engage with who I am and yeah I think that's it yeah just finding myself again through whether it's whether it's through nature whether it's through the new friendships finding a purpose if that makes sense.
(Deborah - participant)*

In summary, the data would suggest that taking part in activities led to reestablishing a sense of personal identity. Participation helped older people and people seeking rehabilitation a chance to reestablish a sense of who they are in the world, their contribution and role. Feeling 'lost' and finding one's self again was reported by those recovering from a lived experience that had impacted on their sense of self and self-worth.

5.7.4 Self-worth

Participants describe how regaining a sense of self boosted their sense of self-worth, and purpose in life. For example:

A sense of worth. What's the point in life if you can't help others? And it's given me that opportunity. But that's yeah, that's what it is. That's it. I can't give you more than that.

(Deborah - participant)

“..but when you're retired I think it's really really important to give yourself purpose otherwise you just get bogged down in daytime TV and believe me it's not good (laughs) so giving yourself a purpose like that you go out with your friends then you've got something to engage and to talk about and to share.

(Anne - participant)

In summary, sense of identity, self-worth and sense of purpose appear to be linked for participants, and a shift in their perception of their self-worth has had significant positive impact.

5.7.5 Me-time

Participants expressed by taking part in activities had meant they had prioritised time for this around their own busy schedules and expectations from others, as they felt it to be important to their own self-worth, this was described as ‘me-time’. This being time ring-fenced by participants who set boundaries to preserve this time and set the agenda away from their day-to-day lives. For example:

So so the challenge then is balancing it is saying that, yes, I am going to make time to do something like this. And I've been I've tried to keep particularly when I've not been able to do all the things I've tried really hard to keep those Saturday mornings.

(Ruth - participant)

..we spent the entire afternoon just chatting away and it's not families we're not talking about our families were talking about things that are important to us what've we been growing what have we been digging

(Deborah - participant)

In summary, participants benefited greatly for giving themselves space and permission for ‘me-time’ to improve their perceptions of self-worth.

5.7.6 Life goals

Lucy - MH Practitioner gave her own perspective on the concept of sense of self and life goals in relation to women that she supported at a women's centre. Her own experience through working with the women influenced her own interpretation of her perceived observations of the women she supports in her work. She felt that being involved in the RHS Bridgewater and associated outreach work, provided the women she supports with new experiences which in turn raised confidence. Their involvement evoked a sense of inclusivity, being introduced to, and being part of, the RHS Bridgewater's activities (which included environmental improvement projects at a neighbourhood level, coupled with trips to RHS events for inspiration). Engagement and association with the RHS, a well-known household name, was perceived as something special and even prestigious, an opportunity coveted by many, and this increased the confidence of the women. A similar experience shared by Deborah - participant. Lucy - MH Practitioner describes how (pre-lockdown) the women she supports had plans to make craft items to sell in the RHS Bridgewater shop. These opportunities identified through observations are reminiscent of having life goals, or rediscovering life goals, which for the women in question is an important part of piecing their life together, feeling lost, isolated and lacking in confidence due to terrible life traumas relating to, for example, domestic violence.

I'm thinking just on that last one I suppose you could say I could use the word inclusive like I'm thinking when they went to Tatton it was almost like some of these that would they say these posh gardens and everything is a world that they might have felt excluded from?

Lucy - MH Practitioner

More links I could have with that garden the better.

(Deborah - participant)

Some participants expressed that their pleasure of trying something new and out of their comfort zone, inspired them to try more new things. This was particularly prominent with the corporate participants:

it's not something that I would have ever thought of doing and going and seeing if there's somewhere that I could tree plant and maintenance and what not. So it's kind of and that's really good for you – I don't know if it's mental health but it's good for you personally, isn't it? to always push yourself, try new things, opens new .. area, you know, opportunities and different parts to your brain kind of thing.

(Laura - participant)

So this opportunity wouldn't be something that I would have normally done in all honesty, like I'm not afraid of getting my hands dirty, I'm not against the idea but it's just something I would never have .. kind of known how to seek, you know, I wouldn't have known where to begin with that.

(Kat - participant)

So it's kind of having the opportunity to do things like that. Like I grew up doing that in my garden and in summer with my parents out in the garden and I don't have that now, so it's nice to be able to go and do something that's familiar and new.

(Georgia - participant)

To summarise, setting and achieving life goals would appear to be a vehicle for sense of achievement and self-worth leading to enhanced wellbeing.

5.7.7 Roles – vehicles for purpose or reaffirmation

Stories emerged that described how people's sense of purpose was defined through abstract or virtual roles. That by swapping one identity, e.g. carer, mum, grandparent for another with a renewed sense of purpose away from family life and other's perceptions of what they do. Adopting a virtual role was a vehicle for a sense of purpose and some instances self-worth and self-affirmation. For example, participants took on the role of custodians of their local environment, or enablers of others to access their local physical space. Being a custodian of the landscape was not always a positive experience, and negative aspects were expressed:

“Getting all the people making the woods more available to just members of the general public. One thing I try to do we got a leaflet about the woods and I've boxes of them in my house and sometimes especially on a bank holiday I'll walk past people and give them a leaflet. And it's interesting then sometimes starts a conversation and it is wonderful
(Jack - participant)

When other people don't like appreciate the hard work that people put in and we have problems with kids sometimes
(Sarah - participant)

Participants (Jack - participant , Deborah - participant and Ruth - participant) each took on the virtual role of educator as part of their involvement, facilitating other's engagement in activity e.g. schools and other adults. Interestingly each of these participants talked about having had careers in schools or within the education sector, so perhaps this new 'role' reaffirmed their sense of self as educators.

It's about yeah, it is. And because I've been in education you know all my life, yeah, it would. Little ones. And I've always been very keen on the outdoors. You know, I did a lot of work with the kindergarten and the forest schools
(Ruth - participant)

Brains are being rewired, very frustrated. And I wanted them to realise the benefits of gardening and being outside.
(Deborah - participant)

..it personally makes me feel I'm very proud of the kids, but I also think boy I haven't lost it you've still got something you are still capable of enabling people
(Deborah - participant)

In summary, regular participation in activities allowed people to temporarily step away from their usual roles, for example as their expected role as a carer or nan, offering

respite from daily grind and feeling overburdened. Participants also adopted roles (usually informally) which reaffirmed a sense of self and in some cases previous formal work roles, such as facilitating learning or enjoyment of others, clearly something they found satisfying and missed later in retired life.

5.7.8 Feeling recognised & valued

Feeling a sense of affirmation through recognition from others for doing something positive was strong from those seeking therapeutic rehabilitation. This is likely to be from having very low self-esteem from falling 'off track' and starting at a point of disadvantage. Participants described feeling valued and recognised through volunteering compared to paid work:

Really special, it's special when we're valued as we've valued as a volunteer, you can get volunteering in charity shops and you're kinda used as a scapegoat but [organisation name removed], you're not, you're acknowledged and appreciated .. for the effort that we do.

(Rob - participant)

Yeah, it's very fulfilling and when you see people commenting as they walk by, you know you're making a difference so .. (Danny - participant)

I was just a number like a lot of people say exactly the same, you get paid a wage so you're a number.... But as a volunteer .. It's something you're giving .. it, it's totally different, I would volunteer rather than have a wage. It's more satisfying and if you're in the right establishment with a group, every time you're there, you "thank you", that's one small word. And just that thank you .. makes hell of a difference.

(Rob - participant)

To sum-up feeling recognised and valued was life affirming and rewarding – and therefore likely to motivate participants to further activities or other avenues. There was a sense that the wider community ought to recognise the efforts of volunteer activity.

This was linked to a sense of seeking affirmation and not being judged in a negative way by the wider world.

Yeah, it's very fulfilling and when you see people commenting as they walk by, you know you're making a difference so ..

(Danny - participant)

It's, it, it's erm, it's weird .. because .. pointed bl- on the real world, I get, I get judged on how I look scary, intimidating but when I'm here .. I c- I'm just a- I'm accepted as a really nice guy who ..is that I'm there for everybody here.. And that's why I've been here f- 13 years.

(Rob - participant)

5.7.9 Behaviour change

It was evident that taking part in activities, feeling valued and recognised by others had changed participants own perceptions and values and this had resulted in behaviour change:

I, I appreciate it more. It's erm, might sound trivial but like the litter picking side, I'll hold me hand up, I've been a [muffled] a chocolate bar and I've gone bom, or a cigarette, ding, bom and for the first time I went doing the litter picking and it, it felt .. so ... it j- it, it was like I can't believe that I used to litter.... And .. I'd look at these people that you see on the street with the little trolley and they'd be there, litter picking and I'd look at them and think, "What are you doing?". And there's something about it, unless you do it, you just don't ... feel it and it is therapeutic and you feel proud of what you've .. done.

(Rob - participant)

5.7.10 Summary: 'Sense of Self' – 'meeting 'me' again'

In summary, the conceptual theme of *Sense of self – meeting 'me' again*, was an underlying anchor for many narratives which varied by participant but told stories around sense of identity and self-worth, regaining life goals, valuing the importance of 'me-time' and the concept of roles as vehicles for purpose and re-affirmation of sense of self. This is a particularly interesting conceptual anchor, not least because it does

not feature as a specific way to wellbeing, but because the stories are testament to how powerful undertaking purposeful activities in nature, in public realm (therefore benefitting others) for the benefit of others, can be on individuals from all walks of life. Furthermore, it would suggest that this could be a powerful agent in relation to behaviour change through self-determination.

5.8 Summary of key mechanism themes

The six themes as described in this Chapter were identified as key conceptual anchors that brought together strands of stories sharing patterns of meaning across the datasets. The conceptual anchors (themes) were derived from the process of Reflexive Thematic Analysis of the qualitative data from the semi-structured interviews and focus groups. Themes 1-5 are the pre-determined themes of the Five Ways to Wellbeing: Be physically active; Connect to others; Take notice of nature; Learn something new; Give back. Theme 6 'Sense of Self' emerged as a theme during the analysis process. Both qualitative and quantitative data from Part 2 of the GWTWB dataset were analysed and triangulated with the qualitative interview dataset. The aim of this process was to get a closer understanding of the underlying causal mechanisms that may 'fire' for some but not others.

The question of 'what works for whom and why' is clearly complex and varies between and across cohorts. It would appear that the conceptual anchors, or themes, that explain mechanisms apply to some but not others and in varying degrees. In summary: Physical activity varied in significance for the participants. For example, younger age groups 18-25 described how they appreciated the challenge of the physical activity, as did those on a rehabilitation pathway, whereas older participants described exercise being 'hidden' or additionally purposeful beyond trying to keep active. Amongst all participants, there was a general sense that physical activity levels should be chosen and accommodated for by the participant to suit their own fitness levels or drive on the particular day.

There was a strong sense of connecting with others through activities and participants reported greater connection to others, which included greater sense of team a sense of

shared experience and enjoying having things in common. The combination of data would suggest that there is a leaning towards females and those from a corporate setting. However, a sense of connection was evident across all age groups. Dynamics were important sometimes could lead to negative experiences, particularly with longer standing groups (such as Friends groups).

Learning would appear to be important for those seeking employment, rehabilitation and across all age groups and genders. Those seeking rehabilitation placed value and emphasis on recognition for learning, through certificates, being able to see and show their achievement in print. Younger participants had an appetite to learn more about the impact of their efforts and the role of GI with respect to climate change. Older participants reported learning boosting their confidence, knowing that they could re-discover skills or learn skills later in life. Shared learning experiences with like-minded others linked to sociable benefits of activities and passing on skills to others facilitated a sense of self-worth.

Taking notice, or being in nature, was described as ranging from high value being 'in the outdoors' to in some cases a deeper connection with nature. There was an appreciation from nature from the younger age groups and the qualitative interviews perhaps gave insight into why – that younger people living in the city centre feel bereft of nature and so value their experience in nature, in the outdoors. For those on a rehabilitation pathway being in nature was important in a therapeutic way, although improving the space for nature to thrive as part of meaningful activity was important (rather than just being immersed in nature).

A sense of 'giving back' was clearly something the corporate pathways were expecting due to their employment initiatives but this extended well beyond the corporate pathway. The sense of giving back to future generations, the wider community as well as nurturing the space itself was really strong and clearly provides a form of meaningful, worthwhile activity that leads towards a sense of self.

'Sense of self' was not part of the GWTWB questionnaire, however some of the qualitative data were coded to this theme from the questionnaire, where a sense of achievement, fulfilment and feeling valued from others was evident. The qualitative interviews really unearthed this theme, whereby the sense of self across all cohorts

linked to life goals, reaffirmation of self and roles, feeling recognised and valued by others.

Overall, the quantitative data from the QWTWB questionnaire revealed that of the Five Ways to Wellbeing, '*giving back*' and '*taken notice of nature*' were valued the most across all participants, and the qualitative data from the questionnaire echoed this this (see Table 5-21, Figures 33 & 34).

Figure 35 shows themes by case from NVIVO from the participant interviews which show that 'sense of self' and connecting with others where the most cited references coded to these themes.

Table 5-21. Over all mean scores POST activity

	N	Mean	Std. Deviation	Std. Error Mean
POST 1-10 scale Physical Activity	323	8.76	1.522	0.085
POST 1-10 scale Feel connected to others	328	8.35	1.840	0.102
POST 1-10 scale Take notice of Nature	321	9.15	1.216	0.068
POST 1-10 scale Learn & develop skills	320	8.03	2.045	0.114
POST 1-10 scale Give something back	324	9.16	1.238	0.069

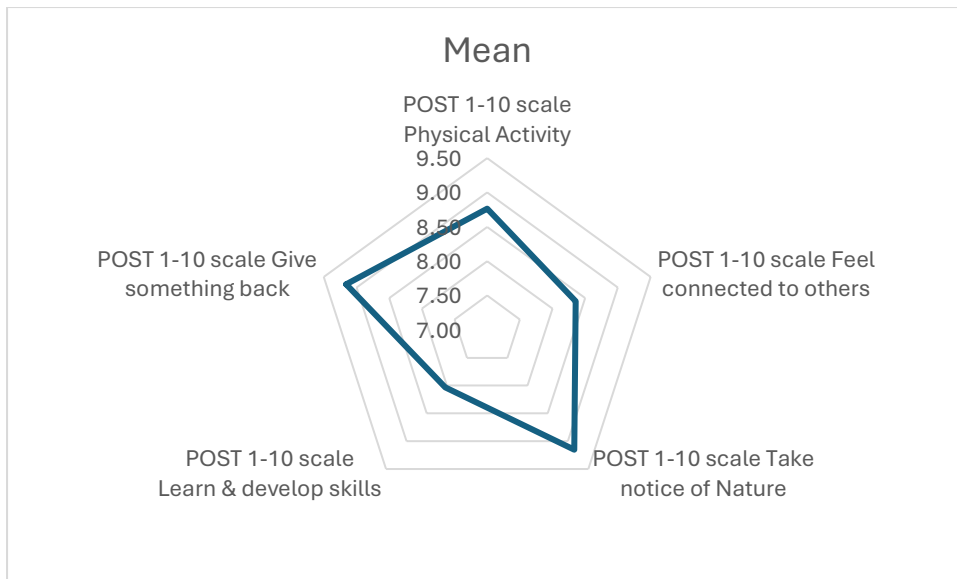


Figure 33. Spidergraph showing over all mean scores POST activity

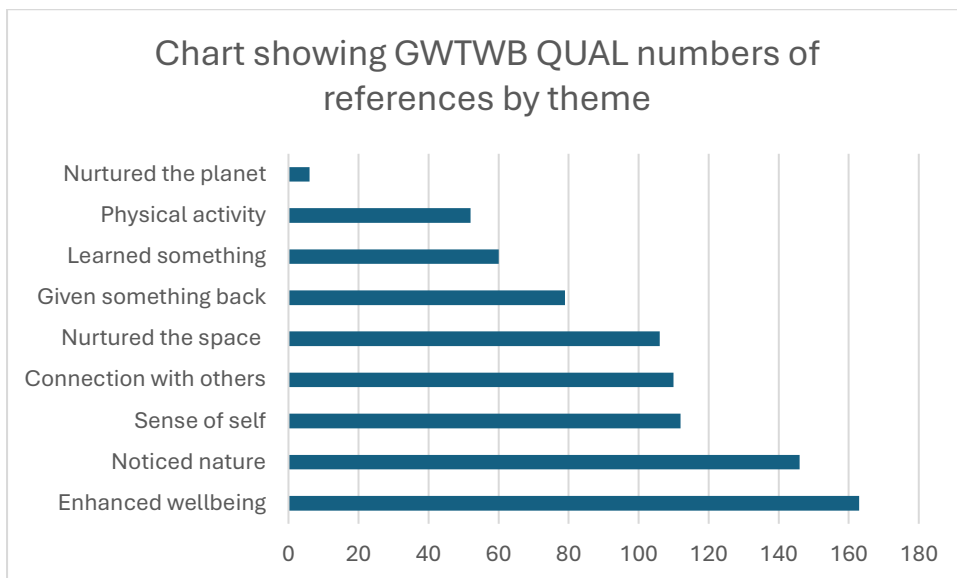


Figure 34. Chart showing GWTWB QUAL numbers of references by theme

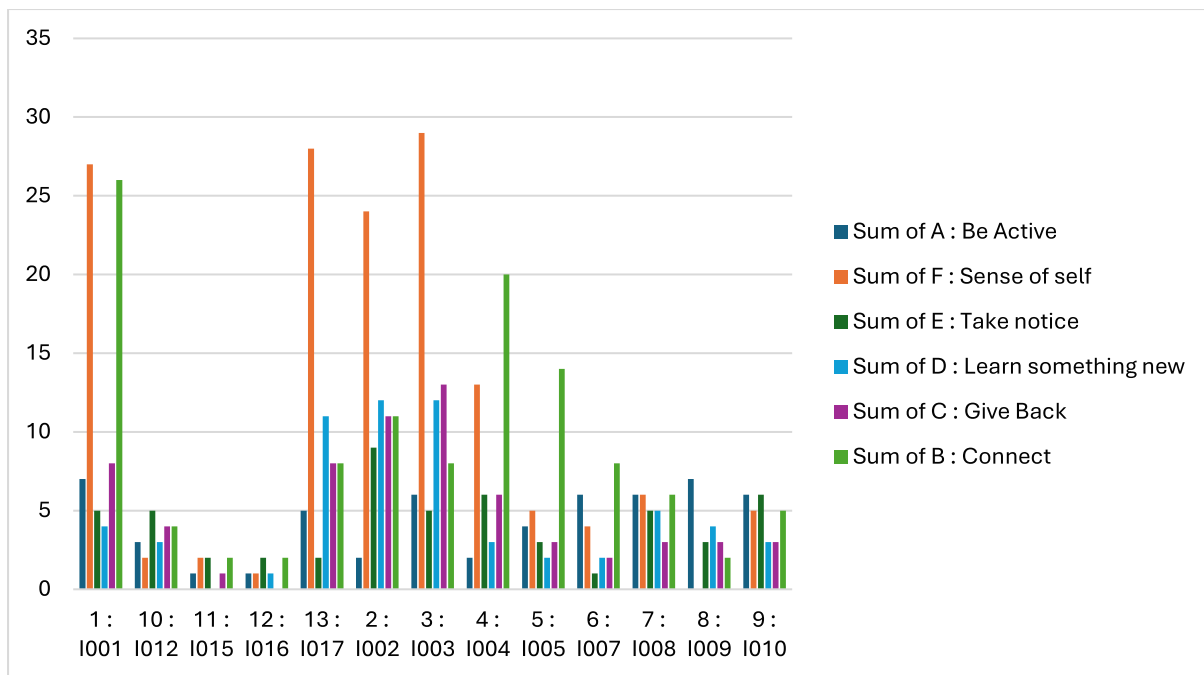


Figure 35. Cluster chart showing numbers of references coded to themes by case (participant interviews)

The next chapter 6 will present findings relating to the ‘Outcome’ from the C-M-O configuration.

6 Chapter 6 Findings - Outcomes

The previous Chapter 5 discussed the causal mechanisms in detail. In the realist evaluation C-M-O configuration, the causal mechanisms are represented by the M-O part of the string, giving insight into the *how* and *why* sections of the query. How and why the firing mechanisms work for some, that lead to the desired outcome of enhanced wellbeing. This Chapter will focus on the outcomes (O), the change or difference that participation in activities has made.

The programme theory (section 3.6.5) hypothesises that the key intended outcome is enhanced wellbeing. However, findings presented in this Chapter will support the widely perceived notion that subjective wellbeing is complex and dynamic, for example, taking into account the strands of wellbeing: ‘hedonistic’ and ‘eudaimonic’ (Deci & Ryan, 2012), which will be discussed further.

In order to better understand the journey to intended outcomes, unintended outcomes must not be ignored and therefore findings are presented and discussed describing where participation in activities has had the reverse effect on wellbeing, this is highlighted in the original programme theory as ‘dark logic’ (section 3.6.5)

Finally, practitioners as key agents within the programme theory, tell an important part of the story. Practitioners design (or co-design) delivery programmes whereby enhanced wellbeing is one of the key desired outcomes, thus how they capture, understand and evidence impacts in relation to activity is an important part of the story - particularly in relation to funding. Therefore, practitioners give their perspectives on collecting wellbeing impacts and evidence.

All three datasets were used to inform this section:

- The GWTWB questionnaire (n=357) using the quantitative data to assess a change in mood pre-activity and post-activity and the analysis of qualitative sections (open ended questions) of PART 2 of the survey (see section 3.8.1).
- Reflective Thematic Analysis of participant semi-structured interviews (n=13) to give greater understanding of the outcomes from each perspective

- Reflective Thematic Analysis of practitioner perspectives (n=11) on any observed changes for participants and any other outcomes. Perspectives and experience of understanding how outcomes may be achieved and evidenced.

This chapter is structured in the following way:

The first section ‘Outcome 1’ will present findings on outcomes related to hedonistic wellbeing. Drawing on findings from the GWTWB questionnaire: qualitative data from the pre and post mood score; qualitative data from the open-ended question. This was triangulated with the qualitative interview datasets to gain a richer understanding of hedonistic wellbeing. Similarly the second section ‘Outcome 2’ will address and present findings on eudaimonic wellbeing as an outcome for participants. The next section ‘Outcome 3’ will present findings regarding the change in the relationship between participants and the physical space and how this is relevant in relation to wellbeing outcomes. This will draw on participants perspectives from both the qualitative datasets from GWTWB questionnaire and participant interviews.

The following section ‘Negative Impacts – exploring the dark logic’ will explore the unintended consequences of participation leading to negative wellbeing impacts. This is expressed as the ‘dark logic’ in the modelling behind the programme theory (see 3.6.5). Both participant and practitioner perspectives were drawn upon to present findings where aspects of participation would suggest that negative feelings, emotions and behaviours may lead to the opposite of wellbeing.

The final section will present the findings in relation to the issues experienced by practitioners in using tools to capture wellbeing impacts will be presented. Issues with how to best capture, evidence and understand impacts was a key theme for practitioners, therefore the practitioner dataset has been used to inform this.

6.1 How enhanced wellbeing is expressed

One final note in this introduction, as a brief reminder on wellbeing types: the findings show, some of the emotions and feelings are best attributed to be hedonistic wellbeing, i.e. real time or soon-after ‘feel-good’ factor, and some are perhaps associated with eudaimonic wellbeing, i.e. a deeper and prolonged sense of purpose or satisfaction.

The qualitative and quantitative methods were designed to capture what emotions or feelings were experienced and how that was expressed by participants. Following analysis of datasets, participant feelings and expressions have been interpreted as being hedonistic or eudaimonic, depending on the data and circumstance. For example, the qualitative pre and post mood score on the GWTWB questionnaire can only capture data relating to the hedonistic aspects of wellbeing, because it's designed in a way to capture mood over relatively speaking a very short period of time (over an activity session). Another example being some of the participant interviewees talked about their experiences over a prolonged period, which produced data of a eudaimonic nature. This is discussed in much detail over the course of the chapter.

6.2 Outcome 1: Hedonistic wellbeing – the buzz

And that's what kind of I think nature does. It gives it a physical buzz almost. I know it sounds daft
(Ruth - participant)

The quote above serves to capture the essence of hedonistic wellbeing. Hedonistic wellbeing is defined as being short-term or immediate sense of pleasure and enjoyment (Deci & Ryan, 2001). There were ample examples across the participant datasets that would suggest that participation led to subjective feelings of enhanced hedonistic wellbeing, i.e. experiencing the 'buzz' of being involved in the activities in real-time (or reflected shortly-afterwards). This was described as changes in mood, stress-levels, relaxation, fun and enjoyment, and will be discussed further in this section.

A change or uplift in mood following feelings of enjoyment or pleasure was captured through the GWTWB questionnaire.

6.2.1 GWTWB quantitative mood scores

The GWTWB questionnaire gathered scores, 1-10 (1= lowest mood state and 10 = highest mood state), on mood pre-activity and mood post-activity, the results are as follows:

Table 6-1. Pre- and post-intervention mood scores (n=299)

	Mean	Std. Deviation	Std. Error Mean
Participant's mood 1 hour ago	6.91	1.833	.106
Participant mood post activity	8.94	.978	.057
Paired differences	-2.027	1.642	.095
Paired t test	t=21.339; df=298; P<.001		

As the figures show in Table 6-1, the mean mood score pre-activity was 6.91 and post-activity 8.94 indicating a mood uplift was recorded and, as the figures show, is statistically significant. The following qualitative analysis provides deeper insight into the uplift in mood.

6.2.2 GWTWB qualitative data

There were a relatively high number of written comments (i.e. references) (n=163) that were coded to a sense of increased wellbeing (20% of total number of references). For example participants expressed an escape from the daily grind, escape from technology and screens, a change in their state of mood, de-stressing and relaxation. Some participants expressed that their experience had been beneficial to their mental health. References were popular across age groups, genders and pathways. See Appendix L 'GWTWB QUAL POST activity'.

6.2.3 Qualitative interviews – participant

Further and deeper insight into enhanced wellbeing emerged through the analysis of the qualitative interviews with participants.

6.2.3.1 Mood change

In relation to the participant interviewee dataset, some (n=9) expressed that their mood changed for the better during and post-participation. For example, Deborah –

participant, describes her change of mood when she takes part in activities, that she experiences hedonistic feelings from taking part:

I could turn up there in the morning feeling quite negative in many ways and unsure what I'm doing and as I start I'm completely engaged and thrilled and reminded of the excitement that I have and so that's been a great advantage you know mentally, physically,
(Deborah - participant)

Another participant from a corporate pathway describes having a 'nice feeling' and a change in mood from participation:

I'd say when I got home, I felt a lot more relaxed than I would if I'd just come, come home from a work day and I felt, I was just in a better mood so – and I think that was because we were in the fresh air and it is a nice feeling.
(Emily - participant)

6.2.3.2 De-stressing & relaxation

Participant interviewees (n=4) described how the experience made them feel calmer in the moment and a sense of relaxation brought on a good night's sleep. For example:

Mentally, it .. words can't describe, it's therapeutic and .. it has a massive effect on you, just being out there
(Rob - participant)

This is calming and I'll just, you know, lose myself in the time really.
(Danny - participant)

Because by going out firstly on those garden days came home absolutely exhausted but you get a damn good sleep after it (laughs)
(Anne - participant)

Participants described how being immersed in the task in hand, and the physical aspects of the tasks led to feeling a state of relaxation, offering a sense of relief in change of mood. Participants expressed a sense of fun and enjoyment from activities (n=8).

Some examples:

I've been in the [ORGANISATION NAME] that many times now that I've just, I just love enjoying it, I just love doing, actually doing the actual thing.

(Carl - participant)

So yeah, erm, always enjoyed that kind of thing and it's just something I'm passionate about and I'm happiest when I'm outdoors and busy.

(Danny - participant)

just chatting to people having a bit of a laugh I know people say that laughter is a form of medicine and I think it damn well is..

(Anne - participant)

like being at home is quite isolating so like I really enjoy being outside, I really enjoy, even if it's physically hard work

(Kat - participant)

6.2.3.3 Existing expectation of improved wellbeing

Participants (n=7) described an increased sense of resilience deriving from enhanced wellbeing (through participation in activities). Interestingly three participants described being cognisant of this because of their upbringing, that they had an awareness that being out in nature was good for their mood enhancement through their nurtured experiences. Those on a rehabilitation pathway had an expectation that being outdoors in nature would lift their mood. For example:

And I know that if I was, my mood was low. One of the best things for me would be to get outside,

(Ruth - participant)

This applied to those participants associated with the rehabilitation pathway, for example:

Yeah, yeah, um and definitely improving mental well-being.

(Lucy - MH Practitioner)

This chimes with the findings from Chapter 4 (section 4.6) and Chapter 5 (5.4.6) where younger, corporate cohorts would appear to have a heightened sense of awareness that being in nature was good for mental wellbeing and coping with life challenges. The quote above (Ruth - participant) makes the point that her expectation of feeling uplifted in nature is down to her upbringing and childhood experiences. This sentiment was expressed by others too:

I sort of grew up on the boundary between a town and the countryside so I sort of experienced both and when I was in the countryside, I felt a lot better and I always wanted to be there in general.

(Emily - participant)

my motivation was “I just need to be out the house”, we don't get out very often, like even do you know that whole commute, like walking from a train station to an office, like being outdoors is really good for your mental health and I think initially it was you know, we got the email through, “I heard you want to come tree planting”, and we were like “this is different, it's, you know, it's a nice excuse to get out the house.”

(Kat - participant)

6.2.4 Summary of Outcome 1: Hedonistic wellbeing – the buzz

This section began with a quote where a participant a hedonistic experience of feeling a ‘buzz’ (Ruth - participant) that is, feelings of excitement and pleasure from undertaking activities. The results from the GWTWB questionnaire showed that there was statistically significant mood uplift pre and post activities reported by participants. The qualitative analysis sought to triangulate the statistical findings delving deeper into people’s experiences relating to immediate wellbeing enhancement. In doing so data

revealed that participants described their moods lifting and feeling sensations of relaxation and de-stressing, having fun and enjoyment. Therefore, it is reasonable to conclude that undertaking activities is likely to open opportunities to experience hedonistic wellbeing enhancement. Interestingly, for some, (younger cohorts in particular but not exclusively so), a predetermined sense of expectation for enhanced wellbeing by undertaking activities, was expressed. This was a common thread in both Chapters 4 (section 4.1) and Chapter 5 (section 5.4.6). The rationale given by participants centred around experiences, and general discourse since, of getting outdoors during the COVID lockdown periods to lift moods. Getting outdoors and being physical and, or, sociable was another factor (as a contrast to feeling isolated working from home). Upbringing and positive childhood experiences was also cited as being a factor that influenced an expectation that doing things in the outdoors was good for mood and general wellbeing. The findings from this section bring forth implications for policy and practice, to be discussed in detail in the next Chapter 7, Discussion.

6.3 Outcome 2: Eudaimonic wellbeing – developing deeper determination

As well as hedonistic wellbeing, there were findings across the datasets that suggest that participation in activities led to a deeper sense of purpose and therefore supporting one's competency and determination to achieve something purposeful. Data were aligned with eudaimonic wellbeing, which focuses on meaning, sense of purpose and contentment (Ryan & Deci, 2001). For example, participants expressed feelings that contribute towards their own sense of self and identity, such as increased confidence, sense of pride and self-affirmation.

6.3.1 Confidence

Some participant interviewees (n=4) described an increase in confidence from taking part in the activities. A heightened sense of confidence was articulated by participants in different ways. For example, in this example a participant from a rehabilitation

pathway describes how he overcame shyness he associates with having introverted characteristics:

So yeah, erm, always enjoyed that kind of thing and it's just something I'm passionate about and I'm happiest when I'm outdoors and busy. So its is just a great environment, I'm introverted but I can speak to people, you can have small talk so yeah, it's one of them.

(Danny - participant)

Older participants tended to express how participation in activities increased confidence levels giving back a sense of self and purpose, that they were still able to make an impact. This reaffirmed their own capacity and capabilities. The following participant (Deborah - participant) describes how the absence of participation, may lead to her thinking she was not capable. The expression, 'Boy I haven't lost it, you've still got something' (Deborah - participant) would suggest that taking part has reaffirmed her capabilities and confidence:

boy I haven't lost it you've still got something you are still capable... unless you do these things, then you think you're not capable of doing it anymore

(Deborah - participant)

Increased confidence was catalysed by positive affirmation of one's-self, achieving on goals and recognition by others for was a key theme for those on a rehabilitation pathway and those in later life. This was less prominent in the corporate cohorts.

6.3.2 Positive affirmation

A sense of positive affirmation as part of life's course was important to a number of participants. One example is the participant below (Deborah - participant), who described how she was facing challenges in relation to life's journey, the menopause, and her participation challenged her intellectually which affirmed her own competency still.

And my memory, my memory is getting worse. It's getting worse and worse being menopausal isn't it great, great advantage. But yeah by being involved... I found those other intellectual challenges, you know I'm trying to remember names plant names

(Deborah - participant)

Participants described positive affirmation whilst navigating their individual life hurdles, re-enforced ones sense of self, and sense of pride.

6.3.3 Summary of Outcome 2: Eudaimonic wellbeing – a sense of purpose and determination

This section presented finding that would suggest that participation in activities leads to enhanced eudaimonic wellbeing. Participants described undertaking purposeful activities that reaffirmed self-agency and capacity, leading to an increase in confidence and esteem. Participants described a sense of pride and being recognised by others, re-enforcing positive affirmation, boosting esteem, developing deeper determination feeding back into their motivations to participation. This was particularly so for older participants and those on rehabilitation pathway who were seeking a positive sense of purpose and to boost esteem.

6.4 Outcome 3: Creators, curators and custodians of spaces

Participation in the act of civic environmental activity, presents an invitation for people to become ‘creators, curators and custodians’ of public realm greenspace, as introduced in Chapter 1. This section presents findings that supports the above statement, but furthermore argues that participation extends beyond providing just an opportunity to make a positive difference to the landscape but strengthens and deepens the relationship between the participant and the place or space and how that links to wellbeing. In many ways this outcome is very close to the mechanism ‘*Give Back*’. The findings presented here are linked but additional to the findings presented under ‘*Give Back*’, Section 5.6.

6.4.1 Creating & curating spaces

There was a strong sense of purpose and pride expressed particularly from local resident participant interviewees (n=5) of being ‘place-makers’, curating spaces by re-purposing and re-interpreting places, in this example ‘waste grass’ get transformed into a ‘community garden’:

There's quite a few of us sort of interested in keeping the area nice and stuff and there was a plot of land just outside the park that we've sort of taken over it was just like waste grass not very big, but we've all come together and planted that up so that's like our community garden...

(Sarah - participant)

Creating and curating places available to others, especially for younger generations as well as sharing out interpretive information to the wider community in the form of leaflets and through social media, such as Facebook.

6.4.2 Fixing spaces

There was a sense of being 'fixers' of spaces, that is where participants had felt a step-change in the quality of the environment through their efforts. The GWTWB qualitative dataset produced a number of references coded to 'nurturing the space' (n=106). This data set and the qualitative participant interviews revealed that there was a sense of pride and satisfaction around playing an active contribution towards improving spaces, through helping to maintain spaces through such as litter clean ups, mending things, fixing things (benches, planters, paths), tackling invasive species, woodland management. This sense of being a custodian was evident in the ways people described how they had made a tangible difference on the ground, helping to nurture the space.

6.4.3 Custodians and sense of ownership

Participants felt a sense of ownership of places sometimes through their own heritage ties to a place, wanting to pass on a sense of connection to a space to younger generations a felt a responsibility to look after spaces for children and the wider community to enjoy.

The role of custodian was evident in the way that participants described a sense of ownership and caring for a space. For example, participants described feeling upset or frustrated when the spaces they've worked on get vandalised:

yeah it's just frustrations with that people sort of spoil when you're trying to make somewhere nice.

(Sarah - participant)

By contrast, those activities that were not always based in the same place did not lead to a sense of ownership. For example, a lack of perception of progress on a site did not lead to a sense of ownership when the activities moved around geographically:

*Yeah, 'cause when you go to lots of different places every week, you don't notice any ..
progress as it goes on.*

(Danny - participant)

However, a sense of ownership and passion for a place or space was not just limited to those who lived locally, this was also evident for those on a corporate pathway (therefore did not necessarily live very close to where activities were taking place) who expressed it was about making a difference to Manchester as a region.

6.4.4 For the love of Manchester:

A sense of place and pride in place extended beyond having an impact at a very localised micro-level. Participants (n=5) also referred to making a difference at a district or city-region level. Here are two examples:

*it felt like a perfect fit because it felt like it was something that we could actually
contribute to, charity wise, volunteer hours wise but it's something that's directly within
the Manchester community*

(Laura - participant)

*Manchester is a big city, Manchester is, has everything. Because you always hear, "Oh,
it has no green spaces, it's not like London, it doesn't have parks," and I think, "It does,
they just need protecting because they keep going."*

(Georgia - participant)

This is interesting as it would allude to participants expressing having an impact beyond a micro-level, on a wider level, therefore how they perceive smaller steps can play a part in wider aims or agendas.

6.4.5 Change in perception

Participants described a change in their perceptions of the spaces they had been involved in, in different ways. For example, one participant described a sense of enlightenment of seeing the place around her with new eyes, noticing things she has not seen in the 20 years she lived there for (Sarah - participant). Learning and discovering more about the history of sites (n=5) and the heritage of the place (n=3) was enjoyed. One participant claimed that a neighbour's house sold very quickly '*in four days*' (Sarah - participant) because of the improvements her community group had made to the local area. Again these insights would suggest that participation broadens perceptions of the local area, these points are important to feeling a sense of belonging, purpose and agency and making a difference. The sense of place being valued was expressed by all participants (n=13) in their own way. For example, the concept and role of green infrastructure was highlighted by one participant (Georgia - participant) as she described the relationship between the wider physical space and her own needs:

Erm, and I feel quite strongly about like the Green Corridor and like having n- er, the biodiversity, so like the animals and plants can spread across that corridor and help keep our health, our mental health
(Georgia - participant)

Several participants (n=8) described how they missed outdoor spaces during Covid-19 lockdowns which supports the notion of natural greenspaces being particularly valued in the urban setting.

6.4.6 Longevity of purpose

For some participants, namely the local residents, the activities spurred or provided a sense of purpose that catalysed or linked to ongoing activities which they appeared to

be proud of. Examples would show that strengthened links between themselves and the wider community which led to repeat events.

For example, participants (n=2) described how they celebrated activities or projects they were involved in with the wider community. These were combined or integrated with other celebratory events in the community, and these had lasted year on year:

But then each year after that we've done it in the park and it just makes it more of like a community thing and yeah, I like it.

(Sarah - participant)

So until we have local choirs come to the park and we have communal carols singing and and erm we have pies and mulled wine and stuff like that, and that went down really well. And there was a big drive to do more of that in the park. People were really keen.

(Ruth - participant)

The examples here demonstrate how longer-term participation in place-based activities can instigate further community activities and strengthen relationships between communities. This is a powerful outcome in relation to social connections and individual's sense of purpose.

Summary of Outcome 3: Creators, curators and custodians

This section draws upon findings that demonstrate that participation in activities opens a door to becoming creators, curators and custodians of places, forging a deeper connection to the landscape, or place. There was a sense of satisfaction and achievement from undertaking tasks which make a tangible difference to a space and the wider community. There was a strong sense of nurturing spaces, whether that be for just a day, or more long-term that evoked a sense of pride, attachment and ownership of spaces. This suggests a sense of determination and drive to become more involved in activities and having sense of responsibility and a sense of ownership of spaces, leading them to feel comfortable and empowered to use the physical spaces for community events. This is an important outcome from a wellbeing perspective and provides a medium by which eudaimonic wellbeing can flourish. For example, having a

sense of purpose through meaningful activity which impacts positively on an individual and community level. Participation becomes platform supporting personal development, belonging and agency.

6.5 Negative impacts – exploring the dark logic

The programme theory sought to highlight the unintended outcomes in relation to wellbeing, i.e. what circumstances or factors may lead to negative feelings which are likely to thwart a sense of enhanced wellbeing. This is illustrated as ‘dark logic’, i.e. the negative feedback in the programme theory (section 3.6.5). Exploring the negative impacts of participation brings a closer understanding of circumstances which would lead to people feeling worse, not better, for having taken part in activities. Both the practitioner, but mainly participant qualitative datasets have produced the findings presented in this section as three themes: social dynamics; participant and organisation dynamics; braving the elements. The theme ‘social dynamics’ includes sub-themes in relation to participant-to-participant relationships as well as that of the wider community. The ‘participant and organisation dynamic theme and subthemes discuss the relationship between participants and delivery organisations and associated staff members. The theme ‘braving the elements’ discusses the challenges of undertaking activities in all weathers.

6.5.1 Social dynamics

6.5.1.1 *Vandalism and anti-social behaviour*

Interview participants (n=7) described frustrations at their efforts being ruined by anti-social behaviour such as vandalism from the wider community. This highlights the sense of being a custodian ‘looking after’ the spaces they had been involved in, with examples of berating people in the community who were perceived to be causing harm to their spaces (n=3).

It was described how anti-social behaviour could bring people together by trying to sleuth the perpetrators. Although confrontation with the wider community was also avoided. This could potentially cause conflict within a community. For example, Sarah

– participant, had perceived kids as undertaking acts of vandalism, but this could also be perceived as young people wanting to use the trees in their play.

It is hard these days isn't it to know when do you intervene

(Anne - participant)

*... it's just frustrations with that people sort of spoil when you're trying to make
somewhere nice*

(Sarah - participant)

6.5.1.2 Conflict within the wider community

Changes to greenspaces could cause conflict in the community. This participant interviewee (Sarah - participant) is quite philosophical about conflict within the community relating to how a space was being managed. The same participant described apathy from others in the community and even negative backlash :

*not that I wanted everyone to go like, oh, wow, you're all amazing, but it just felt that we
were trying and not getting any engagement but then they were dead quick to rubbish it
afterwards*

(Sarah - participant)

6.5.1.3 Conflict within groups

The practitioner interviewees expressed perspectives on observed group dynamics between people and groups, and therefore having manage dominant personalities. For example:

*difficult with our work is that when you do community development, is that you can end
up with .. you know, sort of dominant personalities or you know, some sort of .. [laughs]
some sort of .. you know, personality clashes or something*

(Matt - Env practitioner)

The flipside of having a sense of ownership can lead to conflict and this was recounted by practitioner interviewees. For example:

you know... yeah because it's, it's like you know people misinterpret kind of maybe how, what, what .. or disagree on what the, the actual outcome of the project that they're getting involved in

(Matt - Env practitioner)

Yes, er, I have an angry allotment committee who are really annoyed about the length of my grass on my wellbeing allotment erm, because my sessions for wellbeing are not exactly cutting the grass.

(Nina - Env practitioner)

And then I think there was you know some people might have started off having ownership and then not kept it up and other people wanted to get involved and some people were quite precious about their own little patch so I gathered even though I wasn't as involved in that when I gathered there were quite a few sort of problems there with people not not sharing

(Lucy - MH Practitioner)

The way groups were framed (by practitioners) can create a division between participants, creating conflict over land use. For example here one group is framed as 'volunteers' the other the 'wellbeing [group]':

It sounds like the difference between the two groups is, is more erm, defined than ours, you know, between the wellbeing and the volunteers?

(Abbie - MH practitioner)

I think a friends of, and there's a lot of situations that I support friends of groups, I've been trying to put friends of groups related to green social prescribing and that is incredibly challenging. But yeah, I've seen in a friends of group that model is very volunteer-driven, less supported by organisations erm, and then that can actually be very det-detrimental to some of the people in the friends of group who started it because they want to care for their park, it's become a huge amount of responsibility

and a huge amount of pressure and they feel like it's just them and they feel unsupported in their role and it all becomes quite political.

(Nina - Env practitioner)

6.5.1.4 Friends of.. groups can be fraught

'Friends of' groups in particular seemed fraught with intra-group dynamics that could have a negative impact. Two participant interviewees (both members of Friends of.. group) described resentment in the group about roles and responsibilities, and how to manage spaces. This was something observed by practitioners too:

and its always a fine balance that another thing we haven't discussed the balance of keeping it wild and keeping it managed we have big arguments about how many benches we put in how much seating and how we do up the paths and which paths we do up and how urban and accessible even though we have tarmac paths people grumble

(Jack - participant)

And actually there's people I know in friends of groups who I, their wellbeing is, is not, I would say their wellbeing is being negatively impacted by being in that Friends of group.

(Nina - Env practitioner)

6.5.2 Participant and organisation dynamic

Relationship with organisation

Both participant interviewees (n=4) and practitioner interviewees (n=5) discussed negative dynamics with participants and organisations (both delivery agents and landowners). There was a sense of the participants being the 'underdog' and that resulting in negative feelings and experiences.

One participant interviewee described the dynamic of feeling 'piggy in the middle' between the wider community and the council:

One of the challenge always I mentioned about being piggy in the middle when local people complaining, but also the challenge of working with the council you've ever worked with any council they're hard work in the way they do things and not do things.

(Jack – participant)

6.5.2.1 *Dealing with unknowns*

Practitioners discussed that whatever the pathway to activities, participant mental health problems can be unknown or undisclosed. This was less of a problem for the mental health practitioners who would have more insight into participant by the very nature of their service. Those practitioners dealing with the wider public described dealing with the unknowns:

.. who have got mental health problems don't see anyone about it, whatever the statistic is, certainly the majority that do aren't getting any support for it at all.

(Matt - Env practitioner)

6.5.2.2 *Discontinuation of activities*

Lack of sustainability and funding coming to an end leading to the discontinuation of activities was a high concern shared by most practitioners (n=10). The point raised here is aims to highlight the potential impact from a participant perspective when funding for the delivery of activities comes to an end. This having an impact on those that had come reliant on a programme. A sense that participants had been let down and unappreciated for their efforts in improving their local greenspace and therefore undermining the role of custodian. One practitioner interviewee described potential disappointment because spaces hadn't been maintained following activities coming to an end due to lack of funding:

we did have a couple of people who regularly volunteered and then that's gone now, so the sites that we were working at we're no longer working at and if people went back to those sites they would now look in a worse state than when they were working on them.

(Beth - Env practitioner)

6.5.2.3 *Lack of support*

There was an awareness from practitioner interviewees (n=4) that participants and groups were unsupported, or leant on, which was overwhelming and unfair:

I feel that part of that is something about the wider culture isn't it that often when people are doing these things they don't feel like they are supported by something wider. It's just, "I'm going to try and make it, you know, see, make what I want in the world." (Abbie - MH practitioner)

6.5.2.4 Unprofessionalism

One startling example of how the pressures experienced by staff impacted on the experience of participants:

You know, people from that sort of a team in tears with me not because they've been made redundant, because they've been left and they end up doing two or three people's jobs leave people's jobs and they just can't cope and but they shouldn't be crying to me as a volunteer because the government has cut all their funding should they really
(Sarah - participant)

The above example is a sobering reminder of the boundaries between the role of the volunteer and paid staff, and that over-stepping the boundary is unprofessional and understandably leads to resentment from the participant.

6.5.3 Braving (and embracing) the elements

Perhaps unsurprisingly, the Mancunian climate was mentioned a considerable number of times, enough to warrant being a theme. The weather was perceived as a barrier to attendance and a blocker to enjoyment by some who felt ill-equipped clothes-wise. Although the weather and elements didn't bother all participants:

Yeah. It was minus 6 the other week (Mia - MH practitioner)
probably started off doing it and I thought oh God this is too cold and hard work not
wanted to do do it anymore.
(Lucy - MH Practitioner)

it was too wet, too snowy and too cold, I think like that was the feeling towards nature,
like "Why are we doing this in this weather?"
(Kat - participant)

if people don't want to be out or that's a really uncomfortable situation that's going to affect attendance.

(Beth - Env practitioner)

the weather can just ruin everything.

(Abbie - MH practitioner)

I thought it would bother me more, the weather but it didn't

(Danny - participant)

[muffled] Erm, you do, it is like, it's, it's, it can be quite hard because, because of the weather and things but really, erm, once you get stuck in, you warm up ..

(Mia - MH practitioner)

Therefore, poor weather could be a barrier to some and even have a negative impact on their experience. However, some took on poor weather as a positive challenge to try and endure, feeling better afterward for doing so.

6.5.4 Summary of Outcome 4: Negative impacts – exploring the dark logic

This section highlights findings that suggest that certain factors can have an unintended negative impact on wellbeing, thwarting experiences for participants. These factors could be behavioural (linked to social dynamics) or circumstantial (such as the weather).

Throughout the findings in Chapters 4 and 5, there has been much discussion on the positive impacts of the activities often in a group setting being largely sociable, and the rewards from being recognised by the wider community evokes a sense of pride, self-affirmation and sense of self. However, Chapter 5, section 5.3.6 introduced the more turbulent aspects of sociable activity, how it could be a test of one's tolerance and navigating tricky social dynamics. This section here brought forward more examples of social interactions such as dealing with vandalism, conflict between groups and the

wider community that could have considerable impact on wellbeing in a negative way, i.e. becoming a source of stress, frustration and anxiety. Organised groups such as Friends groups take on their own social dynamics and power politics, as volunteers, a professional code of conduct (which should avoid or deal with conflict through policy and procedures) need not apply. From a practitioner perspective, in many ways it is difficult to address or try and mitigate the risks of participant experiences relating to dysfunctional social dynamics, but how groups are constructed are often influenced by engagement models designed by practitioners and this will be discussed further in Chapter 7, Discussion.

This section highlighted that practitioners are not immune to falling foul of unprofessional behaviour that sours the dynamic between the participant and delivery organisation or landowner. Participants become involved in a volunteer capacity. Therefore, placing too much onus on the responsibility of the participant, or leaning on participants for emotional support, understandably leads to resentment, feeling overburdened and overwhelmed. Underpinning these issues described by participants has implications for resources, or lack of, as covered in detail as a contextual factor in Chapter 4.

Finally, participants described how the British Mancunian weather could hinder participant enjoyment to the point of feeling miserable. There is little that can be done to mitigate poor weather apart from advising on adequate clothing and kit. Providing only fair-weather seasonal activities would reduce the opportunity for engagement arguably to unworkable levels. Nature may be subject to human activity (e.g. climate change) but cares little for the human species, for example inconveniently placing tree planting season in the autumn/wintertime. However, for some the weather was taken on as a challenge which led to a sense of achievement or satisfaction having overcome the elements as part of the experience in nature.

6.6 Measuring outcomes – tools of the trade

So far, this Chapter has presented findings relating to the positive wellbeing outcomes and negative wellbeing outcomes in relation to participation in activities. This section

addresses practitioner's experiences of how outcomes are measured. The following quote sums up the sentiment by many of the practitioners interviewed:

that I'm pretty fed up of being asked to erm, provide this .. this evidence because it doesn't matter how much you provide .. it doesn't seem to ever .. be enough.

(Matt - Env practitioner)

This section addresses the thorny issue of measuring outcomes, and therefore these findings are particular to the practitioner interviewees. The aim of this section was to understand some of the challenges faced by practitioners around capturing evidence relating to the outcomes in practice, since the programme theory relies on being able to evaluate and evidence the outcomes and impacts from taking part in activities. This section highlights the differences between practitioner perspectives, namely the environmental practitioners and the health/mental health practitioners. The topic of measuring outcomes was a subject of discussion within the practitioner focus group with debate between the group highlighting differences in approach to measuring outcomes between the mental practitioners and environmental practitioners.

6.6.1 Differences in data collection between practitioners:

There appeared to be a distinction between the mental health practitioners and the environmental practitioners on capturing health and wellbeing data and this was drawn out during the practitioner focus group. The mental health practitioners seemed more comfortable with collecting data of this manner, presumably because the wellbeing data wasn't specific to the activity as such, rather capturing more of a general overview of their client's health and wellbeing, which they did as a matter of course. This a high contrast with environmental practitioners who felt completely overwhelmed by the number of tools, felt pressured by funders to use particular health related tools and overall they felt as though none of the tools they had previously used quite hit the spot from a participant or funder perspective.

For example, a mental health practitioner describes the tools they use to capture health and wellbeing data as a matter of course:

Yeah, erm, we look at obviously all the standard numbers, participation, attendance, all of that, but we do SWEMWBS and SP10, I can never remember it, the social connectedness one and the ONS Loneliness Scale at different points.

(Rachel - MH practitioner)

The same mental health practitioner explains why so much data is collected from their client participants, that some data collection is linked to the funders requirements, but other data gathering exercises are linked to evaluations relating to the charities core objectives relating to mental health. The confidence of using mental health and wellbeing capture tools by mental health practitioner interviewees was not mirrored by environmental practitioner interviewees who felt overwhelmed by the number of tools available. A lack of expertise in evaluation within the environmental sector, one example (Nina - Env practitioner) articulates:

I think there's also something to be said for where erm, .. personally, I am not an expert in evaluation and monitoring when I work for an environmental organisation, I'm an expert in people and the environment

(Nina - Env practitioner)

This practitioner discusses with the focus group the difference in expectations of participants being asked about health issues when they turn up to participate in environmental volunteering with an environmental organisation, and this being a contrast to her mental health participants expectation:

I think that's interesting because you, you're [org name removed] and people come probably expecting, not expecting but do you know what I mean? to be asked about their wellbeing and their mental health. Whereas if they've come to a volunteering for environment thing and step one, tell you all about ..

(Rachel - MH practitioner)

There was a strong sense from practitioners that no matter how much evidence was collected, it was not quite enough to convince the health sector. This highlights the issue around standards of evidence, discussed in Chapter 1. Practitioners felt

compelled to use the recognised tools, such as Warwick–Edinburgh Mental Well-being Scale (WEMWBS) or Office of National Statistics (ONS) personal wellbeing scales and others, but felt that these did not fit the timeframe of activities, or importantly, asked too-personal questions and therefore deemed inappropriate in the context of participating in most civic environmental activities. An environmental practitioner describes wanting more simple data, specifically relating to the activity:

Yeah, 'cause for me it was, I just really want to identify, “Does this activity help improve your wellbeing or not?”.

(Sienna - Env practitioner)

6.6.2 Right tool for the job

A key point made by most practitioner interviewees and especially within the focus group was the high number of tools available to capture health and wellbeing data. The medicalised nature of most of the tools was acknowledged by all practitioners who largely felt uncomfortable using this type of tool for the activity and audience:

Yeah, over the years, over the years, over the years I think we’ve used all, all of them, erm and there’s definitely a lot of them.

(Matt - Env practitioner)

Erm which is really quite clinical isn't it?

(Sienna - Env practitioner)

One of the key concerns amongst practitioners was having appropriate tools to capture wellbeing impacts for the job and the appropriateness of tools used in their outreach work. There were moral and ethical concerns over the use of overly medicalised, or misappropriate tools being used in the context of voluntary civic environmental activities. For example, the following quote came from a government practitioner interviewee who had also worked for a number of years in environmental outreach. It is a poignant example of the tribulations of capturing mental health and wellbeing data as part of environmental outreach work:

we were running the activity but also doing WEMWBS surveys which is actually quite awkward to do, it's really, it's much easier for someone to interview who's not part of the action that day, I would say..... I think one of the questions is something like "Do you feel loved?", might, m- I might be paraphrasing because it's a [muffled] and he had a, like this dawning moment that nobody loved him and I remember us feeling like awful, like literally awful and he had just to leave there and then and I, I always thought oh, do you know what, like we, both - the woman I was with, like we were both like we were literally that's just awful, you know, we never want to do anything like that again.

(Cathy - Gov practitioner)

The above example makes an important key point, the environmental practitioner wanting to use recognised wellbeing tools, but these being inappropriate in the context because the data capture tool had caused significant grief to a participant triggering mental health distress. As well as inappropriate, some tools feel awkward to use by environmental practitioners.

6.6.3 Awkwardness of using tools

Environmental practitioners described feeling awkward asking participants to complete personal details about their mental health. One practitioner (Nina - Env practitioner) gives an example here:

Yeah, yeah, so the young person's programme that I was recently on, these young people wanted to do climate action for their wellbeing. The first time I'd ever met them, really complicated wellbeing form about themselves,

(Nina - Env practitioner)

An environmental practitioner describes strategies used to try and avoid people feeling awkward or embarrassed by filling in forms about their mental health events, and sought ways to avoid this:

With the person, like you're not allowed to er, but we, you know, we sort of bent the rules or something and erm, we, we thought "oh well, we'll email it.".... And we didn't,

we didn't get great take-up on that and I don't know whether that's a slightly better way to do it,
(Matt - Env practitioner)

Again, this was less of an issue for mental health practitioners as they and their participant clients were used to completing forms asking about their mental health as part of their support service.

6.6.4 Wellbeing tools need to be accessible:

There was a sense that wellbeing data capture tools used for activities needed to be appropriate, non-intrusive and accessible, easy to use:

And s- oth- and as you know when you're working with some multiple deprivation communities, sometimes you end up .. people can't read or whatever, you know, you end up having to fill it out for them so you're almost like interviewing them and .. it cannot be like, take half the session out with the evaluation can it?
(Cathy - Gov practitioner)

It's a- it's got a pre-questionnaire as well so it's not the time you really, I mean we, in a lot of cases, we're just trying to get, in the, in the first couple of questions just get people, you know, even to turn up, have a cup of tea, like that, that's like a pretty much an achievement in the first session to be honest with you.
(Matt - Env practitioner)

Therefore, the types of questions, the amount of information asked and the accessibility of the forms could be a significant barrier to capturing data.

6.6.5 Form fatigue

The issue of too many forms was significant. Practitioners described how the number of evaluation forms they were asking participants to complete (usually at the request of funders) was unworkable or inappropriate. Two examples:

Yeah, it's definitely personal questions and it's.. sometimes that's like three or four .. times you're doing that in a week, do you know what I mean?

(Sienna - Env practitioner)

Our regular volunteers are sick of forms because they get, they get our funding for example, from [org name removed] so then they have to do the wellbeing form for [org name removed] for six weeks and then do another wellbeing form for [org name removed]

(Nina - Env practitioner).

Form fatigue was reported by both mental health and environmental practitioners. This was seen as an unreasonable amount of forms to complete, which could end up being a barrier to engagement and participation itself.

6.6.6 The 'messy' business of evaluation

In an attempt to have a standardised framework for collecting wellbeing data from nature-based activities, a broad brushed approach to collecting wellbeing data is being pushed by government, but this 'one size fits all' approach is not perceived as being appropriate:

I-I push back internally because there has been a t- a nature connection tool created i- in .. and I felt it was more suitable to formal ecotherapy kinda sessions... And I was like, just "and I'm not doing it" [laughs] and, and the feedback was "Okay", I said because erm ... because it's, we're trying to build trust and you cannot build trust by asking super personal questions of people when you're doing a light, light, light touch activity.

(Cathy - Gov practitioner)

An insight into the internal wranglings at government level to get the evaluation right, as government practitioners describe the predicament of having senior leaders discussing lack of evidence without understanding the practical implications on the ground:

it's a challenge between delivery versus actual sort of the systems change that's required at a top level system.

(Tom - Gov practitioner)

So we're still at a point where it's very siloed what you have but erm, the point is I think that it doesn't come er, from a place of, "We're trying to be awkward from national colleagues," it comes from a place of, "I know what I need to provide to change the system, you need to provide me with the data and evidence." But it's messy in the in between.

(Tom - Gov practitioner)

there is something about continuously asking people to give feedback as well

(Rachel - MH practitioner)

Practitioner Tom - Gov practitioner, describes the business of evaluation as 'messy' as systems operating on different levels are not cohesive and are disconnected. For example, high-level discussion within government regarding the need to capture standardised data, does not translate well with the realities of practice and people as individuals with their own circumstantial pathways and motivations.

6.6.7 Toolbox needed

The findings here show that there are considerable issues around wellbeing data capture relating to appropriateness of tools, the types of data captured, the accessibility and ease of use of forms. The perceptions presented would indicate a need for a variety of tools for a variety of needs and pathways:

it doesn't work for everyone, and I think having a multitude of different ways to look at an individual's outcome and also a service level outcome, so a different framework for the service level and the something for individuals

(Rachel - MH practitioner)

6.6.8 Practitioner confidence in tools

Overall, the data would suggest that practitioners – particularly environmental practitioners – lack confidence in using many wellbeing data capture tools, but do so at the mercy of the funders. A mental health practitioner interviewee, highlighted the need for practitioners to really rationalise *why* data is being captured and *what for*. A call to be bolder and more creative in finding appropriate ways (tools) to capture relevant data.

6.6.9 Summary of ‘Measuring outcomes – tools of the trade’

Chapter 1 introduced the silo-ed nature of the relationship between the environmental and health sector, and more explicitly the way in which standards and hierarchy of evidence are misaligned with the realities of evaluating social programmes, such as civic environmental nature-based activity programmes. These are important points as evaluations and appraisals shape funding and policy, which in turn impacts on contextual factors and practice. The ‘messy’ issue of which methods of evaluation become the tools of the trade, mirrors the silo-ed cultures and the systems operating at different levels between health and environmental sectors. This ultimately has a practical detrimental effect on civic environmental programmes – in terms of funding, sustainability and deliverability.

It is evident that environmental practitioners are seeking more guidance on the use of tools. However, this does not address the problems relating to the misalignment between the style and scope of data captured and the context, i.e. personal pathways by which people participate. The co-design of tools between the health and environmental sector may offer some solution, to producing a selection of tools that are appropriate and user-friendly (the rationale behind developing and using the GWTWB questionnaire as one method of data collection. To summarise this section on measuring outcomes, the words from a mental health practitioner, perhaps sums up the issue:

*it's a bit of a mastery to think about how to engage with people about their experiences
and to measure those outcomes
(Rachel - MH practitioner)*

6.7 Chapter 6 Outcomes - summary

This chapter presented findings that were concerned with the Outcome of the C-M-O configuration. That is, the change or difference in wellbeing that participation in activities had made. Findings from all three datasets to a lesser or greater degree, as appropriate, have been presented under key themes: how wellbeing has been expressed in relation to hedonistic and eudaimonic wellbeing; unintended consequences from participation leading to negative impacts; measuring impacts - how practitioners know whether enhanced wellbeing has been reached, or not.

This chapter presented findings that demonstrated participant's experiences resulted in a mix of hedonistic (more immediate 'feel-good') and eudaimonic (longer-term purposeful) wellbeing. The hedonistic attributes included an uplift in mood, and descriptions of reduced stress and relaxation. Eudaimonic wellbeing attributes were described, which would reflect a developing deeper determination in relation to personal growth (such as confidence and positive affirmation) coupled with a positive relationship with the physical space supporting agency and sense of purpose through meaningful activity. It would appear that activities are enjoyable in a hedonistic way, but those participants that describe longer involvement (but not exclusively so) in activities also describe feelings and emotions attributed to greater eudaimonic wellbeing. Having a closer understanding of the journey to wellbeing outcomes in this way, has significant implications for policy and practice. In the context of prevention strategies, whether to address public health priorities (poor physical and mental health and wellbeing), climate change and biodiversity loss, people's lifestyle choices and behaviours, small steps and adjustments could make significant impact. Therefore, understanding the participant journey from drivers, motivations and pathways, which lead to triggering positive responses resulting in positive outcomes, which in turn feed motivations, is crucial. This will be discussed in detail in the next Chapter 7, Discussion.

Negative impacts were explored across three key themes: social dynamics; participant and organisation dynamics; the elements. Chapter 5 Mechanisms demonstrated that for some, the opportunity for social connections is a key driver and mechanism for enhanced wellbeing. However social dynamics can be turbulent both intra-group and

with the wider community. Findings show that the dynamic between participant and organisations can take a wrong turn and result in negative wellbeing outcomes. It has been discussed that the weather can have a negative impact on participant experiences, and there are considerations for how poor weather either becomes a challenge (with a positive outcome) or a barrier to enjoyment (for example, exasperated through poor kit). These factors can therefore become a barrier to participation and interrupt the participant journey as described in the above paragraph. This thwarting of determination will be explored further in the next chapter.

Finally, findings suggest that the process of capturing wellbeing impacts is experienced by practitioners as being confused, awkward and messy, with ethical considerations for the participant experience. A one-size-fits all approach to evaluation seems unfeasible, however a common framework, offering various tools for different engagement models would seem a reasonable request that would benefit practitioners and policymakers alike and some recommendations for this are discussed in the next Chapter 7, Discussion.

7 Chapter 7 Discussion

7.1 Introduction

The aim of this study was to understand how and why wellbeing impacts may be derived from participation in civic environmental activities in an urban setting (see aims and objectives section 1.6). A realist evaluation approach was used to identify the Context-Mechanism-Outcome configuration across the programme theory (as discussed in Chapter 3 section 3.6.5). The C-M-O configuration is dynamic, multifaceted and each component inextricably linked and therefore another helpful dimension that describes the interaction between participant 'reasoning' and programme 'resources' to enable mechanisms to engage to produce outcomes (reasoning + resources = mechanisms-outcomes) (Pawson & Tilley, 1997). Therefore, the approach to this study took into account a broader perspective beyond that of the user-experience alone.

The purpose of this chapter is to explore the meaning of the findings across the C-M-O configuration as a whole to enable discussion in order to determine the 'so what?', i.e. the new knowledge and perspectives derived from this study. In doing so, the findings are evaluated in the context of the wider literature bringing in formal theories to explicate a deeper understanding of the processes at play. Ideas will be presented for how the findings, supported through wider literature and applied psycho-social theory could be used to shape policy and practice that addresses health and wellbeing whilst incorporating contextual factors that have a material effect on the success of programmes. A cumulative summary of the C-M-O configurations and applied explanatory psycho-social theories is found at the end of this chapter, Table 7-2 & Table 7-3.

7.1.1 Approach to Discussion

The scope of this chapter considers the complex characteristics of Programme Theories, i.e. being open, porous and dynamic open systems (Pawson and Tilley, 1997; Wong et al., 2012). To illustrate the depth and complexity, a considerable amount of data have been used, i.e. three datasets (1 x mixed methods; 2 x qualitative), which

included perspectives from both participants and practitioners. Therefore, the points of discussion aim to be clearly defined, with a clear rationale to ensure that the end result is comprehensive but cohesive, produces new knowledge and insight that is meaningful to policy and practice, being loyal to Pawson and Tilley's mantra that realist evaluations are realist, real and grounded in reality (Pawson & Tilley, 1997).

The discussion will triangulate the findings presented as C-M-O in Chapters 4, 5 and 6 respectively. Chapter 4 presented findings on the contextual factors which included participant motivations and pathways that lead them to activities (reasoning) as well as some of the practical considerations experienced by practitioners to enable programmes to happen, such as strategic aims, funding, access to land, etc. (resources). These contextual elements are essentially circumstantial factors, 'ingredients' that make activity programmes feasible. The contextual factors are an important part of the story. Therefore, this chapter will discuss how the findings relating to the contextual factors provide fertile ground for psychological-social processes to flourish which catalyse participant's reasoning, hopefully leading to participants feeling better for their experience, as part of their own quest for better health and wellbeing.

Chapter 5 presented findings on the mechanisms, the various 'ways to wellbeing', i.e. the factors that support (or trigger) ways in which participants respond to opportunities to enhance their wellbeing. The starting point for this study was the Five Ways to Wellbeing framework: Be active; Connect; Take notice; Learn; Give Back (Aked et al., 2008). These – along with a sixth theme 'sense of self' – supported by the contextual factors, worked in different ways for different people. Mechanisms describe what it is about a programme that brings about any effects, i.e. the process of how participants interpret and act to an offer will result in an outcome. Therefore, this chapter will discuss these findings in the context of broader literature and theory with the aim of reaching closer understanding of this process and the implications for maximising the user experience.

Chapter 6 presented findings on the desired outcome – enhanced wellbeing. The quantitative and qualitative findings show that participation in civic environmental activities does have a positive impact on hedonistic and eudaimonic wellbeing. The

qualitative findings showed that circumstances can thwart the user-experience and have the opposite effect resulting in a negative experience for participants. Although these instances were much less prevalent, learning can be gleaned to improve the user-experience. Findings highlighted the tension between the environmental and health sector when it comes to capturing and evidencing wellbeing impacts and how, this has become a material issue in the wake of green social prescribing, will be discussed in this chapter.

This chapter will return to the realist enquiry, presented as the sequence, '*what works, for whom and in what circumstances?*' and present the broader discussion on the findings. Each part of this sequence will be addressed in turn. To note, the enquiry is intended to be one sequence, therefore the purpose is to provide structure in presenting discussion on each part of the sequence, rather than any intended disaggregation of the sequence itself. Section 7.2 'What works?' will return to the mechanism themes (Five Ways to Wellbeing and 'sense of self') and relevant contextual factors that may influence what works for some and less so for others. Section 7.3 'For whom?' will discuss, based on the findings, whether and why demographic considerations may or may not influence '*what works?*'. Section 7.5 'What circumstances?' addresses the circumstantial factors that play a crucial role in supporting or thwarting what works for whom. The final section will summarise discussion which will underpin the conclusion and recommendations presented in the final Chapter 8.

7.1.2 Theories used in this discussion

The discussion within this chapter will draw on theories to help explicate the meaningfulness of findings. Chapter 3 Methodology section 3.4 gave an introduction to the role of theories and the use of substantive or formal theories to help shape the design, and/or interpret the findings (Rameses, 2017). As previously discussed in detail, a realist evaluation is testing a theory, or a set of theories about what might cause change (programme theory). The job of the realist evaluation is to make the theories explicit, to reach through to the heart of the causal mechanisms at play. In keeping with a realist evaluation approach a range of theories will be used to explain the findings withing the context of the previously triangulated data.

The theories applied to this research fit within the TAPAS framework (Truth Abstraction Progress and Applicability Standards) are recognised in the field of social psychology. The Five Ways to Wellbeing (Aked et al., 2008) itself an informal theory that a set of actions, ‘ways’, will lead to enhanced wellbeing, was used as a framework and starting point to explore the casual mechanisms.

Any formal theory or theories used to help interpret these findings would have to be able to take on the key themes attributed to the causal mechanisms. Since the activities take place in a natural setting, and contribute towards creating, curating and being a custodian of natural (green) spaces, two theories on the therapeutic power on nature would appear to be a good starting point. Where appropriate the well-established Attention Restoration Theory (ART) and the emerging Green Mind Theory (GMT) will be applied (both introduced in Chapter 2, Literature Review, section 2.5.1).

Although the phenomenon in question takes place in natural environments, applying only these ‘green-based’ theories would limit insight therefore Self Determination Theory (SDT) is brought into the discussion to address the multi-dimensional nature of the phenomenon in question, particularly the motivational drivers. SDT is a good fit for this study as it directly addresses psychological needs, *competence*, *autonomy* and *relatedness* all of which are relevant to explain psychological processes and drivers relating to the phenomenon.

SDT is a macro theory on human motivation and personality based in social context (Deci & Ryan, 2012). SDT differentiates between autonomous and controlled motivation. There are ‘mini-theories’ under the macro theory of SDT, that address different but related issues and are used to guide the application of research on new issues ranging from motivation, relationships, enhancement and depletion of vitality and wellness, mindfulness and nonconscious processes in behaviours (Deci & Ryan, 2012; Ryan & Deci, 2000; Legault, 2020). Therefore three ‘mini-theories’ have been applied to this discussion: Cognitive Evaluation Theory, Organismic Integrational Theory and Basic Psychological Needs Theory. All three bring nuanced insight into the key findings.

In summary the use of theories in realist evaluation has been discussed in Chapter 3 section 3.4, along with the rationale and insight into the formal theories used in Chapter

2, section 2.5.1. The theories will be integrated into the key findings, as appropriate, to explicate further the meaning to the findings. The aim of this section is to get under the skin of the reasoning, and by understanding this further, contribute towards the pursuit of refining the programme theory.

7.2 What works?

7.2.1 Understanding the drivers to ‘feeling good’

The concept of wellbeing is defined as feeling good and functioning well (Aked et al., 2008). There is recognised understanding that attributes to wellbeing include having a sense of purpose and control over one’s life, having positive relationships (i.e. how well we are functioning), combined with sense of happiness, joy, pleasure, contentment and engagement (i.e. feeling good) (Deci & Ryan, 2012; Aked et al., 2008). The following sections will provide discussion on the findings in relation to key drivers to feeling good, i.e. enhanced wellbeing. Theories explaining psychosocial and behavioural processes support the discussion around participant reasoning (motivations) and resulting mechanisms to the desired outcome of enhanced wellbeing. This approach was applied to the key themes under the Five Ways to Wellbeing framework and additional key theme ‘sense of self’.

Theories such as Green Mind Theory elude that ‘caring for the planet’ is a possible driver to wellbeing, and this is reflected in emerging grey literature as a ‘6th Way to Wellbeing’. Given this is identified as a contextual factor, this postulation will be discussed based on the findings from the study.

7.2.2 The Five Ways to Wellbeing

Discussion will now focus on each of the Five Ways to Wellbeing, in turn.

7.2.3 Being active – at one’s own pace!

The ‘Be active’ messaging from the Five Ways to Wellbeing (Aked et al., 2008), is based on self-efficacy, for individuals to undertake physical activity as an action for increased wellbeing based on their own ability and fitness levels, making this an attainable and accessible action for most.

In Chapters 4 and 5 the findings presented on 'Being active' showed that the physical activity aspect of taking part in civic environmental activities had varying levels of appeal, therefore it was not a motivational driver as such for all participants, nor a key mechanism for everyone leading to enhanced wellbeing. In relation to physical activity, quantitative findings suggest that those seeking physical activity enjoyed the physical activity aspect of activities. There was a trend for participants with a higher mood score to have enjoyed the physical activity. There was no significant pattern across ages, gender or participant's personal pathway to activities in relation to the quantitative data. The qualitative findings show that exercise particularly intersected with for example, fresh air, socialising and for a purpose was deemed enjoyable. Some enjoyed being challenged physically and for some the physical activity became too challenging and hindered enjoyment. The findings resonate with the qualitative literature relating to civic environmental activity and physical activity, where studies reported perceived increase and benefits of physical activity (such as Birch, 2005; Burl, 2007; Wilson, 2009; Townsend, 2006). In their systematic review of civic environmental activities and health and wellbeing, Lovell et al., (2015) make the point that, participants from a formal health pathway were likely to expect physical activity to be part of the experience, but actually those from a non-health pathway also reported perceived benefits from physical activity, but this was not evident from all participants.

This 'horses for courses' conclusion from the findings and literature is supported by broader literature, for example, White et. al., (2023) refer to an abundance of evidence to show that activity has a positive association on mental health with an inverse trend towards poorer mental health. They highlight that the strength of the association varies differently across studies but ascertain that taking part in physical activities are highly dependent on the context. Behaviours can be altered by a variety of environments, for different reasons and in different scenarios. Furthermore, White et. al., (2023) argue that it is possible that the contextual factors, i.e. how why and where people participate, can have an effect on moods and emotions, during and after exercise. Peluso & Andrade, (2005) postulate that social interaction is key to mental health whilst exercising however there is little research available currently to substantiate this theory. According to Thompson-Coon et al. (2011), in their systematic review on

outdoor exercise and physical and mental wellbeing, exercising in the outdoors may have greater psychological outcomes than exercising indoors. However, White et al. (2023) point out that whatever the physical environment, there is a gap in the current published evidence about the aspects of the outdoor environment, to include factors such as weather, other people, equipment, cues, meaningfulness of the activity. White et al. (2023) argue that perhaps there is no single type of physical activity best for health, but it is the contextual factors associated with the different physical activity behaviours and activities that have an impact on psychological outcomes. The contextual factors raise an interesting point in relation to this study as the physical activity component of taking part in activities is in the context of the wider experience, rather than physical activity per se. This could suggest that the physical activity becomes more 'hidden' and embedded within meaningful and purposeful activity. Therefore, the context in which physical activity is undertaken becomes a key factor in the intrinsic value and rewards. To explore this notion further, there are parallels between this study and a recent study by White et al., (2023).

White et al., (2023), reported the limitations of using purely quantitative data assessment that give little insight into the environmental or contextual factors that might influence the impact of physical activity in different scenarios, and therefore conducted a study to better understand the contextual factors that influence the mental health benefits of physical activity. White et al (2023) used an online open ended qualitative questionnaire, during a lock down period due to Covid-19. They sought to include questions that would unpack the social context of physical activity and used questions that may draw out social connectedness, self-efficacy and self-esteem. Using Reflective Thematic Analysis (like this study), one key theme to emerge was that physical activity provides opportunities to feel a sense of accomplishment, leading to internal positive rewards. Participants reported that they had a high sense of satisfaction of achievement, or doing something good. Like this study, their study showed that the activity provided an opportunity to feel better about oneself and this had a positive impact on mood, as well as evoke a sense of pride and increased happiness. The sense of accomplishment was so strong that this could lead to a sense of being able to 'take on anything' after a spell of physical activity – this was consistent

across a wide spectrum of physical activities but included those in an outdoor, natural setting. Participants reported a sense of accomplishment through the experience of having learned something new, a new skill. Similarly, the physical exercise was a vehicle for goal-setting and achieving goals, which then reinforced a sense of accomplishment (these latter two points were not attributed specifically to physical activity in the outdoors).

The findings from this study and the conclusion by White et. al, (2023) are aligned with SDT; namely, that competencies, autonomy and relatedness associated with the experience could form positive steps towards physical activity becoming identified, integrated or intrinsic motivations for physical activity in the context of the activities themselves, in the outdoors, with others. Findings from the literature review acknowledged the relationship between self-agency and physical activity (Hunter et al., 2015) and this might lead to increased wellbeing (Barton & Pretty, 2010; Coombes, Jones & Hillsdon, 2010; Bird 2004). This therefore can be justified as sound ‘reasoning’ for some.

The implications for this in practice suggests that participation offers opportunity for undertaking spells of physical activity which intersect with other factors, such as fresh air, sense of achievement, in social setting etc., that may make the physical activity aspect more enjoyable, palatable, hidden even. For some, the challenge of doing something physically active in the outdoors held great appeal, supporting competencies and was therefore an intrinsic motivational driver for involvement. Negative experiences were brought on in some cases by the physical activity expectation being too challenging particularly in the outdoor terrain and elements, thus thwarting competencies. Therefore, in order to support various competencies and autonomy it is beneficial to allow participants the opportunity to make the physical activity as challenging as they want it to be – to go at one’s own pace.

7.2.4 Social connections – being part of the ‘tribe’

Existing evidence suggests that feeling valued and having a sense of closeness to other people is an innate need, and one that is of key importance in functioning well (Aked et

al., 2008; Deci & Ryan, 2012). This may well vary between individuals and across time but is relevant to all age ranges (Deci & Ryan, 2008).

Social networks are about quality of relationships, rather than number of relationships, as one may well be sociable, but lack depth of relationship. Strong social relationships are mutually supportive, meaningful and encouraging (Deci & Ryan, 2008). Wider and perhaps more lightweight relationships are still important as they can affirm one's position within a community, for a sense of connectedness, familiarity (tribe) and self-worth. Therefore, it is important to both broaden and strengthen relationships for enhanced wellbeing (Aked et al., 2008).

In Chapters 4 and 5 the findings presented on 'connecting with others' suggest that participation in civic environmental activities is highly sociable and this was broadly highly valued by most. The qualitative data suggests that activities are sociable, supported by Husk, (2016); Wilson, (2009) and O'Brien et al., (2011); O'Brien et al., (2010), particularly for those seeking sociable activity and linked to a higher post activity mood score. This did not significantly vary by age or gender. The qualitative findings suggested that the opportunity to meet new people, strengthen relationships and mix with like-minded people was highly valued. For some, particularly the corporate pathway and those who sought to re-establish a sense of self, seeking to forge and nurture relationships it was a motivational driver as well as a key mechanism, which lead to reported enhanced wellbeing. Two aspects of relationships were prevalent from the findings: the participant to participant relationship and in some cases, the participant to practitioner relationship.

SDT recognises relatedness is a key anchor and by the 1980's SDT research brought about a fourth sub-theory of SDT, to the original three nutrients: autonomy, competence and relatedness, that of wellbeing and mature relationships. Organismic Integrational Theory (OIT), a sub-theory of SDT, concerned with autonomy and affinity with others. OIT sought to explain how extrinsic motivations could become autonomous, leading to the concept of *internalisation*. This differentiation between internalising extrinsic motivation that is controlled by external factors and internalised extrinsic motivation that is autonomous, i.e. self-driven. The latter is supported by having an affinity with others, i.e. the third basic SDT need, that of relatedness, a need

to belong (Baumeister and Leary, 1995). SDT and OIT clarify the value and dynamics of the social experience supported by the phenomenon in question, i.e. civic environmental activities for enhanced wellbeing. The findings from this study showed that participation in activities, in the right conditions provided an opportunity for all participants to forge new relationships, strengthen relationships and bond over a common cause. This leading to a sense of relatedness, i.e. belonging through shared endeavours and experiences, in some cases shared life experiences, feeling part of the 'tribe'. The essence of which could imply a conflict with autonomy, an essential psychological need according to SDT. However, in done the right way, the phenomenon in question, supports autonomous reasoning by the participant whilst supporting opportunity to experience relatedness and relationship development. SDT asserts that autonomy and support from others can be complimentary. For example, it is perhaps a cliché that one gives up on one's own autonomy when in a close personal relationship, romantic or otherwise. However, SDT rejects this notion and asserts that the recipe for a strong and/or intimate relationship is to reattain autonomy, and support autonomy, within a relationship (Deci & Ryan, 2012). Attachment theorists will claim that attachment models carried out later in life stem from initial interactions with primary caregivers. SDT researchers have however claimed that there is variance in attachment theory indicators both between-person and within person level. Instead, experience of security is derived from the level of psychological need relating to autonomy and supporting autonomy within the relationship. This is supported by Lynch et al. (2009) and Deci et al., (2006), who examined autonomy support from others and found that relationship satisfaction and self-functioning was higher in autonomy supporting relationships leading to higher wellbeing. This is an important point in the participant-practitioner relationship. For some, especially those seeking therapeutic rehabilitation, their relationship with the practitioner was an additional component of the social experience and the one-to-one (rather than top-down) relationship reaffirming their competency, supported by Carter (2008) study with similar cohort and Shalaby & Agyapong, (2020). This was reaffirmed by practitioners particularly from mental health who furthermore described the high levels of support, empathy and understanding required to create the safe environment needed for participants to flourish in the context of their services. This would suggest that autonomy and

relatedness are mutually supportive of people's wellbeing. The findings presented strong evidence to support this. For example, participant to participant relationships amongst the corporate cohort, the sense of team brought about camaraderie and a safe place to practice personal and shared goals, particularly for those newer to activities. This was extended further for those seeking rehabilitation where the sense of togetherness between participants was underpinned by a mutual understanding of each other's life experiences and challenges, which led to a support group dynamic, described as pulling each other up when one was down. Similarly, the findings from this study showed that those seeking to reestablish or escape their assumed life-roles and responsibilities, sought respite through forging a sense of togetherness with others to play a key role in creating change to environments through their efforts.

Conversely autonomy and relatedness can be an antagonistic combination if a person in the relationship holds one against the other, e.g. autonomy sacrificed to please or receive affirmation from another, in which case would have the opposite effect. This reverse effect is evident in the findings from this study relating to the negative wellbeing outcomes associated with group dynamics and power imbalances. For example, participants feeling overwhelmed or overburdened due to unrealistic expectations from their peers or organisations in their role as custodians of public realm greenspace.

To conclude, SDT has been applied to the findings to understand better the social aspects of the phenomenon. OIT asserts personality development and self-regulation. The concept that social contexts facilitate or impair internalisation by either supporting or thwarting basic psychological needs is a social psychological concept (Deci & Ryan, 2012). Therefore, the implications for practice must include a recognition that the more social contexts are inclusive, accepting, supporting competence and autonomy, the more people internalise ambient social values. Based on the findings this has implications for practice in relation to highlighting the social opportunities and facilitating the optimum social ambience. Where there are imbalances in dynamics, thwarting autonomy and relatedness, then unintended consequences can occur leading to reduced wellbeing. If enhanced health and wellbeing is the desired outcome from a programme, autonomy and the ability to choosing the setting for social situations is key. For those seeking some form of social experience to improve their

wellbeing it's clearly vital that autonomy comes into play which would extol the need for a variety of ways in which participation can occur to support finding one's own tribe, coming together of like-minded people to achieve common goals, supported by Christie (2004), Caissie & Halpenny (2003) and Gooch (2005).

7.2.5 Taking notice – 'quieting the chatter'

Taking notice of nature implies observant awareness of nature or noticing the peacefulness of nature and associated sounds (such as bird song). The importance of observant awareness for enhanced wellbeing has been recognised in many theories in the field of psychotherapy and psychopathology where experiencing vividness and clarity of the moment can also enhance a sense of happiness (Omid et al., 2013; Mace 2006; Martin 1997).

Aked, et al., (2008) rationale for mindfulness making the final cut for the Five Ways to Wellbeing is based on the strong evidence base indicating mindfulness as a mechanism for enhanced positive mental states and self-regulated behaviour, citing self-determination theory to explain the deeper intrapersonal processes in play. By having an open awareness of one's actions in the moment is beneficial for supporting one's intrinsic needs and values, as a means to self-regulation which is shown to be an important factor in humans flourishing and wellbeing. Aked et al., (2008) rationale includes research that shows goals and behaviour change should be aligned with personal values in order to be successful and that a sense of ownership of ones actions, furthermore savouring those actions is crucial in achieving lasting behavioural change in the quest for sustained lived-experience of state of positive wellbeing.

'Taking notice' of nature and having moments of mindfulness is supported by SDT. SDT ascertains that autonomy, and autonomous processes are not limited to conscious decision making, but instead are related to endorsing actions and non-conscious initiation of actions or behaviour. Research has linked mindfulness with autonomous self-endorsed regulation, greater needs satisfaction and therefore wellness and wellbeing (Deci & Ryan, 2012). However, the concept of 'taking notice' centred purely on mindfulness practice alone, is somewhat limiting when it comes to the phenomenon

in question. In Chapter 5 the findings presented on ‘Take Notice’ illustrated that the connectedness to nature aspect of taking part in activities had varying levels of depth and meaningfulness, therefore there are various aspects to consider. Firstly, the exposure and having access to nature as a contextual factor. The original programme theory uses the context of the natural environment, i.e. *exposure* to natural environments as a starting point for being the medium by which the activities take place. The importance of having access to nature being well understood from the pool of existing evidence and theory. Indeed, findings would indicate that for many their appreciation for nature informed their rationale for their involvement (reasoning), which was often expressed as wanting to ‘be outdoors’. Secondly, an interaction with nature through the activities designed to look after, nurture or make improvements to the natural landscape was reported as providing high levels of satisfaction and achievement. Thirdly, expressed by fewer participants was a deeper ‘mindful’ connection with nature. However, all three examples should be viewed as a connection to nature of sorts. Interestingly, in the context of civic environmental activity, this chimes with Lovell et al., (2015) review where they differentiate a connectedness to nature as being themed as ‘benefits of place’, or ‘spirituality’ mindfulness and spiritual growth through nature. Lovell et al., (2015) theme ‘benefits of place’ referred to motivational drivers to look after nature and making the environment ‘cleaner’ for nature, contrasted with the spiritual side of being at one with nature, reporting the former was more prevalent than the latter which would concur with the findings from this study. For example:

Yeah, erm, I just love anything to do with nature, erm, erm, I love keeping things clean
(Carl - participant)

Sometimes I get quite emotional when I’m in nature as well, if it’s really beautiful ..
(Emily - participant)

The findings from this study suggest that the range of ways in which participants find their own connection with nature are influenced by life experiences. According to White et al., (2023) these differing connections with nature are biopsychosocial processes that can lead to individual resilience.

The quantitative findings from this study highlighted that having a connection with nature was important and those specifically seeking a connection with nature did indeed experience a connection with nature, although this was not significantly different across gender, pathway or age. There was a strong relationship between enhanced mood post activity and having a connection with nature, which supports the literature on exposure to nature having a positive effect on mood.

Green Mind Theory has its moment in the spotlight at this point to explicate the findings in relation to taking notice of nature and a sense of connection to nature. GMT ascertains that a green mind has a mix of brain processes, 'red' and 'blue' with a predominance of 'blue' to calm alert 'arrows' (fight or flight experience) by increasing parasympathetic nervous system (PNS) through a conscious effort to focus, be attentive, have heightened awareness and immerse oneself in an activity or task. This is acknowledged by Green Mind Theory (Pretty, Rogerson & Barton, J, 2017) as a way to 'quiet' a busy mind or 'chatter'. Activities that require high levels of concentration are immersive and lead to calming effects through slowing the breath, reducing oxygen consumption (Wallace, 2006), lowering blood pressure and producing an increase of dopamine and serotonin (Esch et.al, 2003). This immersive attention is prevalent during some green exercise (Wood et. al, 2016; Van Den Berg & Custers, 2010), mindfulness and other meditative activities more akin to traditional cultural practices. These activities are calming and take time, meaning that it is necessary to escape the busy humdrum of modern life, pressures and responsibilities. This aligns with Kaplan and Kaplan's (1989) Attention Restoration Therapy, which advocates focused attention for therapeutic and restorative purposes leading to increased wellbeing. The concept of taking time to take 'time-out' through green mindfulness practice is not straightforward: it presents opportunities as well as challenges.

From a salutogenic perspective, opportunities for immersive-attentive activities and practice could, over time, help to counterbalance and shape habits and behaviours over a longer-time period that could influence resilience and wellbeing. Pretty, et al, (2017) attempt to make an estimate for how long any behaviour change might take, for example, 50 days at one hour a day, or 100 days at half an hour a day. This approximate guide is not backed by anything robust and would appear to be largely guesswork. In

fairness this may be highly individualised in any case. An approach to try and quantify hours of immersive activity to drive forward behaviour change on the one hand is understandable due to the practical nature of the commissioning culture for health and wellbeing services, similarly labelling Green Mind Theory as a ‘dose of nature’ a play on ‘dose of medicine’ fitting well with the language of the health sector, implications for which will be discussed later into the chapter. Attempts to quantify in monetary terms how much a ‘dose of nature’ is worth as part of the commissioning process is arguably contradictory to Green Mind Theory’s underpinning ideology which challenges capitalist economic models in favour of social and natural capital accounting. However, this type of accounting is abstract by nature and not currently providing the ‘real-money’ return on investment, with a reliance on metrics may lead to the undervaluing of urban green spaces (Isacs et al., 2023).

A ‘dose of nature’ has colloquial and linguistic appeal, however the reality of using abstract metrics to quantify a ‘dose of nature’ is both arbitrary and limiting, supported by Bell et al., (2019). For example, it could be argued that this approach to funding and terminology merely medicalises the opportunity, compounding the NHS’ rut of struggling to fix medical problems on a tight and finite budget. As will be discussed further into the chapter the ‘dose of nature’ type of commissioning has recruitment and resource issues, suggesting this type of labelling may not hold much currency in terms of appeal at the user-end. A salutogenic approach to engagement – supporting health and wellbeing – rather than treating illness requires behaviour change which relies on self-determination processes relating to autonomy, competency and relatedness. Practitioner perspectives revealed challenges to recruiting participants on set ‘dose of treatment’ style delivery model and health pathways compared to recruiting business-as-usual activities, therefore how activities are framed and promoted should be designed to appeal at the user-end.

Challenges arise from connection with nature, and this being the currency for ‘therapeutic’ value. Mindfulness practice itself takes time and practice and relies on giving oneself permission to do so (Kessen, 2009). The qualitative data from this study showed that some did experience mindful moments in nature, some tried but failed and others – especially those seeking therapeutic rehabilitation – did not express having

mindfulness moments but instead described their relationship with nature as helping to 'clean up' habitats and looking after nature. Findings in this thesis highlighted that mental health practitioners also made the point that for their clients, giving permission to simply enjoy and spend time in nature could seem self-indulgent when faced with other pressing social economic challenges.

Data from the interviews/questionnaires showed that a connection with nature was a key driver, but it was never just *the* key driver, nor necessarily the sole key mechanism leading to enhanced wellbeing. This is an important point as the assumption by some practitioners interviewed was that people participated 'to be in nature'. The wider findings would not support that view, and that it was the combination of being in nature with other factors, such as social opportunities, philanthropic thrills, personal growth and 'me time' that were attributes to the causal mechanisms, perhaps further enabling permission to spend time in nature.

When triangulated, the data showed that having a connection with nature was a key component of the nature based experience. However, nature connection's therapeutic value should not be limited to 'just doing something in nature', nor ring-fenced to a deep mindfulness connection with nature. The risk in doing so limits the full understanding of the phenomenon (how nature connection intersects with other factors) and arguably more importantly potentially alienates certain demographics thus exasperating health inequalities. Arguably the therapeutic value of improving nature, particularly in an urban setting, extends beyond having a conscious meaningful connection with nature (as per attention restoration and green mind theories) to activities in nature being meaningful and rewarding to the individual in their own way (akin to self-determination theory) supporting competence, autonomy and relatedness.

To conclude, the findings indicate that having a connection with nature was important but was also a contextual factor and therefore a key component to participation. It could be argued that the sense of being in nature is a given, i.e. its embedded within humans to be intrinsically motivated to be immersed in nature, and there is plenty of evidence to suggest that this could be the case. However, having a deep and meaningful connection with nature was not the key driver necessarily to participation, instead intersected with the multidimensional aspects of the activity leading to causal

mechanisms, i.e. nature combined with physical activity, sense of giving back, social connections etc. This hypothesis aligns with SDT, in that competency, autonomy and relatedness and Basic Psychological Needs Theory, setting goals in the context of nature, rather than pure immersion in nature. This differentiates participation in civic environmental activities from other types of nature-based activities, for example, Forest Bathing, immersing oneself in nature using mindfulness practises (Liz O'Brien, 2018; Pretty, Rogerson & Barton, 2017). Instead, the natural setting becomes the medium by which mechanisms can occur (which may or may not include mindfulness in nature).

7.2.6 Learning – a means to personal growth

Learning was selected as one of the Five Ways to Wellbeing because of the positive impact that goal directed behaviour is shown to have on wellbeing. This can be achieved through informal and formal learning but must be aligned with personal intrinsic motivation for wellbeing outcomes (Aked, et al., 2008).

The quantitative data suggests there was a relationship between learning and enhanced mood but this was weaker than other '5 Ways' such as feeling a connection with others and taking notice of nature. Within the quantitative data there was no significant difference across gender, pathway or age groups. The qualitative data however showed that those seeking vocational and health rehabilitation as well as those who were adjusting to changes in their lifestyle, later in life, highly valued the learning experience. These findings are supported by O'Brien et al., (2011) and Burls (2007) who reported that those seeking job rehabilitation found civic environmental participation rewarding in relation to developing skills and confidence through the use of tools. The evidence base and literature relating to adult learning and wellbeing (within indoor learning environments) is described as small but not insignificant and overall make claim to learning as an enriching experience, enabling learners to feel better about themselves and their prospects (Field, 2009).

The notion that (adult) learning has a positive influence on wellbeing is widely held and this claim has been tackled systematically in relation to evidence to support this view (Field, 2009). Studies and reviews of the evidence in this area have identified and highlighted the issue of comparing 'apples and pears' to the range of methodologies

and the focus on much of the research being centred on the relationship between adult learning and economic significance (i.e. hypothesis centred on wellbeing outcomes through personal development in the workplace leading to higher earnings) (Field, 2009). Jenkins & Mostafa (2015) supports Field's (1999) assertion that policy documents assume a link between participation in lifelong learning for better health and wellbeing (WHO, 2002), whereas in fact the evidence base remains slim.

Field (2009) makes the point that educators have insight into outcomes of practical learning that have been difficult to articulate in research and cites one of Britain's leading adult researchers, West (1996: 97) who articulates this frustration:

“Adult educators have consistently emphasised the re-creative function of informal learning and its importance to personal wellbeing yet have lacked a language to describe the dynamics involved and to explain why these may be crucial to emotional and psychological wellbeing.” (West, 1995: 97).

West (1995) and Field (2005) are both highlighting here that subjective wellbeing is challenging in relation to traditional empirical research methods being hard to define and operationalise. West's (1995) quote above makes an important distinction which is prevalent in the research in that increased wellbeing is attributed more to *informal* learning rather than formal learning. Some evidence suggests formal qualifications linked to work, may yield higher earnings, but do not have a significant impact on wellbeing, and can in some circumstances cause stress and anxiety (Field 2009). This is supported by SDT, the notion that monetary rewards and competition thwarts intrinsic motivation. Therefore, this would imply that the informal nature of the learning opportunities offered through taking part in activities would support intrinsic motivation leading to enhanced wellbeing, which supports the relevant literature in this area (Townsend, 2006; O'Brien, Townsend and Ebdon, 2010; Molsher and Townsend, 2016).

For those whom learning is a personal goal, Basic Psychological Needs Theory asserts that achieving personal goals aligned as intrinsic goals was associated with experiencing greater psychological wellbeing and less ill-being. Furthermore, Organismic Integrational Theory has been applied to some studies which have shown that outcomes such as wellness, engagement in purposeful activity and the learning

experience have been achieved through more autonomous types of motivation (Deci & Ryan, 2012). This was expressed by some participants as boosting their confidence. For example:

It gives me a boost, like in terms of a boost, um, but I think we also learned other, we learned other things that I think have made me think about things
(Sally - participant)

This would chime with those researching the world of learning. For example, Field, (2009), McGivney, (1999) and Aldridge & Lavender, (2000) propose that successful learning inspires confidence and optimism. This is particularly significant for participants seeking vocational rehabilitation through participation. If participation can enable personal growth through learning, this would no doubt improve the wellbeing and quality of life for some.

Evidence suggests that improvements to income has the highest wellbeing gains on those further down the social economic ladder, and for higher earners the gains are marginal (Field, 2009). Further to having an influence on earnings, and more relevant to this study is the impact of formal and informal learning on employability. The relationship between worklessness and poor wellbeing is well documented with a loss of income, social networks having a significant impact on self-worth and self-esteem (Field, 2005; Field, 2009; Warr, 1994). This could perhaps suggest that public investment into adult learning should target those at most in need, i.e. experiencing disadvantage, worklessness, deprivation, poor mental health. However, the other side of the debate may advocate that a salutogenic approach may well be more fitting, working further upstream to offer up learning opportunities for a sustained, engaged, healthy workforce for non-economic benefits. Field (2009) discusses self-efficacy, social capital, health maintenance, civic engagement and community resilience as contributing factors, or mechanisms, as indirect outcomes of learning for enhanced wellbeing, *indirect* because these facets have been overlooked by reviews seeking specific evidence on causation, hence the focus on the economic value of learning in relation to wages, sickness absence etc. Field advocates a broader spectrum of outcomes beyond economic growth and argues that wellbeing is one of the more

important outcomes in adult learning, and in turn leads to a better learning experience, for example self-efficacy and taking charge of one's own life and prospects, coupled with optimal health, increased levels of social connections and civic engagement (Field, 2005).

The data from this study showed that participants who valued learning, enjoyed the shared learning experience. Studies from the Research Centre on the Wider Benefits of Learning suggests that participation in learning activities can lead to increased social capital, to develop social relationships, extending social networks and supports a culture of tolerance and respect (Schuller et al., 2004). The shared learning experience is sociable which leads to increased social capital (Alaimo, Reischl & Allen, 2010; Glennie, 2020; Lai, Zhou & Yuan, 2021); Some research suggests that learning experiences can lead to increased confidence (Knasel et al., 2000).

To conclude, in line with SDT, for some enhanced wellbeing is achieved via the learning aspects of the experience through goal setting or fueling meaningful integrated or intrinsic motivations. The findings from this study using data taken from the GWTWB questionnaire (n=357) showed that a small number of people (n=15) described their personal pathway to activities was based on seeking better employment prospects. This is a consideration for practice in the promotion of activities to increase employability. Participation provides opportunities for personal growth and for those seeking vocational rehabilitation that could change the life course in relation to confidence in employability.

7.2.7 Giving back – big-hearts and some setbacks

Aked et al., (2008) included the action of 'giving back' within the Five Ways to Wellbeing as justified way for people of all ages to benefit from the increased social and cognitive development across the age spectrum, from children to adults and those of retirement age when framed as purposeful and meaningful activity. They also wanted to highlight the importance of the relationship between individual's wellbeing and the wellbeing of the wider community, where attributes such as sharing and giving back strengthen relationships for life satisfaction also stretch to the greater good.

Chapter 1 introduces the concept of participants to civic environmental activity being creators, curators and custodians of public realm greenspaces and the quantitative and qualitative data showed that this was both an important driver to participation as well as a mechanism to enhanced wellbeing. The findings showed that in some cases participation facilitated a sense of ownership over places and spaces, particularly for participants who had an affinity with a place (such as local residents) or those that were able to return to activities in a consistent location. For most though, a sense of satisfaction and pride from fixing places and spaces by making improvements and undertaking maintenance activities that made a tangible difference to the place. A 'big-hearted' gesture to the wider world. The findings suggest that the felt rewards were high for 'giving back' and conceptualised giving back to nature and the landscape as well as the social dimension of giving back to the community and future generations through improving the landscape.

There was very little mention of the notion of having a sense of 'giving back' for wellbeing in the literature (reviews and studies) relating to civic environmental activity. However, there was an emphasis on having a 'sense of achievement' and this was evident from the qualitative studies in this area (such as Christie, (2004); Burls, (2007); Gooch (2005) Townsend, (2006). Despite the lack of literature specific to act of giving one's time to 'give back' to the wider community through improvement of public realm green spaces, this action has a strong alignment with SDT. For example, the SDT macro-theory linking basic human needs, competency, autonomy and relatedness drive forward intrinsically motivated behaviours directly links to giving time to give. The notion that people self-consciously attribute more intrinsic motivation to carrying out tasks in the instance of a non-monetary reward for their efforts feels a good fit to the act of volunteering.

Furthermore, Cognitive Evaluation Theory involves the extent to which positive feedback enhances perceived competency, which supports the basic competency need that leads to enhanced intrinsic motivation. This applies when the positive feedback is autonomously motivated activity (Pritchard et al., 1977). What this means in relation to the findings is two-fold. Firstly, it suggests why for some participants, having a shared experience of making a difference by combining capabilities and

making a tangible difference was highly rewarding. Participants (from the corporate pathway) described wanting to recruit more people to activities, spurring people on to return and continue activities. If people experience greater wellbeing through participation, then a desire to repeat the experience on an intrinsic level is significant for maintaining wellbeing. Secondly, the sense of pride and accomplishment when others afforded recognition is very powerful in relation to self-affirmation and boosting self-esteem. The findings showed that there was evidence for some the 'giving back' was goal orientated, having a deep desire to help improve a space, through identified, integrated and intrinsic motivations and regulations, therefore formed part of their reasoning or their firing mechanism.

There were some setbacks. There were some reports from the corporate cohort who's reasoning underpinning their taking part was inherently extrinsically motivated, i.e. it was something they 'had' to do through work, therefore less self-directed. This introjected pathway could potentially be a setback, particularly when they questioned whether they had made a difference on the day (because that being the rationale for their attendance).

To conclude, the concept of 'giving back' extended beyond the wider community, to future generations and the landscape itself. The narrative 'giving back' was a motivational driver and a mechanism to enhanced wellbeing and this was significant. Some participants did question their impact particularly those whose participation was through a controlled pathway (corporate pathway). The implications for practice, based on SDT, would include managing expectation and providing a greater awareness, through positive feedback, on the difference participation makes to the wider community as well as the environment. This would help to nurture shifts between controlled and autonomous agency, for greater wellbeing benefits and continued, repeat participation.

7.2.8 Caring for the Planet – the sixth way to wellbeing?

Since the introduction of the Five Ways to Wellbeing (Aked et al., 2008), there has been an emergent (in grey literature) narrative about the concept of a 'sixth way to wellbeing –

caring for the planet'. This concept has been included in emerging theories such as Green Mind Theory and referenced in public communications to support mental health and wellbeing (an example Mental Health Resource, (2024)). Given that climate change and nature recovery agendas form part of the strategic context for this study it is worth exploring the notion of this being an addition to the Five Ways to Wellbeing Framework. It is important to note that the subject of 'making a difference to the planet' (in the context of climate change and biodiversity crisis) was not explicitly asked in the GWTWB questionnaire, nor in the first round of participant qualitative interviews. This was intentional, firstly because an established wellbeing model was chosen as a framework (Five Ways to Wellbeing). Secondly, the aim was to explore whether people might consciously attribute their actions towards making a difference to the planet and whether that is linked to their wellbeing. The realist evaluator is encouraged to make revisions along the data collection journey as necessary to explore relevant points of interest (Ramesesproject, 2021) and during the data collection period small amounts of data began to emerge from the GWTWB qualitative section and therefore in the second round of interviews, caring for the environment was a deliberate point of discussion. The subject of caring for the planet was not explicitly mentioned in the GWTWB questionnaire or interviews in the way that the Five Ways to Wellbeing was. Therefore, it's fair to say that as subjects (potential themes), the Five Ways to Wellbeing and 'caring for the planet' did not begin on an even playing field. However, the concept of 'caring for the planet' did not emerge as a theme in the way that 'sense of self' did in the amount of data that was attributed (coded) to each theme. During the period of data collection, this subject was broached but it still did not feature strong enough in the data to be classed as a mechanism. It was however unsurprisingly discussed at a practitioner level in much more detail, this forming an important part of the strategic context and therefore having implications for resourcing activities in public realm. The findings highlight that the majority of the participants did not directly associate their efforts with helping to manage climate change. For example, results from the GWTWB questionnaire showed that PRE-activity there were 24 qualitative references (3% of PRE-activity total references) relating to climate change or helping the planet. POST-activity there were only 6 qualitative references (1% of total POST-activity references)

that referred to helping the planet or climate change (see Appendix L). Not all participant interviewees prompted agreed that they were making a difference to the 'planet' (in the context of climate change) and seemed undecided as to whether the small difference they *could* make *would* make a difference. Practitioner interviewees were cognitive of the inextricable links between nature and climate and the impact on people, diet and health inequalities and this is recognised in academic literature.

Through the Green Mind Theory lens, Pretty, Rogerson and Barton (2017) take a holistic approach to their reviews of evidence, stating that the health benefits are direct and indirect. For example, the crux of Green Mind Theory is mantra that by improving individual wellbeing one can (and is) building towards greener and socially positive economies to protect the future of the planet – and vice versa. That is, by improving greenspace provision for the purpose of a more sustainable approach to global environmental issues, you are also improving people's health and wellbeing. Green Mind Theory asserts that nature-based activities not only improve health and wellbeing, but also contribute to improved air quality through enhanced green infrastructure as well as adaptation practices to help manage climate change through the physical landscape, reducing stressors associated with urban settings, which in turn improves health and wellbeing. Pretty, Rogerson and Barton (2017) argue there is enough evidence to show that greener environments are equigenic, i.e. they reducing environmental and social inequalities and the more connected humans are to nature, the greater their life satisfaction is. Improving wellbeing whilst undertaking action at a local level to help address global environmental issues would appear to be a win-win situation, a symbiotic relationship where each outcome (greener, social economy and enhanced human wellbeing) would drive forward the other, presumably in some sort of oscillating action in a reciprocal process - environments shape bodies and minds and minds change bodily behaviour towards improved social and natural capital.

However, the reality and complexity of impressing a climate change narrative either to attract participants to activities or during activities had mixed views by practitioners. Reports ranged from the narrative being underused and a missed opportunity to raise awareness of climate change through to it creating barriers to participation because it did not match individual's priorities or needs (i.e. their reasoning or drivers for

participation). Lived examples included co-production of carbon calculations relating to activities that appeared insignificant from a participant perspective.

Meeting participant needs rather than extrinsic agendas is an important point.

Cognitive Evaluation Theory, is a useful tool in explaining why this is so crucial. For example, the climate change agenda, and the 'climate emergency' narrative specifically, demands immediate behaviour change or suffer the consequences of the destruction of the planet through the demise of all living organisms, including humankind. This messaging and scenario is a prime example of external, introjected motivations, whereby external goals (however important) are pressed upon the individual. The messaging is ordered through extrinsic control and the issue feels so big, potentially leading to catastrophic consequences evoking a sense of hopelessness. This is likely to thwart intrinsic motivation to undertake activities and the extrinsic goal of 'doing your bit' that would lead to demotivation and apathy.

In this study a mental health practitioner made a point that participation could be used as a strategy to cope with eco-anxiety. This may be true however it may be subject to introjected internalisation, i.e. incur feelings of hopelessness and guilt. For example, Organismic Integrational Theory proclaims the importance of the internalisation process on motivation and regulation. Different types of internalisation processes are not necessarily healthy forms of behaviour, particularly introjection which is based on a sense of lowered self-esteem or internalised guilt (Ryan et al., 1993). However, identification and integration bare many of the hallmarks of being autonomous and having choice and therefore would support intrinsic motivation and autonomous forms of extrinsic motivation. The contest being the internalised sense that one should do something or feel guilty about it versus really wanting to do something as the action is relatable to one's own values.

To conclude, the issue of caring for the planet as the 'sixth way to wellbeing' is well-meaning but complex. Well-meaning because from the outset it would appear to present a win-win situation, but the issue is complex. Individual needs (which may not align with pressing global agendas) should align with competency, autonomy and relatedness to ensure that internalisation is identified, integrated or ideally intrinsic. Whether the action 'caring for the planet' will result in 'firing mechanisms' to enhanced

wellbeing will depend on motivations. As a supposition the outcomes may back-fire if deemed too external or introjected, creating at best apathy and worse increase climate anxiety.

7.2.9 Rediscovering sense of self – vitality & self-esteem

‘Sense of self’ was a key theme to come from the findings as presented in Chapter 5, this was a new theme beyond the Five Ways to Wellbeing. According to Deci and Ryan (2012), one’s sense of self is catalysed by the process of autonomy, more specifically choice and volition and this fuels vitality, or energy available to the self. Subjective vitality is an indicator of health resulting in satisfaction of basic psychological needs (Ryan and Frederick, 1997) and this is important in the quest for maintaining wellbeing, providing the thrust for effective self-regulation and dealing with life challenges which can have a detrimental effect on wellbeing. The findings from this study showed that participation in civic environmental activity for some, led to rediscovering one’s sense of self meant to shed the sense of feeling overburdened through circumstantial life-roles such as being a ‘nan, wife and carer’. This is supported by studies related to the phenomenon (such as, Burls, 2007; Carter, 2008; Christie, 2004; Gooch, 2005) and more recently horticulture therapy (Howarth, Lawler & DaSilva, 2021). Explained through a SDT lens, this scenario involves dealing with introjects, i.e. attempts to control actions or steer behaviour can diminish or be draining on energy and therefore sense of wellbeing, whereas autonomous self-regulation can be vitalizing (Ryan and Deci, 2008). SDT differentiates self-control, i.e. controlled regulation, from true self-regulation, i.e. autonomous regulation. Controlled regulation is found to be depleting on energy and vitality, whereas autonomous regulation promotes psychological needs satisfaction and therefore is vitalizing (Deci and Ryan, this chapter; Muraven et al., 2008; Nix et al., 1999). Therefore, these processes are important when understanding vitality and depletion. SDT ascertains that vitality, i.e. the energy available to the self is linked to physical and psychological health. Energy is also subject to biological and time-of-day factors (Thayer, 2001) which may support or thwart psychological needs which affect outcomes from motivation and mood. Barton & Pretty (2010) support this notion and articulate what it means to have good mental health: that it is not related to

an absence of disability or disease, but a mix of independence, self-satisfaction competency, capability and resilience (Bird, 2007). Mood is fundamental to daily life and a positive mood influences feelings of happiness, being in the moment, can give resilience to stress and is necessary to experience good quality of life (Hull, 1990). Evidence has linked mood to physical health and the body's immune system and coping with certain diseases. Changes in mood are linked to exercise and habitual exercise is linked to sustained changes in mood. Even a short duration of improved mood is a contributor to enhanced quality of life.

Those participants who were dealing with changes in their life course (such as retirement) and those seeking rehabilitation expressed ways in which participation had re-kindled a sense of self, which if assumed is a counterbalance to having low perceived competence, or low self-esteem. Cognitive Evaluation Theory suggests that information that conveys competence leads to feedback of intrinsic motivation. When this event confirms competency then it has a positive impact on intrinsic motivation because of enhanced self-esteem (Deci & Ryan, 2012). Self-esteem is a reflection on a person's sense of self-worth or how they value themselves and existing evidence suggests a strong relationship between good self-esteem and better general health and healthy behaviours, as well as poor self-esteem and mental ill-health, such as loneliness and isolation, depression and anxiety (Bernard et al., 1996).

Furthermore, the findings presented showed that those participants seeking rehabilitation valued the act of volunteering over paid work as they felt more appreciated and valued by others, compared to their experience of feeling 'undervalued' in work which had impacted on their mental health and life course. Further affirmation in the form of certificates for recognition of work carried out by their own volition was deemed important to this group of participants in particular.

To conclude, rediscovering one's sense of self is not included within the Five Ways to Wellbeing (Aked et al., 2008) framework, but emerged as a key theme in a significant way. SDT provides a useful framework to deepening understanding people's motivations and wellbeing outcomes. A greater understanding of this aspect to participation could have significant impact on the potential for greater and prolonged participation as such it should be more prominent within policy and practice.

7.3 For whom? – Demographic considerations

This section presents discussion on whether there are demographic considerations in relation to *what works for whom?* based on the findings.

7.3.1 Gender

The quantitative findings suggest that the mechanisms were not moderated by gender. There was a distinct lack of concluding evidence in the literature in relation to gender and the phenomenon in question, Lovell et al., (2015) came to the same conclusion in their review of civic environmental activity for health and wellbeing, but stated this could be due to a lack of studies in this area focused on demographics. One study (Moor, et al., 2006) hypothesised that men enjoyed the act of land management more, and this was not echoed by any other studies, in any case this was based in rural Australia and perhaps not a fair comparison to urban UK environments.

However, the qualitative findings suggest that the theme ‘rediscovering sense of self’ was prominent amongst late middle-aged female participant interviewees which described escaping their daily routine and burdens described as ‘role of wife’, ‘carer’ etc. There may be some significance here in that these are seen as gender-laden responsibilities. This would need further investigation which unfortunately was beyond the scope of this study. The quantitative findings showed no significant difference across gender. From a SDT perspective, gender as a moderator to autonomy is debated in the literature. Theorists such as Jordan (1997) argue that autonomy is a male trait and is not universal across genders. However, the implication of gender has also been tackled through studies by Chirkov et.al, (2003) who found that the relationship between autonomy and wellbeing was not moderated by gender and claim that such reasoning by Jordan (1997) and Markus et al. (1996) conflate autonomy with independence and non-reliance, relating to gender dynamics.

7.3.2 Ageing and the life course

There are studies which recognises GI as an enabling environment across the life course (Dennis et al., 2020; Douglas, Lennon & Scott, M., 2017), particularly around exposure and access to greenspace. In relation to civic environmental activity and

ageing the quantitative findings from this study showed that there was not a distinct or significant link between age ranges and what worked for whom. This concurs with Lovell et al., (2015) review concerning civic environmental activity specifically, where they identified that they were unable to assess variation across demographics, citing gender and age. They did calculate that the average age for participants across studies was 40-60, but that fact provides little insight into a comparison with this study. In their review Hansen-Ketchum & Halpenny (2010) did not find differences across the demographic.

However, the qualitative findings in Chapter 5 revealed that circumstances and events over the life course was influential for some participants who described being motivated to undertake activities, or care about greenspaces more, because they had reached particular age and felt an increased awareness of their impacts or difference they could or should make. The sense of doing something good for future generations was a theme that spanned across all age ranges, not just the older age ranges. This concurs with SDT which recognises the inherent integrative process that operates over a life-span and actions may reflect mature regulation. Psychological basic needs, competency, autonomy and relatedness are moderated to degrees by intrinsic motivation and extrinsic motivations (whether external, introjected, identified and integrated) which vary over time but not in sequentially in time order.

7.3.3 Culture & values

Findings from this study found that 12% of participants were classed as 'non-white' and 12% 'non-British', however, these figures were too small to derive any meaningful inferential statistical analysis. The subject of diversity and participation is complex and previous research and systematic reviews focused on civic environmental activity (Hansen-Ketchum & Halpenny 2010; Lovell et al., 2015) do not mention ethnicity and cultural values, presumably because there is a distinct lack of studies in this area.

It is worth highlighting that SDT ascertains that the three basic psychological needs, competence, relatedness and autonomy, are universal (Deci & Ryan, 2012). However, cultural theorists such as Markus et.al, (1996) argue that SDT concept of autonomy is a Western phenomenon, aligned with ideals based on individualism. More research is needed in this area.

7.3.4 What works for whom? – Summary

This section discussed the findings in the context of wider literature to gain a closer understanding of *what works*? That is, what works in relation to participant's experiencing enhanced wellbeing. The relationship between motivational drivers, mechanisms and the relationship between the two have been discussed, bringing in formal theories to gain a deeper understanding the journey to enhanced wellbeing through participation. Actions offered through the Five Ways to Wellbeing did result in enhanced wellbeing as did experiencing rediscovering oneself. It is apparent though that these actions, or 'Ways' do not operate in isolation and the phenomenon's contextual setting – being in nature – intersects with other ways to wellbeing, rather than being in nature itself. That is, the natural setting is the medium by which other 'Ways' to wellbeing mechanise enhanced wellbeing. SDT provides a deeper understanding of the journey to the 'feel-good factor' that would lead to enhanced wellbeing (hedonistic, eudaimonic, or both), the desired outcome for this study. Psychosocial processes that initially drive individuals to take part, leading to hedonistic 'feel-good factor' feeds motivational drivers for further participation leading to eudaimonic wellbeing (sense of contentment, fulfilment), thus attaining a form of behaviour change.

SDT has helped to explain how the phenomenon aligns to psychological needs, *competence*, *autonomy* and *relatedness* all of which are relevant to explain psychological processes and motivational drivers. Green Mind Theory has been applied to help understand the impacts of nature connectedness and theorise a deeper connection to environmental agendas such as climate change. However, it would appear from the findings that the contextual factors concerning the climate and biodiversity emergencies, are not a significant motivational driver to participation despite actions on the ground helping to mitigate and adapt the landscape for these pressing agendas. However, this is an area of work that could be explored further and trialled in practice making the connection more explicit to participants. 'What works for whom?' is down to the individual's reasoning and motivation. It has been discussed that the demographic attributes do not reveal any significant patterns to what works specifically for whom, based on age and gender, although the competency, autonomy

and relatedness become important to individuals as various points of the life's course. SDT has been applied to broaden and support discussion on gender and age and provided theoretical insight into possible cultural factors. The next step in the discussion will address what circumstances lead to the possibility of mechanisms engaging, therefore seeking a greater understanding of the implications that support participant's reasoning and opportunity to access wellbeing benefits through participation.

7.4 What circumstances?

This section will present discussion on the circumstances that underpin the realist question *what works for whom in what circumstances?* The circumstances in many ways mirror the context for this study, i.e. creating the right environment with resources available to interact with participants reasoning to enable causal mechanisms to 'fire' (since reasoning + resources = mechanism-outcome). That is, what circumstantial factors enable the success from participation.

As discussed in the findings and previous section, demographic data on its own does not predict *what works for who?*. Instead, further insight and discussion into why people participate, their motivations (and therefore reasoning) can be determined better by their own personal choice of pathway to the activities, and this forms the first part of the discussion with implications for practice. Circumstances are significantly impacted by resources available, which are by and large down to the organisational players, since they bring in, or unlock, the ingredients (resources) available for participant agency. Therefore, for this section it is appropriate to bring wider discussion to practitioner perspectives on resources.

7.4.1 Pathways

The personal pathways to activities are largely led by participants reasoning - how and why they choose to take part. However pathways are also influenced by organisational resources and infrastructure available (Pawson & Tilley, 1997). The pathways to

activities are an important aspect to the phenomenon, as they are needed on a pragmatic basis to lead individuals to activities, but they ought to appeal to participants speak to their reasoning, i.e. their wants, needs, wishes and aspirations. Findings show that pathways reflect the participant reasoning and circumstances, one example scenario is a local resident's self-directed pathway to activities because they feel strongly about improving their local area. Furthermore, pathways can open opportunities for access for those ordinarily less engaged in nature, to access the benefits of nature. For example, the qualitative findings indicated that the corporate pathway was a way for some to try something new and different from their usual activity. The social prescribing pathway seeks to direct individuals, via GP's link workers etc., who may benefit from non-clinical interventions to local based activities to improve the quality of life for those experiencing the bleaker side of social determinants of health and/or help to manage long-term health conditions.

In relation to how pathways to civic environmental activities were framed in the literature, there was an acknowledgement of formal health pathways (Wilson, 2009), more recently labelled as 'green social prescribing', health branded pathways, such as 'Green Gym' (TCV, 2024; Barton, 2009) and then traditional environmental volunteering. There is very little comparison or discussion on the relevance or contextual factors of pathways at the user-end. By contrast, the growing interest in green social prescribing in research has focused on this particular pathway and this will be discussed later into the section.

All pathways to participation are typically reliant on virtual infrastructure such as effective organisational capacity for engagement, outreach and communication strategies. As discussed in Chapter 1, civic environmental activities (usually but not always packaged as volunteering) have been around for decades with an awareness of health-related outcomes. For years, opportunities for civic environmental activities have offered a way for participants to become involved or lead on practical activities at a neighbourhood level achieving both environmental, health and social outcomes using a community asset-based approach, although tended not to promote activities as 'health activities' (Mell, 2016; Gore et al., 2010). The emergence of sub-brands such as 'Green Gym' (TCV, 2024) began to bring to the fore or suggest health benefits at the user

end. In this study, practitioners reported the challenges of recruiting participants through GSP and furthermore Bertotti et al., (2018) found a lack of awareness by patients around the term ‘social prescribing’. This could suggest that currently green social prescribing has been influenced by the health sector, rather than user-demand per se.

7.4.1.1 Pathways - leading to.... the same offer and therefore the same outcomes

Interestingly, the data collected was gathered from sessions that were open to all pathways including ‘green prescriptions’. Data showed that the participant’s chosen pathways for this study were largely either self-directed or via a corporate route, the exception being a very small number who came through a health pathway (n=4). This was echoed by practitioners who described the difficulty of recruiting via the green social prescribing pathway, anxieties over recruitment, headcounts and retention to meet the expectation of funders. Therefore, from a participant and practitioner perspective – should the pathway matter if the offer and outcomes are the same? The following discussion will present an argument for embracing all pathways (i.e. not just green social prescribing pathway) that lead to health and wellbeing outcomes via activity offers and this being a sensible approach to broadening reach. For example, a local resident may want to instigate or take part in activities (in line with their intrinsic motivations) somewhere local to where they live. It is a reasonable assumption that they would seek out organisations, through a variety of channels, to see how they might progress their pursuit. This self-directed pathway was expressed by practitioner interviewees as less problematic, framed in a ‘business as usual’ way.

According to SDT, this form of self-motivation by participants to get involved is the best outcome for wellbeing as it’s being led by intrinsic motivation. As the findings show, in the right conditions, a self-directed pathway has a balance of competency, autonomy and relatedness that would support potential life goals, personal growth and social relationships. As Figure 36 demonstrates, the higher the ability to have choice and autonomy, the more intrinsic motivations are which bring about positive behaviour change and actions.

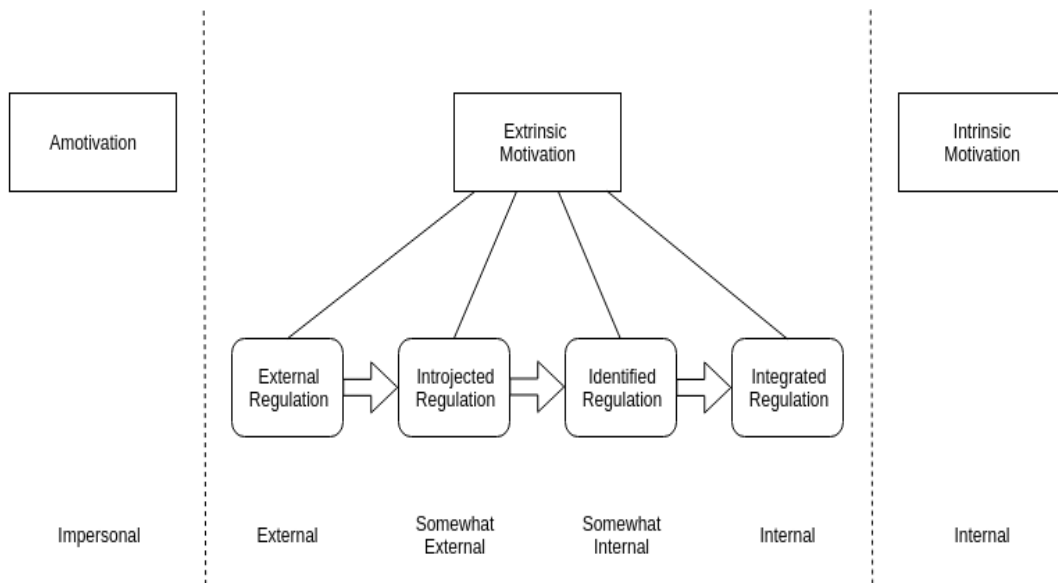


Figure 36. Adapted from Ryan & Deci (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), p.72.

Participant interviewees from this study who were local residents described how they became more involved over time returning to activities in support of their wellbeing. Therefore this could provide a more sustainable approach to managing wellbeing, as the experience shifts from hedonistic wellbeing experience to a deeper eudaimonic one.

Another pathway identified through the triangulated data revealed the corporate pathway, whereby participants undertake volunteering hours as part of the corporate values and policy of their workplace. Often accessing activities in this way offers the same level of opportunity as self-directed pathway, albeit usually on a shorter timescale. However, the findings highlight that this offers opportunity to engage those who would not normally, *intrinsically* take part in activities. Findings have also indicated that the corporate pathway was effective in reaching people who were not used to accessing and interacting with the natural environment. It also provided an opportunity to increase social connections with peers, and confidence to do so since the post-Covid working arrangements had left people feeling isolated and static due to working from home arrangements. The consideration for this pathway is to make efforts to ensure the internalisation process is identifiable rather than introjected, to nurture a sense of autonomy rather than control (see Figure 36).

The qualitative findings from participant interviewees on a rehabilitation pathway (where the mental health support organisation worked in partnership with an environmental organisation) indicated that participation in the right conditions (i.e. where resources support participant reasoning) can have a profound positive effect on those seeking vocational and/or therapeutic rehabilitation. Those on a rehabilitation pathway were a vulnerable cohort because they have been referred because of their mental health problems, often linked to lived experience in relation to drug and alcohol problems. The most successful pathway (i.e. one which was able to recruit, support and retain participants) particular to this cohort was through partnership work, i.e. mental health and other specialist support organisations linking with an environmental offer delivered by environmental practitioners. There were variances to this, some mental health practitioners became custodians of greenspace in their own right (although this was limited) and some environmental organisations directly targeted those seeking rehabilitation. The rehabilitation pathway explored in this study came through a partnership approach. However, some practitioner interviewees suggested that engaging those seeking therapeutic rehabilitation was the epitome of the green social prescribing concept – ecotherapy for those most vulnerable. This raises an important question around the purpose of the green social prescribing pathway – who is it for, and what is it trying to achieve?

7.4.1.2 Green Social Prescribing pathway – double edged sword

Bertotti (2024) explains the rationale and need for the conceptualisation of social prescribing as a response to an ageing population, increased pressure on primary care, prevention and integration between health and social support, health inequalities and building stronger communities. Bertotti (2024) highlights the ongoing debate around the definition and concept of social prescribing: at one end a structured ‘pathway’ via a network of GPs’, community link-worker roles and the VCSE sector and on the other hand an ‘approach’ encompassing activities led by the VCSE sector. The debate around this is not purely semantics and the implications will be discussed in later into the chapter. Findings indicate that the dual meaning of the conceptualisation ‘green social prescribing’ (GSP) has led to opportunities and challenges as a pathway. These

challenges relate to the GSP pathway being perceived as a double-edged sword from a practitioner perspective that also has material impact for the user.

When GSP was first introduced, many people working in the environmental sector perceived this to be the long-awaited recognition for the health benefits brought about by green infrastructure and interaction with nature. It was hoped that GSP could promote mutual understanding between the environmental and health sector of the health and wellbeing benefits that derive from a wide range of nature-based activities, and therefore a set of common aims and objectives could be achieved (Bragg & Leck, 2017). It was anticipated that these benefits would be taken seriously enough for investment by the health sector and (perhaps rather naively) there would be commissions aplenty, to sustain environmental services that could be local, person-centred and play a role in public health and primary care alleviating pressure on GPs surgeries and NHS provision. Since the introduction of GSP, there has been a focus on the development of social prescribing and GSP specifically, for example, Bertotti et al., (2018); Fixsen & Barrett, (2022); Leavell et al., (2019); Howarth et al., (2020), leading to the development of GSP toolkits (for example NASP, (2024)). GSP and its challenges to success as a pathway have been researched. For example, Bertotti et al., (2018) used a realist evaluation approach to understanding the C-M-O component parts of this particular pathway, and their findings describe the dynamic relationship between GPs, social prescribing coordinator roles, patients (participants) and third sector delivery organisations. Bertotti et al., (2018) highlight the pathway's potential to address social determinants of health and described contextual factors, reported as three stages, that were creating barriers to the success of this pathway. Stage 1 was the GP referral process. Stage 2 was the social prescribing coordinator consultation process which highlighted the considerable amount of support required to get people to follow through on the pathway to interventions (Bertotti et al., 2018). This point was echoed in the findings for this study where mental health practitioners emphasized the level of support required for those with a mental health need. Stage 3 (Bertotti et al., 2018) explored the interaction between the patient (participant) and the community-based, third sector organisations delivering activities and this is most relevant to this study. Some of Bertotti et al., (2018) findings suggest that benefits may depend on the specific

need and aspirations (reasoning) of individuals which may determine how well they connect with an offer and therefore how successful the intervention is. This suggests the ideal scenario would be a rich and varied programme of activity for participants to choose from. However, as the findings from this study show, supported by Bertotti et al., (2018), resourcing offers and the sustainability of offers requires funding, the lack of which presents a key contextual factor that hinders the success of this pathway. The following section 7.4.2 will go on to present alternative funding models to resource GSP offers, but for those to work, some contextual factors presented in the findings need to be addressed.

A key point to come out of the findings was the confusion over assumptions over what GSP is and who it's for which is hindering its success as a pathway. One of the key issues and contradictions relating to social prescribing is that it was intended to provide non-clinical interventions (for non-medical needs), using social programmes (offers/interventions) Muhl et al., (2023). However, practitioners from this study felt it was being handled in an overly medicalised way. As discussed, social prescribing sets out to address wider social determinants that impact on health and wellbeing, issues deriving from loneliness, the fall-out from life events, worklessness, (in the context of Greater Manchester) the indicators of multiple deprivation - factors which lead to chronic physical and mental health conditions and feed health inequalities (Bertotti, 2024). The point of social prescribing is ultimately to promote positive lifestyle behaviours, which may include encouraging physical activity, tackling isolation and loneliness etc., and therefore aligns with preventative strategies using non-clinical social support networks in turn strengthening communities (Bertotti, 2024). However, the latest guidance, including a comprehensive toolkit on developing and implementing GSP in practice (NASP, 2024) has a focus on tackling mental health specifically, stating that learning from a previous evaluation of GSP for mental health has informed the blueprint for the toolkit. For example, the 'Key Principles of GSP' header within the toolkit (NASP, p.9) refers to tackling and preventing mental ill health. Social prescribing was not introduced to tackle mental ill-health (specifically) but provides a way to help, for example, reduce loneliness or increase physical activity for people who are overweight, neither of which are mental health issues. There is a risk that if mental

health becomes the overriding discourse for GSP it places limitations on the success of the GSP pathway and approach as a preventative strategy for wider populations. The commissioning of GSP has been a challenge because of the expectations around how activities (or services) ought to be delivered and evaluated. Designing services or offers to directly address mental health problems rightly assumes the issue to address is mental health specifically. This design of services to meet need is aligned with the concept of the 'green care' model (Bragg & Leck, 2017) (Figure 2, section 1.3.2), centred around ecotherapy, i.e. 'Therapy' aimed at those with a specific mental health need. These types of services are clearly important to address those with a mental health need and does fit into the social prescribing concept. However, as the findings show, practitioners emphasized that in the case of moderate to severe mental health needs the individual is best supported through additional supporting organisations (e.g. mental health charities and services) that work in partnership with an environmental organisation as the activity delivery agent. This cohort of individuals, as part of their therapeutic rehabilitation would expect to have a more medicalised approach in their experience of completing evidence of impacts using well established wellbeing capture tools (such as WEMWBS) that ask more personal questions.

By contrast, those experiencing issues such as loneliness, worklessness which may indeed lead to mental health problems may benefit from community based sociable activities that can give agency to boosting social connections, skills or confidence, and are in line with original social prescribing parameters. Findings from this study show that participation in civic environmental activities gives opportunity to undertake meaningful activity in nature for wellbeing benefits. The combination of being in nature whilst developing social connections, giving back to the wider community, regaining sense of self etc., supporting competence, autonomy and relatedness is powerful, and according to SDT more likely to lead to behaviour and lifestyle change. Therefore, this type of offer does also fit into the GSP concept and is arguably more aligned with a preventative approach to health. However, key finding highlighted that some practitioner interviewees felt that their 'usual' volunteer offer had less value in relation to health and wellbeing outcomes. These practitioners described how this did not fit with the assumption of what a 'GSP' offer should look like.

A significant finding from this study revealed the impact of the terminology used to describe GSP as an ‘approach’ as well as a structured pathway. Findings suggest that in this dual meaning is unhelpful, and, as highlighted earlier is recognised as contentious (Bertotti, 2024). Since GSPs emergence the narrative to describe nature-based activities for health and wellbeing has changed to ‘GSP’ (originally GSP was a pathway not an activity type descriptor). This has resulted in confusion around what constitutes ‘GSP activity’, as previously and with it a supposition over who it's for and therefore what is deemed appropriate activity. There are two issues with this supposition. Firstly, the current discourse evidenced through the findings in Chapter 4 shows there is an assumption that those who are classed as vulnerable only want to undertake gentle, nature immersive activities for a wellbeing outcome. One practitioner described working with a younger group in nature for health activities where they discussed climate anxiety as a key factor in their involvement:

They didn't want to do the 'nature for health projects it wasn't like crafts and sitting and tea and coffee and like being in nature it was, "We want to do practical things and make, make a difference."

(Nina - Env practitioner)

This is an example where assumed ‘nature for health’ typically described as green social prescribing activities have been reduced to being low-key, just ‘be in nature’ activities, and this not necessarily what people want. This contradiction is supported by findings in Chapter 5 that suggests participant interviewees from a rehabilitation pathway, who made the distinction between pottering around the allotment and the civic environmental work they undertook. They expressed how they enjoyed the physical challenges, the risk, the giving back and recognition for undertaking the latter. This formed and fueled their intrinsic motivations for taking part in the activities which were meaningful, in the right conditions, which included support from their respective supporting organisation. See Figure 2, section 1.3.2, Bragg & Atkins (2016) where the distinction between contexts is illustrated. To sum up these points, there is a risk of unnecessarily re-inventing wheels by diverging or segregating offers that meet the aims and objectives of social prescribing, by making green social prescribing too prescriptive. Scott et al., (2018) call for the need to overcome disciplinary silos that

arise from a desire for ‘definitional purity’, advocating a process of mainstreaming ideas and actions at an interdisciplinary and transdisciplinary level (Scott et al., 2022) for effective on-going delivery. Mainstreaming would result in a richer offer of activities, embedding existing environmental volunteering activity within GSP processes and systems to avoid the GSP concept and pathway becoming too narrowed.

Chapter 6 presented findings on the frustration by environmental practitioners over not providing the right type of evidence for health commissioners (in the form of clinical mental health assessments) which were deemed inappropriate for the context that the activities took place, for example participation in activities in public realm. In some instances, the evaluation tools used in practice were described as barriers to participation or enjoyment due to their personal and intrusive questions in the context they were being given, with one example being the source of high distress for a participant (not party to this study). In this example the tool was the Warwick-Edinburgh Mental Wellbeing Scale, over the statement ‘I’ve been feeling loved’. The mental health practitioners were more adept at using validated clinical tools to address mental health, as this was part of the course for their clients to complete frequent assessments of their mental health. Polley (2024) advocates the need to consider carefully the monitoring and evaluation of social prescribing, recommending using a theory of change (programme theory) as a starting point to understand which outcomes to measure, as outcomes can vary (Dayson & Damm, 2020; Howarth et al., 2020; Polley et al., 2020). Polley (2024) warns of the ethical considerations of over-burdening participants with forms or data. Therefore, there is a need for the right tool in the right context when it comes to evaluation of health promotion and nature ‘therapy’ activities. Furthermore, the findings indicate a need to consider the appeal of GSP from the user perspective rather than using outcomes language that is framed in a too clinical way. There are potentially challenges to GSP from a SDT perspective. Being ‘told’ or ‘prescribed’ a ‘dose of treatment’ in the context of GSP is an extrinsic regulator, which is potentially controlling and could be viewed as a more autocratic approach used to dictate or pressurise people to think, feel or do (i.e. behave) in a particular way (Deci & Ryan, 2006). Subsequently, there is a risk that autonomy is limited, thus decreasing intrinsic motivation as motivation is perceived as being controlled – set by others -

rather than autonomous. This could suggest that a participant could be disincentivised towards any activities aimed at increasing physical exercise if that person feels that they are too unfit (or have been prescribed as being unfit). It could also have an impact on retention at an engagement offer where controlled rules imply commitment over 'x' number of weeks/sessions as per 'dose of treatment' model. Therefore, disciplinary domains and language should avoid creating silos leading to barriers to participation (Scott et al., 2018; Scott et al., 2022).

In summary, green social prescribing presents both challenges and opportunities. For example, findings indicate that civic environmental activity is highly compatible with the aims and objectives of social prescribing. It offers a way for participants to combine their own reasoning with resources available to achieve enhanced wellbeing through mechanisms that are meaningful to them. It is open to the ageing population and self-determination strategies over the life course, is suited to preventative approaches to improving health and reducing inequalities and helps to build stronger communities. However, the prevailing discourse framing GSP as a means to address mental health specifically can hamper the appeal, accessibility and design of the offer. If GSP is to address non-clinical issues, then the approach ought to be broadening the reach for this pathway to the general population, rather than those with a very specific need. Some of the tensions between the health and environmental sector raises an important question around who controls and influences GSP? Polley (2024) makes the point that there are a multitude of stakeholders, not least the user. One of the core challenges to GSP has been the emergence of GSP becoming a descriptor for activities, 'an approach' rather than a pathway which has resulted in confusion about what is deemed 'appropriate' as GSP, or nature-based activity for health and wellbeing. Findings suggest that a rich and varied offer of activities are needed across the GSP portfolio. Some activities warrant a more 'service' driven approach particularly when it comes to ecotherapy approaches commissioned for those in greatest mental health need. However, user experience should be more important than the ways and means of evaluation (Polley, 2024) or how a programme is commissioned, therefore approached such as 'dose of treatment' may not appeal, and findings show this is the case. The fix-it model does not address ways in which activities may offer opportunity for behaviour

change. In moving forward, in relation to civic environmental activity, environmental practitioners need to be bolder in their assertion of the health and wellbeing outcomes of their offers and resist from reducing their 'GSP' offer to fit very narrow criteria. The environmental sector needs to be smarter but not overly led by the culture of the health sector in relation to evaluation to avoid this crossing ethical boundaries or becoming a barrier to participation. The risk to not doing this would be to hinder the potential of the green social prescribing pathway and bypass resources beyond health sector investment, as will be discussed in section 7.4.2 'Resources'.

This section has discussed the circumstantial pathways through which participant's reasoning leads them to pathways. Interestingly, as the findings show, the most popular pathways were those that were self-directed. In GSP terms this would be deemed a 'self-referral'. This means people have chosen to take part. Individuals choosing to take part under their own determination and autonomy, which is perhaps a more reliable pathway for sustaining interest in activities to reap the wellbeing benefits. The findings indicate a useful role for GSP as a pathway, but both the health sector and the environmental sector should consider the end-user appeal and experience and resist from restricting or over-medicalising the offer or experience. A variety of pathways can lead to opportunities for participation and each hold value in relation to attaining wellbeing outcomes, largely because they lead to the same offer. The success of the pathways relies on the reasoning of the individuals, therefore a variety of pathways, with various appeal is vital.

7.4.2 Resources

As the findings in Chapter 4 illustrate practitioners shared perspectives on challenges around resourcing activity programmes, ranging from accessing land where activities take place, funding the delivery of activities and staff capacity and skills.

The challenges around funding 'green social prescribing' activities delivered by the third sector are documented (Bertotti et al. 2018; Bertotti, 2024). The findings reported frustrations and challenges around funding nature-based activities specifically framed as health initiatives (i.e. green social prescribing). More specifically, lack of funding,

difficult parameters and the short-term nature of funding specifically for commissions for activities for health outputs were a significant source of frustration for both mental health and environment practitioner interviewees.

A government practitioner interviewee articulated the challenges of ensuring health funding is purposefully highly restricted to specific criteria and any consideration of a broader picture would require greater flexibility and perceived risk from the current approach to funding. There were points of view from practitioners that GSP funding is silo-ed because the health sector is stuck in its ways, particularly around rigid standards of evidence linked to funding to fix people.

that I'm pretty fed up of being asked to erm, provide this .. this evidence because it doesn't matter how much you provide .. it doesn't seem to ever .. be enough.

(Matt - Env practitioner)

The reality being that health sector funding is scarce and subject to competing priorities with high stakes. Given the limited resource offered by the health sector, a more flexible and creative approach is needed to sustain activities for health and wellbeing. What is clear that 'health related' nature-based activities aimed at the GSP pathway receive a small fraction of investment compared to investment in the nature recovery and climate change agendas.

Since 2020 onwards, there has been a step-change in investment into interventions to aid regeneration, nature recovery and help mitigate and adapt to climate change (ECF, 2024) to deliver on both national priorities, such as Defra's 25 Year Plan (DEFRA, 2018) and more locally the GM 5 Year Environment Plan (GMCA, 2024). Within Greater Manchester investment into nature-based solutions to tackle climate change and nature recovery to run into tens of millions of pounds since 2020 brought in by environmental charities alone (source Charity Commission). Therefore, a conservative estimate of a collective £10M per year is secured by Greater Manchester based environmental charities. Compare those figures with the investment in GSP by government through the GSP Pilot projects funded by DEFRA, of which Greater Manchester was a pilot. Funding amounted to around £100k over an 18 month period, shared by numerous partners running the pilot project. There will be other GSP

commissions carried out at district level but these are the short term piecemeal commissions and the source of frustration experienced by practitioners within this study.

A different approach to funding led by the environmental sector could offer a solution. Greater Manchester has taken steps to adopt natural capital accounting to expedite efforts to meet the national government's targets outlined in the 25 Year Environment Plan. Using these methods it is estimated that Greater Manchester is to receive the equivalent of £1 billion annually from ecosystem services provided by its natural environment (GM Green City, 2020). Natural accounting is abstract form of monetising ecosystem services and not tangible 'real cash'. What this does mean however is a sharpening of focus into green infrastructure projects and opportunity mapping which identifies areas where ecosystem services can be enhanced to maximise environmental and social benefits, seen in strategies such as All Our Trees (CoT, 2024) and the emerging Local Nature Recovery Strategy. What this means in real-money terms is to create portfolios of investment-ready projects and funding holding platforms (GMEF, 2024) for public and private investment (such as emerging green finance and Biodiversity Net Gain mechanisms) that will meet environmental and social goals and outcomes. Having portfolios of projects agreed by stakeholders and will overcome barriers and conflict over land access to run activities reported in the findings.

Global biodiversity frameworks such as Kunming-Montreal Global Biodiversity Framework (Convention on Biological Diversity, 2022) highlight the importance of involving communities in collective actions. Therefore is hoped that nature-based project design, implementation, and upkeep will be a big economic driver, creating jobs locally and providing other benefits to the community and this could be in the form of civic nature-based activities to improve health and wellbeing. Engaging in nature recovery is vital in promoting social justice in land management. The mobilisation of a wide range of knowledge held within urban environments, education, and participation are critical components of nature recovery's success (Dunn-Capper et al., 2023).

In summary there is a case for rethinking resourcing nature-based activities for health and wellbeing, which offers a solution to some of the challenges around resources. These points are presented in the context of Greater Manchester, but the principles

could be replicated to other city regions and urban settings. The Greater Manchester based environmental charities core aims are to improve the quality of the environment whilst at the same time improving the quality of life for individuals and communities by engaging people in activities in nature for nature recovery, climate resilience and social health outcomes. The forthcoming strategies and investment in nature recovery and climate change initiatives are beginning to identify a portfolio of sites, agreed by stakeholders that will invariably involve engaging individuals and communities in the very same nature-based activities to improve habitats or carry out interventions that help adapt or mitigate climate change. Therefore, as discussed in the previous section, bringing these civic environmental nature-based activities to the fore and broadening the scope and perception of GSP pathway and approach is favourable and offers a more positive solution to resourcing and sustaining nature-based activities for health and wellbeing.

7.4.3 What circumstances? – Summary

This section discussed what circumstances were influential in the success of supporting what works for whom. Pathways were discussed in detail and how pathways available must meet the reasoning of participants. Ultimately participation, whether self-directed or directed (such as GSP) rely on self-determination, therefore pathways should enable and support this process and not thwart or become a barrier. Similarly the user-experience should support SDT processes and therefore engagement models and evaluation of activities should take this into account. Participant reasoning is catalysed by resources available. This is another key circumstantial factor and both the environmental and health sector have good reason to be more flexible when it comes to resourcing activities to maximise future opportunities.

7.5 Discussion summary

This chapter set out to discuss the findings in the context of the wider literature and formal theories to get closer to understanding, and the implications for *what works for whom and in what circumstance?*

In understanding *what works?* GMT (Pretty, et al., 2017) and SDT (Deci & Ryan, 2012) were used to explicate meaning around the key mechanisms (Five Ways to Wellbeing

and ‘sense of self’) and the contextual dimension of ‘caring for the planet’. The discussion concluded that in the context of a natural setting, participants were given opportunity to find their own meaningful journey towards wellbeing via a number of mechanisms. The implication of this is that it is necessary to create the enabling environment for different mechanisms to fire depending on the individual. The discussion turned to *for whom?* Based on the findings and application of SDT demographic implications were not found to be moderators for predicting wellbeing outcomes, although there is clearly scope beyond this study to explore this further. Instead, pathways, discussed in the *what circumstances?* Section of this chapter offered more insight into the processes that lead to participation. This was ultimately about meaningfulness and choice (Deci & Ryan, 2012). The need to support and attract intrinsic motivations is a key consideration for all pathways, including GSP. GSP is not currently reaching its potential as a pathway to activities but potentially holds lots of opportunity to broaden reach. Resources and re-thinking sources of funding were discussed. Resources are needed to strengthen and sustain the opportunities for nature-based activities for health and wellbeing through the medium of nature recovery, and to create more climate-resilient landscapes.

The discussion presented in this chapter has provided a refinement of the programme theory and underpinning C-M-O hypothesis as described in Chapter 3, section 3.6.5. In Realist terms this refinement of the original programme theory can be expressed as cumulations of the original C-M-O configuration to produce a middle-range theory in the next section.

7.5.1 Cumulative summary

According to Pawson & Tilley (1997) in order for cumulations to happen, improvements or refinements to theory need to be evident. This approach is not intended to be based on seeking to achieve reliable, replicable universal generalisation as social programmes will change and produce anomalies by their very nature. Cumulation in realist evaluations seeks to produce middle-range theory, i.e. abstract enough to produce a narrower scope that can still withstand testing.

Table 7-2 and 7-3 below give a summary of findings and discussion using cumulations of the C-M-O configurations to demonstrate a refined middle-range theory of the original programme theory.

Table 7-1 Key to cumulations Table 7-3

KEY		
C	M	O
C _N = Activities in nature P = pathway P1 = local resident P2 = corporate groups P3 = rehabilitation	M1 = Physical activity M2 = Connecting to others M3 = Take Notice M4 = Learn M5 = Give Back M6 = Sense Self	O1 = increased mood O2 = sense purpose O3 = sense ownership
Formal theory used to explain psycho-social processes: (Deci & Ryan, 2012)		
SDT – Self Determination Theory. A macro-theory widely recognised in the field of social psychology and beyond applied to a range of social domains and issues, particularly in relation to self-motivation, learning and behaviour change. Based on human need of competence autonomy and relatedness.		
OIT – Organismic Integrated Theory. A sub-theory of SDT. Types of regulation and motivation, the reasons being: external, introjected, identified, integrated and intrinsic. The distinctions being autonomous versus controlled motivation. Autonomous motivation aligning with intrinsic motivation and identified/integrated extrinsic motivation and controlled motivation aligned with external control and introjected regulation		
CET - Cognitive Evaluation Theory. A sub-theory of SDT. To what extent does extrinsic goals, i.e. events such as rewards, thwart the self-determination and autonomy need. Secondly, to what extent do events (factors) such as choice, support autonomy and therefore enhance intrinsic motivation. Furthermore, to what extent positive feedback that enhances perceived competency supports the basic competency need that leads to enhanced intrinsic motivation.		
BPNT – Basic Psychological Needs Theory. A sub-theory of SDT. based on the notion of universal psychological needs and was developed to account for the wellbeing benefits associated with autonomy, competence and relatedness needs. As part of BPNT development, the importance of life goals emerged and differentiated between being directly satisfying, i.e. intrinsic, or detached, i.e. extrinsic.		

Table 7-2 C-M-O cumulations and explanatory theory

Mechanism Theme	Cumulative C-M-O configuration	Narrative/sub-narrative	QUANT Dataset GWTWB [overall mean score/10] Theme effect on mood score PRE/POST activity YES/NO	QUAL Datasets: Participant interview & GWTWB sub-themes & points Red text indicates factors which may have negative impacts	QUAL Dataset Practitioner interviews perspectives Red text indicates factors which may have negative impacts	Formal theory used to explain psycho-social processes
Physical activity	C _N -M ₁ -O ₁ Overall	For some, the physical activity aspect of the activities was a high point but not for all. Statistically there was little difference overall between genders and age across the datasets relating to the physical activity experience.	Overall 8.76 Female 8.89 Male 8.63 Theme effect on mood score: YES post activity	'Horses for courses': Life course fitness Own pace Exercising outdoors Purposeful exercise Hidden exercise	n/a	SDT: competence; autonomy; relatedness BPNT: goals OIT: motivation/guilt & avoidance

				Hard graft but good Too hard Not for everyone		
	C _N (P ₁)-M ₁ -O ₁ Just take part	Physical activity aspect of activities was generally positively received by those 'just to take part'. Older participants described it as a way to keep fit and active.	8.79	"So I know that the more active you keep, the fitter you will be later in life." Ruth - participant	n/a	
	C _N (P ₂)-M ₁ -O ₁ Corporate	According to QUAL data Physical activity aspect of activities was generally positively received by those on corporate pathway particularly younger age groups	8.72	Interviewees in younger age groups expressed they liked the 'work-out' element of physical activity. Too much physical activity could be demotivating.	n/a	
	C _N (P ₃)-M ₁ -O ₁ Rehabilitation	The physical activity aspect of activities was popular amongst those	Overall 8.93	Physical activity was	Some practitioners expressed an assumption that	

		seeking rehabilitation who enjoyed the challenging nature of activities and 'hard graft'		challenging but rewarding.	those seeking health rehabilitation would want only very gentle activities which contradicts participant data	
Connecting to others	C_N-M₂-O₁ Overall	Statistically there was little difference overall between genders and age across the datasets. Feeling socially connected to others was valued and experienced by most. Dynamics could lead to negative social experiences for those in organised structured groups (such as Friends Groups)	Overall 8.35 Female 8.47 Male 8.23 Theme effect on mood score: YES post activity	Feeling part of a team Strengthen existing relationships Develop new social connections Turbulence	Turbulence observed by practitioners in longer-standing organised groups due to dynamic and expectations of others around roles and responsibilities	SDT: Autonomy & relatedness
	C_N(P₁)-M₂-O₁ Just take part	Having fun with others, developing bonds and a sense of team through establishing roles was expressed.	8.16	Sociable Meet new people Quality time with others	n/a	
	C_N(P₂)-M₂-O₁ Corporate	The opportunity to spend real-life time with colleagues as	8.59	Bond with team members	n/a	

		contrast to home-working patterns.		Overcoming isolation		
	C _N (P ₃)-M ₂ -O ₁ Rehabilitation	Those on rehabilitation pathway valued highly their connection with others with shared lived experience, and also supporting staff.	7.79	Forging strong relationships Looking out for each other Shared experiences	Practitioners emphasised the importance of the practitioner-participant relationship and a high level of support required	
Take notice	C _N -M ₃ -O ₁ Overall	Activities taking place in nature was an expectation therefore a key contextual factor and part of the rationale for participation. As a contextual factor it became a medium by which other mechanisms could operate. The level of connection to nature was experienced by many as nurturing habitats and cleaning natural spaces. Fewer described a deeper mindfulness connection with nature.	Overall 9.15 Female 9.33 Male 8.96 Theme effect on mood score: YES post activity	Nostalgia & nature New & developing connections with nature Mindfulness & moments of calm Permission to enjoy nature	Assumption that people participate just to be in nature is overriding narrative. Risk overlooking other benefits (mechanisms) with nature being contextual factor.	ART: Exposure to nature GMT OIT: meaningfulness BPNT: intrinsic aspirations

		However, meaningful activity to help improve natural spaces hold therapeutic value in different ways.				
	C _N (P ₁)-M ₃ -O ₁ Just take part	Participants described their satisfaction for nurturing local spaces to improve the places they cared about and had personal connections with.	9.08	Nurturing nature Role of custodian		
	C _N (P ₂)-M ₃ -O ₁ Corporate	An awareness of being in nature being good for mental health and this linking back to their experiences of being outdoors during Covid pandemic lockdown periods.	9.19	Nature for mental health Harsh weather spoiling enjoyment of nature		
	C _N (P ₃)-M ₃ -O ₁ Rehabilitation	Described a connection with nature as wanting to cleanse or clean nature, through deep interaction with nature during activities.	9.29	Cleaning nature Calming effects of nature	Those experiencing mental health problems may need to give themselves permission to enjoy nature. Some expressed an assumption that for those seeking	

					rehabilitation would only want an immersive experience in nature, overlooking additional benefits that meaningful civic environmental activity can bring in terms of agency and purpose	
Learn	C _N -M ₄ -O ₁ Overall	Participants described learning new skills and knowledge through activities. Learning was valued although this was less prominent in the overall dataset.	Overall 8.03 Female 8.30 Male 7.74 Theme effect on mood score: YES post activity	Being intellectually challenged Pride through learning Trying something new Shared learning Recognition for learning		SDT: competence; autonomy; relatedness
	C _N (P ₁)-M ₄ -O ₁ Just take part	Expressed enjoyment at learning about habitats and how to use tools. Longer term involvement led to feeling intellectually challenged which was	8.01	Being challenged using tools		

		important to those later in life.				
	C _N (P ₂)-M ₄ -O ₁ Corporate	Reported less as a something they felt was a driver to participation.	7.97	Trying something new		
	C _N (P ₃)-M ₄ -O ₁ Rehabilitation	Valued highly the shared learning experience which gave scope to learn practical skills and softer skills which led to strengthened relationships and increased confidence	8.86	Recognition for learning Pride leading to confidence		
Give Back	C _N -M ₅ -O ₁ Overall	A key motivational driver and sense of satisfaction of giving back was strong across all cohorts.	Overall 9.16 Female 9.28 Male 9.02 Theme effect on mood score: YES post activity	Sense of place Future generations Philanthropic gestures		SDT: competence; autonomy; relatedness CET: positive feedback, increased competency
	C _N (P ₁)-M ₅ -O ₁ Just take part	Nurtured a sense of place and ownership over spaces	9.09	Sense of place and ownership		OIT: meaningfulness & choice
	C _N (P ₂)-M ₅ -O ₁ Corporate	Giving something back formed a key part of their narrative for	9.19	Some questioned their impact to		BPNT: life goals

		involvement through an employment initiative to give time to give something back. However, participants described their experience as being meaningful and personal to them as individuals		the wider community and wider world (in context of climate change)		
	C _N -M ₅ -O ₁ Rehabilitation	Sense of pride through recognition from others about doing something positive leading to self-affirmation.	Employment prospects 9.36 Health* 10.0 *(very small number n=4)	Sense of pride Recognition from others		
Sense of Self	C _N -M ₆ -O ₁ Overall	A sense of satisfaction, achievement, recognition from others leading to increases sense of self. Participation could lead to a developing a stronger sense of identity	n/a	Sense of identity & self worth Me-time to achieve life goals Redefining sense of self and roles in life	Mental health practitioners emphasised the need for a sense of feeling connection with others and relatedness leading to improved self esteem	SDT: competence; autonomy; relatedness CET: positive feedback, increased competency

	C _N (P ₁)-M ₆ -O ₁ Just take part	Sense of finding oneself from feeling 'lost'. Taking back 'me-time' to rediscover one's self.	n/a	Feeling recognised and valued		OIT: meaningfulness & choice
	C _N (P ₂)-M ₆ -O ₁ Corporate	This was reported less from the corporate cohorts, although some expressed appreciation to take time out to discover and do new things.	n/a			BPNT: life goals
	C _N (P ₃)-M ₆ -O ₁ Rehabilitation	Feeling recognised and valued by the wider community and sense of achieving something positive was valued very highly by this cohort	n/a	Not being judged Feeling recognised and valued Behaviour change	Mental Health Practitioner reported a that sense of relatedness and connection was significant for those with mental health problems	
Outcome						
Increased mood	C _N -M _X -O ₁ Overall	Increase mood pre and post activity	PRE 6.91 POST 8.94	Mood change De-stressing & relaxation	A sentiment that usual civic volunteering activity has less therapeutic value than GSP activity (even though often they are one of the same)	ART: exposure to nature
Hedonistic wellbeing		All cohorts described how overall participation had made a positive difference to	t=21.339 df=298 P<.001	Enjoyment Increased wellbeing conscious		GMT: calm minds

		their wellbeing the short term (hedonistic).		reason to take part	Anxiety and exasperation over what tools and methods ought to be used to capture wellbeing impacts	SDT: competence; autonomy; relatedness CET: positive feedback, increased competency
Sense of purpose Eudaimonic wellbeing	C _N -M _X -O ₂	Statistically, those that indicated a desire to undertake one of the '5 Ways', reported that they valued that attribute post activity, e.g. those that sought physical activity experience, got a physical activity experience. Those who were involved in activities over a longer period of time reported that their involvement had supported a sense of purpose/agency, strengthened relationships therefore supporting eudaimonic wellbeing	n/a	Increased confidence and pride in oneself Positive affirmation	Longer term behaviour change was dependent on sense of purpose. Meaningfulness & choice is key to sense of purpose	OIT: meaningfulness & choice BPNT: life goals

Sense of ownership of place or space	C _N -Mx-O ₃	The role of custodian of natural spaces and making a tangible difference for others to see and enjoy was reported as an outcome by many. This supported a sense of pride in the local area and Manchester as a city region.	n/a	Creating & curating spaces Fixing spaces that are broken Loving the local area	A sense of ownership varied over time and whether activities were located at the same place for a period of time.	

8 Chapter 8 Conclusion

This Chapter will conclude the study by summarising the key research findings in relation to the research aim and objectives and discuss the value and contribution to the evidenced knowledge base as well as its offering to practice and policy, see Figure 37.

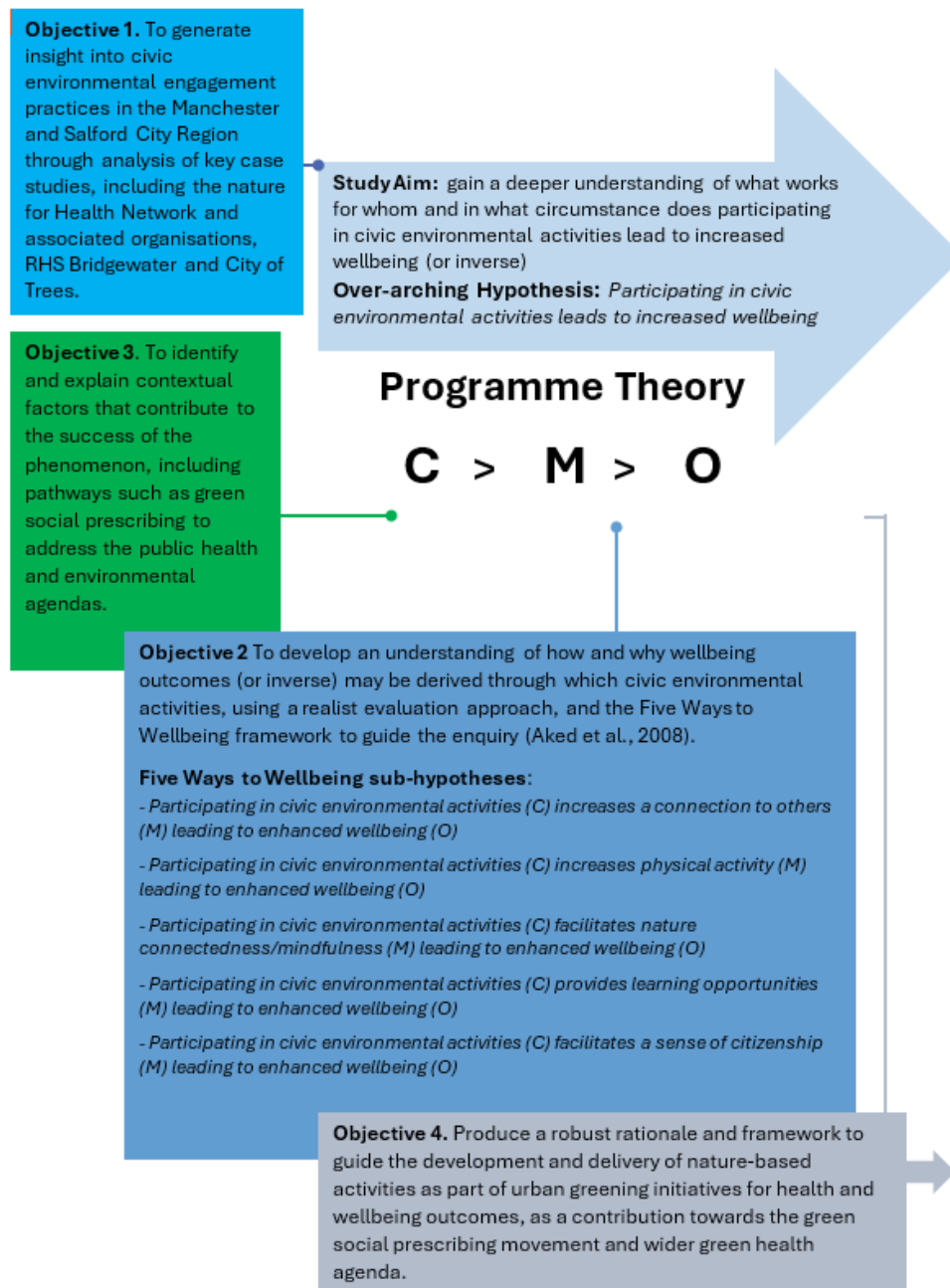


Figure 37 Study framework, aims, objectives and methodology

This thesis presents the findings from the study aimed to gain a deeper understanding of how and why taking part in civic environmental activities may lead to enhanced wellbeing (or inverse). Grounded in Realism, a philosophy that asserts both the material and social world are ‘real’ a realist evaluation approach has been undertaken to better understand what works for whom and in what circumstances in relation to the phenomenon. Pawson and Tilley (1997) assert the usefulness of realist evaluation being ‘real’, ‘realist’, ‘realistic’ and this was indeed the case in relation to this research. For the concluding chapter, each of the objectives are addressed in turn, synthesising the main body of this work to provide clear conclusions relating to each objective. This is followed by recommendations for practice and future research and the limitations of the study.

8.1 Objective 1 – Engage in real-life practice

To generate insight into civic environmental engagement practices in the Manchester and Salford City Region through analysis of key case studies, including the nature for Health Network and associated organisations, RHS Bridgewater and City of Trees.

The first objective for this study was to engage with real-life practice and to produce new knowledge and insight ,into a broader, multi-dimensional picture concerning the relationship between green infrastructure and human health and wellbeing. The start of the thesis, highlighted ways in which the global, national and local dimensions which are all interlinked, hence the global-to-local dimension. This is reflected in the realist assertion that systems are interlinked but operate on different levels, with dynamic ‘real’ social processes affecting the processes at each level. The context for this study discussed in Chapter 1 section 1.2 highlighted the global overarching political discourse and the aims to promote action towards global peace and prosperity through Sustainable Development Goals, which are reflected nationally through a number of government and stakeholder strategies relating to environmental, social and economic problems. As Chapter 1 illustrated, at a regional and local level, the global and national agendas become more focused around local key agendas. The key agendas that form the backdrop to this study was to improve population health, address health inequalities and create climate resilient and biodiverse landscapes across an urban

setting. Improving population health requires behaviour change and the challenge therefore is how to translate key agendas to the individual to become intrinsically motivated, meaningful actions. This in turn may drive forward behaviour change that collectively could make a difference to the bigger picture. This study sought to examine a micro-level programme theory (as describes in Chapter 3 section 3.6.5), that connects into a network of systems and processes operating at different levels and scales. The focus was to better understand the micro-level level programme theory, with the aim of becoming more effective at driving forward a tangible difference in the form of behaviour change, outcomes and outputs.

Therefore, this forms the rationale for purposefully aligning and engaging in real-life scenario as described in the introductory chapter. As discussed in the introductory chapter, the phenomenon in question is difficult-to-define in terms of set language descriptors, but none-the-less very real. It involves many organisations whose core purpose is to encourage and facilitate participation in civic environmental activities, typically to achieve on a range of environmental outputs coupled with social outcomes. This thesis cast a health and wellbeing lens on the outreach and engagement work linked to the Greater Manchester Nature for Health Network, namely using RHS Bridgewater and City of Trees as case studies. However, over the course of the study it also involved Groundwork Greater Manchester and The Conservation Volunteers (TCV) as other key players in civic environmental outreach work. Furthermore, the study was aligned with the strategic aim of the relatively new Greater Manchester Nature for Health Network and associated organisations' objectives of supporting the development and delivery of nature-based activities to improve the quality of life for people across Greater Manchester (GM).

On a practical level, engaging in real-life practice provided an opportunity to gather field data using purposive sampling and a third-party data collection strategy, through the organisations working on the ground. The mixed-methods approach to the study allowed for quantitative and qualitative data collection through the third-party organisations, using the pre & post activity GWTWB questionnaire (n=357) specifically designed for the study, under an agreed ethics protocol. Further qualitative data from interviews were gathered from participants (n=13) and practitioners (n=11) with lived

and professional experience linked to the phenomenon. Finally, this collaborative approach has helped to continue links between the University of Salford and real-world practice and strengthened the GM Nature for Health Network partnership as a whole. More of this will be discussed on the impacts and implications for the study later into the chapter.

8.2 Objective 2 – Understand better ‘what works for who?’

To develop an understanding of how and why wellbeing outcomes (or reverse) may be derived through which civic environmental activities, using a realist evaluation approach, and the Five Ways to Wellbeing framework to guide the enquiry (Aked et al., 2008).

The second and third objective was to understand the journey to enhanced wellbeing as hypothesised in the programme theory, discussed in detail in Chapter 3, section 3.6.5. A realist evaluation approach, grounded in realism led to the programme theory which was examined using a Context-Mechanism-Outcome (C-M-O) configuration. Chapters 4, 5 & 6 presented findings on each of the C-M-O configuration component parts, respectively. The second objective specifically was to explore the data and meaning relating to M-O components, to gain a closer understanding of the causal mechanisms at play that may (or may not) lead to enhanced wellbeing. That is, ‘what works for whom’?

The findings supported the overarching hypothesis, namely that taking part in civic environmental activities does lead to enhanced wellbeing. The quantitative indicator used to test this hypothesis was a measure of mood taken from the Green Ways to Wellbeing (GWTWB) questionnaire, taken before and after the civic environmental activity. A statistically significant increase in mood score from pre-to-post activity was found (paired t-test). This was supported by qualitative data from the questionnaire and the participant interviews where hedonistic wellbeing traits such as a sense of enjoyment, satisfaction, achievement as well as calm and relaxation were reported. This thesis also aimed to understand the *how* and *why* wellbeing was increased, and therefore the causal mechanisms (M-O) were explored using the Five Ways to Wellbeing framework (‘ways’ being ‘be active’; ‘connect with others’; take notice of

nature'; 'learn something'; give back'). The Five Ways to Wellbeing (Aked et al., 2008) framework was incorporated into the design of the questionnaire and semi-structured interview and focus group questions as a starting point for exploration into causal mechanisms. Quantitative analysis showed that participants' mood after the activity was, unsurprisingly, strongly affected by their mood from the outset. Therefore, all the analysis took the participant's mood prior to the activity into account. After controlling for pre-activity mood, findings highlighted the links between post-activity Five Ways to Wellbeing and post-activity improvement in mood. So, for example a higher reported level of enjoyment of physical activity was also linked to higher mood score and this was a pattern across all of the '5 Ways' to varying degrees. There was a link between the '5 Ways' pre and post activity. Therefore, for example, those that wanted to undertake physical exercise felt as though they had achieved that in their experience at a session, while those who were seeking a sociable experience got a sociable experience, etc. In turn, this was linked to increased mood, (findings that are supported by White et. al., 2023; Deci & Ryan, 2012). This is an important finding illustrating the potential for individual agency around goal setting (e.g. setting one's own physical activity efforts) or meeting individual needs (such as a desire for increased social connections). Statistically the demographics showed no variation across gender or age groups, as was also found by Lovell et al., (2015).

The qualitative findings brought more definition and colour to the picture in relation to the *how* and *why*?. Qualitative data from both the GWTWB questionnaire and participant interviews analysed using Reflective Thematic Analysis to produced rich descriptions of experiences which was triangulated with the quantitative data. The 'Five Ways to Wellbeing' were cast each as themes and a sixth theme emerged, 'sense of self'. Being in nature was a contextual factor which enabled underlying psycho-social processes linked the key themes to enact to varying degrees depending on the individual and their circumstance. For example, civic environmental activity is a nature-based activity and therefore nature is a contextual factor and the medium by which to focus minds and mood (as theorised by Kaplan 1995; Pretty, Rogerson & Barton, 2017). 'Taking notice' of nature entailed different levels of nature connection across the cohorts, some described a state of mindfulness but for most, a mindful

nature connection did not emerge. Instead, a connection to nature was expressed as doing something to help nature, 'clean' nature even, and this was moderated by different life experiences. In the Green Mind Theory (Pretty, Rogerson & Barton, 2017) it is theorised that a connection to nature leads to a sense of helping the planet in relation to challenges around climate change but there was little evidence to show that participants associated or believed their actions played a broader contribution to climate change or the biodiversity crisis. This could be a missed opportunity to raising awareness of these issues which form part of the context for the study from a practitioner perspective.

The Self Determination Theory and sub-theories helped to explicate the findings in relation to the other key themes. For example, the physical activity aspects of activities were embraced by some participants and not others. Some expressed the notion of 'invisible exercise' and some experienced a sense of achievement post-activity for going beyond personal comfort zones whilst undertaking physical practical conservation tasks. This suggests that the physical activity aspect should be set at an individual level, to support the psychosocial process to greater wellbeing, rather than thwart competency levels leading to feelings of negativity. The activities proved to be highly sociable, and appreciation ranged from forging new and strengthening existing relationships with others, acquaintances, family and colleagues particularly in post-COVID era of working-from-home. Social dynamics however, could result in negative experiences particularly when lines demarking expectations around roles and responsibilities were overstepped and this was evident in participant-participant as well as participant-practitioner dynamics. There was a reported sense of shared experience, a connection and relatedness to others. Learning something new or trying something new was reported as being valued, particularly for those further into life's course and those on a rehabilitation pathway. Both of these cohorts appreciated being recognised for learning achievements, expressing feelings of self-affirmation through competency thus boosting confidence and esteem. A sense of 'giving back' was rated highly across all participant cohorts which was initially predicted as 'giving back to the community', but the findings suggest that this concept was more nuanced and did include giving back to the community, but motive and satisfaction was extended to

helping younger and future generations, nature, the neighbourhood and even city that they cared about. The final theme is ‘sense of self’ which was expressed as rediscovering oneself, self-affirmation, recognition from others and escaping day to day roles through activities that support mutual relationships as well as autonomy.

In summary, in the context of nature, findings indicated that depending on individual circumstances, activities offered to varying degrees opportunities to achieve enhanced wellbeing through the Five Ways to Wellbeing and sense of self. The psycho-social processes involved are explained in detail in Chapter 7 but support self-determination through competency, relatedness and autonomy which depending on participant reasoning (wants, wishes and circumstance) can lead to enhanced wellbeing.

8.3 Objective 3 – Seek a greater understanding of ‘what circumstances’

To identify and explain contextual factors that contribute to the success of the phenomenon, including pathways such as green social prescribing to address the public health and environmental agendas.

The third objective sought to address the latter part of the realist enquiry, ‘*in what circumstances* (does the mechanism engage)?’ and this is largely represented by the findings related to the contextual elements, and within that the participant ‘reasoning’ (motivations) and practitioner ‘resources’ that interact that enable mechanisms. The findings in Chapter 4 highlighted a range of contextual factors that influenced the success of a programme. Perceptions from both participants and practitioners show that these contextual factors can influence, or be influenced by, both reasoning and resources.

A key contextual factor as previously discussed was the natural setting, and this was an obvious expectation to participation but nature on its own was not the key driver for participation. Chapter 7 discussed the drivers to motivation were underpinned by meaningfulness and choice at an individual level. The findings show that the meaningfulness of activities give agency for intrinsic motivations to be actioned, and these were personal depending on individual’s circumstance. Participant reasoning incorporated a mix of being in a natural setting with opportunity to be sociable,

undertake physical activity, improve a place they care about, do something positive for nature and try something new and learn skills. From a practitioner perspective, the physical space where activities take place is a practical resource consideration and not always easy to secure. There was an assumption by some practitioners that the natural urban landscape was not 'therapeutic' particularly for those more vulnerable. Findings challenged assumptions that for those on a rehabilitation pathway, the therapeutic value extends beyond exposure to subjective aesthetic qualities of a space. Similarly, there was an assumption by some practitioners that activities for wellbeing had to be low-level, low-risk (such as natural crafts and food growing) to be of therapeutic value. This assumption was refuted by findings that showed participants were motivated by being challenged physically and mentally, again this included those on rehabilitation pathway. Furthermore, the activities themselves are important in that they epitomise on a practical level the role of being custodians of the landscape and the rewards for this support competency and personal goals, thus feeding intrinsic motivational drivers.

The quantitative and qualitative findings showed that experience of undertaking the role of custodian, albeit for shorter or longer periods of time, was an underlying sentiment for why individuals had chosen to participate. This was often expressed or articulated as 'giving back' – doing something good for nature, improving a place, for the wider community and future generations. Furthermore, the findings revealed that the act of 'giving back' was a shared endeavour leading to a sense of relatedness with others centred on a common cause. There were examples however, where introjected regulation rather than intrinsic motivation came into play which thwarted the experience for some. This was evident in the corporate pathway, reported by a relatively smaller number of participants who questioned whether their activities had made any difference or had any impact in 'giving back' to the wider world, expressing their dissatisfaction at taking part, or they were 'made to come' because of work. Therefore, this study has produced evidence that suggests civic environmental activity can support Self Determination Theory's basic psychological needs, competency, relatedness and autonomy. However, the issue of choice, i.e. autonomy, is a key consideration in relation to the pathways to activities.

This study showed that the different pathways to activities offer opportunity for individuals to engage in activities depending on their motivations and circumstances. For example, participants on a self-directed ‘just take part’ pathway (i.e. not a formalised pathway), reported a personalised mix of drivers to participation which included a relationship with the physical space itself, learning practical skills to look after the space, and giving back to the wider community. Self Determination Theory (Deci & Ryan, 2012) supports that this type of pathway is optimal in that it aligns with personal intrinsic motivations for wanting to take part. However, the qualitative findings showed that pathways can offer opportunity to engage those who would not ordinarily be drawn to taking part in activities. The corporate pathway is a good example of this where some participants had chosen to try something new or out of their usual comfort zone. Therefore, the corporate pathway offers opportunity to reach those who are less engaged in their natural environment which is a positive step towards broadening reach to access the benefits of participation. The ‘just take part’ pathway presents an opportunity to take people on a journey to facilitate intrinsic motivation for social development and wellbeing shifting from external regulated motivations (being told to take part) to integrated regulation (wanting to take part) to intrinsic motivation (driven to take part), thus enabling behaviour change (Deci & Ryan, 2012). For this shift to happen, the activities must be meaningful and rewarding to the individual. This same conclusion can be applied to the formalised health pathways.

For those seeking rehabilitation formal health pathways were successful when undertaken in partnership with organisations who were geared up to provide the additional support and needs for that particular vulnerable cohort. The green social prescribing (GSP) pathway was reported by very few participants as their personal pathway to activities (for example only 4 participants out of 357 questionnaire respondents). However this is an emerging pathway, and its teething problems in relation to the flow between GPs, GSP link coordinators and patients (participants) are well documented (Bertotti et al., 2018). Practitioner experiences echoed the low numbers in turnout from the GSP pathway. Despite this pathway being less successful in engaging participants, GSP was a significant topic for practitioners, particularly

around resourcing and expectation from funders that influences delivery model and methods of evaluation. There were assumptions and lack of clarity over the types of activities appropriate and the audience for GSP, reflecting the current trend in discourse for GSP to be focus specifically on mental health using ecotherapy models of engagement (i.e. activities designed to offer ‘green care’ or ‘green-therapy’). Clearly there is a need for such services given the rising demand for support with mental health, however this approach on its own is limiting in breadth and impact and does not address the original aims of social prescribing to tackle non-medical issues relating to social determinants of health. There is currently a high level of general interest in GSP, and therefore these points are an important consideration for policy and practice.

To conclude on pathways, this study provides some evidence to show that all pathways are important and are necessary to broaden reach. Pathways are virtual and practical in that they are the means to which participants are drawn to and arrive at the point of participation. In many ways which pathway is less relevant, what is more important is that pathways are available that align with participant reasoning, their circumstance, i.e. wants, needs and aspirations.

Evidence from this study suggests that participation in civic environmental activity supports social development and wellbeing by facilitating autonomy, competency and relatedness - basic psychological needs. Therefore, there is scope to help tackle wider social determinants of health through sociable, physical, meaningful activities that provide positive impacts for the individual. This type of offer has a place under the GSP umbrella as part of ideally a rich portfolio of offers to suit different wants, desires and needs. However, to overly medicalise the experience – either through how offers are signposted, advertised or evaluated - puts at risk the success of GSP as a pathway from the participant’s self-determination positioning and practitioner deliverability. GSP offers huge potential to extend reach and meet needs. The following will discuss how reframing GSP will help to find more sustainable solutions to resourcing this pathway.

Resourcing nature-based activities for health and wellbeing was a key theme and concern that came through from the findings presented in Chapter 4, and this is well documented in the literature (Bertotti et al., 2018; Bertotti, 2024). Practitioners expressed their frustration at the way in which the commissioning process (that is,

funding secured from the health sector) influenced the way programmes had to be run. Strict criteria led to problems recruiting and retaining participants in programmes of activities as well as problems and questions over heavy-handed evaluations to satisfy health sector's cultural paradigm. Furthermore, this type of funding is modest, short-term and therefore presents problems for organisational resilience and the ability to sustain activities (Bertotti et al., 2018). In many ways this reflects the third sector's age-old continuous challenge to secure resources. However, this challenge is perceived to be particularly acute when it comes to GSP, the pathway-come-approach to delivering nature-based activities for health outcomes.

Findings show that part of the problem is the debate around dual terminology of GSP (Bertotti, 2024). As already discussed, the logistics in relation to the GSP pathway (e.g. relating to connections between patient, GPs and link workers) are recognised although this aspect was not a focus for the study. The concept of GSP being an approach has led to an overly restrictive categorisation of what GSP activity is, which has led to it being perceived by practitioners as a separate 'thing' or entity, distinct from business-as-usual nature-based activities. Scott et al. (2018, 2022) describe how conceptual, organisational and policy silos are created through the lack of multidisciplinary approaches being pursued from the outset and this chimes with the findings from this study in relation to GSP. Scott et al. advocate creating a common language to bridge and break down silos. The conclusion drawn from this study is to address this predicament by reframing what is meant and understood by nature-based activities in relation to GSP, and how that relates to how people engage with nature (Bragg & Atkins, 2016) (Figure 2 section 1.3.2) in the context of public health priorities.

The vision is to have a thriving green social prescribing scene with a rich portfolio of activity types and offers to address public health priorities, individual needs and aspirations to hopefully ease the strain on the NHS. It is unfeasible to lay the responsibility of this vision on the health sector, already stretched for resources. A more sensible approach would be to integrate and embed existing activity into a GSP and health promotion programme of activities across a region. This will require a shift from both sides: the environmental sector to be better at evaluation and bolder in its long-standing assertion of health and wellbeing outcomes; the health sector to

recognise and value a variety of offers available without overly impressing its own cultural parameters on programmes. A shift towards mainstreaming (Scott et al. 2022), i.e. being mutual stakeholders rather than funder-client relationship. In doing this more funding opportunities will become available.

Based on the findings and discussion in Chapter 7 Figure 38 presents a possible alternative model, which outlines a logic-based framework showing alternative funding model to sustain GSP and other pathways to civic environmental activity. As discussed in Chapter 7, the context to this study is the environmental sector operating a delivering on outputs to help nature recovery and resilience against climate change whilst achieving on social outcomes. In this model, the broadening of scope for GSP and integration of existing activities funded through capital investment in the environment allows for a more sustainable approach – or more options – for funding. It also indicates how participants could move between pathways as their reasoning and circumstances may change, thus optimising intrinsically motivated actions which hopefully could lead to behaviour change.

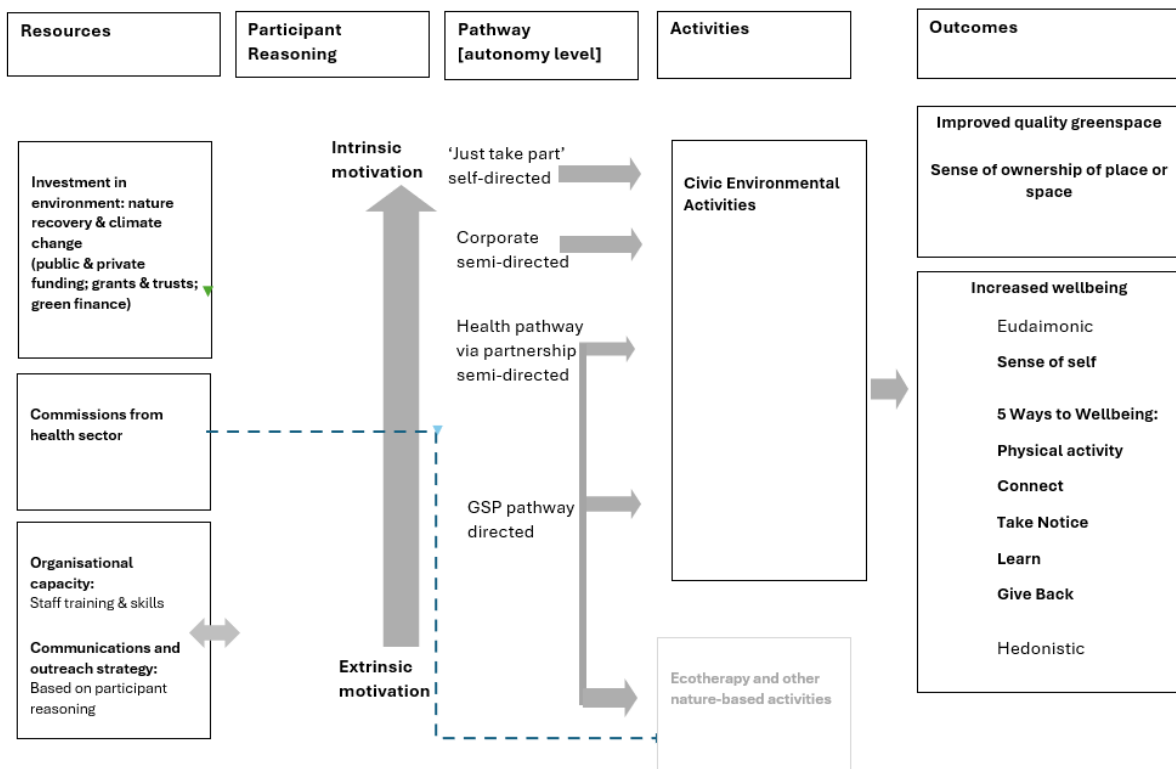


Figure 38. Logic based framework showing alternative funding model to sustain GSP and other pathways to civic environmental activity

8.4 Objective 4 – Contribution to the field

Produce a robust rationale and framework to guide the development and delivery of nature-based activities as part of urban greening initiatives for health and wellbeing outcomes, as a contribution towards the green social prescribing movement and wider green health agenda.

This study presents a microscale insight into a much larger picture on the impact of green infrastructure on human health. As discussed in the first section of this chapter, the intention was to ground the study in real life practice with the aim of making a contribution to this field of work and practice. The aim of a realist evaluation reflects this intention and Pawson and Tilley (1997) along with others since (Westhorpe, 2014; Westhorp et al., 2011) advocate concluding with a revised programme theory, incorporating learnings, new insight and knowledge (Pawson & Tilley, 1997).

Chapter 7 section 7.5.1 introduced Table 7-3 ‘Cumulations of C-M-O and explanatory theories which is a new layer to the original programme theory in the form of C-M-O cumulations intended to highlight the learnings from this study as explained in detail. Cumulations represent the learnings to date, and a realist study aims to get closer to understanding a phenomenon over time rather than declaring conclusions are finite (Pawson & Tilley, 1997). Therefore the C-M-O cumulations presented in Table 7-3 provide the next iteration of the programme theory overview of which is illustrated below in Figure 39. This nuanced additional layer to the programme theory will form the basis for an evolving framework intended to help guide the development and delivery of nature based activities as part of urban greening initiatives. Therefore, the learning outlined in Table 7-3 C-M-O Cumulations provides the rationale for the recommendations in the next section.

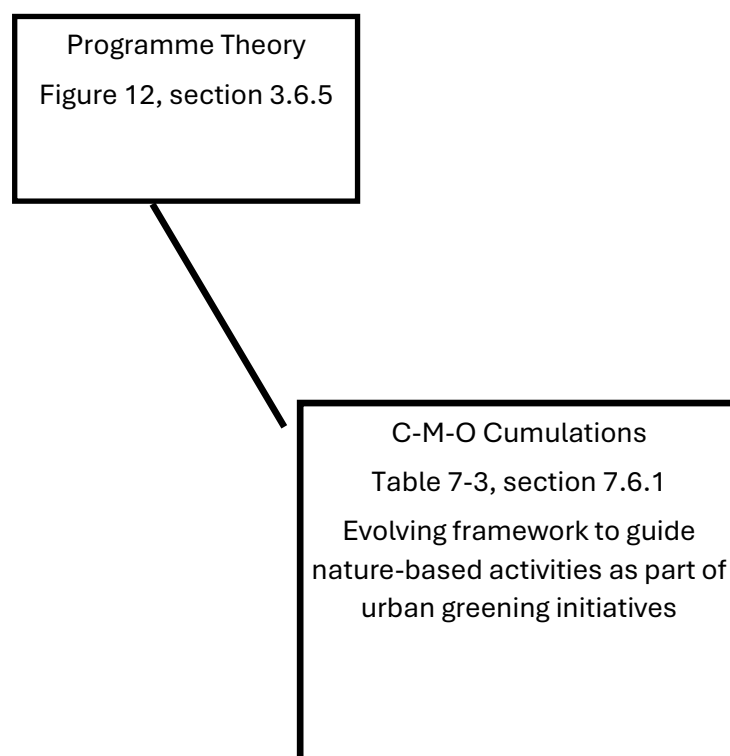


Figure 39. The relationship between original Programme Theory figure 12, and the revised, nuanced detail in figure 7-3

From a theoretical perspective, this study is part of a growing body of work that uses a realist evaluation approach to better understand social programmes (Bertotti et al., 2018; Howarth et al., 2021; Renmans & Pleguezuelo, 2023; Baker et al., 2023). This contributes to the methodology by giving step by step detail of the design, planning and

analysis used within this methodological framework. Importantly, this study aimed to address a gap identified in the literature of primary studies that focus specifically on civic environmental activities in an urban setting. There were limited primary studies in this area, and none were found which undertook a perspective of broader contextual factors. Therefore, this study makes a significant contribution to addressing this gap.

This study has also made contributions to practice further to those described in section 8.1 of this concluding chapter. For example, the GWTWB questionnaire was devised specifically for this study but is based on the existing Five Ways to Wellbeing framework (Aked et al., 2008). Whilst it has its limitations, it has proven to be an effective and user-friendly tool to capture wellbeing impacts of participant's experience pre and post session. This tool will continue to be used to collect wellbeing impacts into the future. Moreover, environmental organisations as well as Natural England have expressed an interest in its use. The next iteration of the GWTWB will be a digital version to be used in the field through a mobile device.

The journey of undertaking this PhD gave opportunity to co-author a book chapter in collaboration with the supervision team (based at the University of Salford and Edge Hill University) for this thesis: critically exploring public realm greenspace as a therapeutic landscape and the role of green social prescribing (Thompson et al. 2023).

8.4.1 Limitations of the study

The extent to which internal validity, i.e. whether findings can accurately reflect causal relationship between variables free from extraneous influences, is not the aim of a realist evaluation. Instead, the focus is generative causality, that is, to understand the underlying processes within the C-M-O configuration (Pawson and Tilley, 1997). A realist evaluation aims to get closer to the truth, not declare absolute truth of knowledge. This statement in itself presents a limitation to claiming whether the intervention 'works' (Pawson and Tilley, 1997).

In relation to external validity, the quest for generalisability using quantitative randomised control methods is the coveted approach within the current health sector paradigm, however this would have been discord to the realist approach taken in the study (section 3.2.3 discusses in detail the challenges around evidence). In any case,

in quasi-experimental research designs, randomisation is not always feasible for allocating participants to groups (Bickman and Rog, 2009). Pre-existing extraneous variables that cannot be controlled will be present because of the nature of social programmes and self-reported subjective wellbeing (Pawson and Tilley, 1997; Deci and Ryan, 2008). Due to the methodological design and philosophical underpinnings, the study lent itself to purposive sampling. The mixed method approach generated strong results. Although the quantitative data from the GWTWB questionnaire showed findings that were statistically significant, the sub-groups within some of the datasets were not able to generate anything of statistical significance. Furthermore, small qualitative sample sizes and chosen methods (such as focus groups, as discussed in section 3.8.3) present limitations to validity. A qualitative approach in general, does not lend itself to generalisability. In the absence of a longitudinal study or a control group, it is difficult to attribute all the changes to the impact of participation in civic environmental activities. Therefore, all of these factors highlight limitations to the study findings and conclusions.

The study attempted to reflect the holistic and dynamic nature of the components within the programme theory, but this ambition may have resulted in trade-offs in terms of depth within each specific area of enquiry. The phenomenon in question specifically relates to civic environmental activity, i.e. activities undertaken by participants in a voluntary capacity that improve local greenspaces and places. The GWTWB questionnaire was designed specifically for the activity within a particular context and over a short time-frame (i.e. to be conducted as a one-off in an activity session). Therefore, methods using the GWTWB questionnaire and subsequent findings are not intended to be applied to other forms of nature-based activities. For example horticulture therapy taking place in a closed-setting (non-public realm), although there were some commonalities with previous studies in this context (Howarth et al., 2016). However, some of the findings may prove useful to future studies in similar or alternative contexts, for example relating to the psychological processes underlying mechanisms. The practitioner perspectives and subsequent findings are highly relevant, particularly in relation to GSP, however the insights gleaned are constrained to a few organisations working in Greater Manchester, England.

As a practitioner holding the position that I do at City of Trees, researcher bias is an obvious ‘red flag’. Throughout the planning, design and conduct of the study I was acutely aware of bias and therefore incorporated reflexive approach throughout. In line with realist evaluation and Reflexive Thematic Analysis (Braun and Clark, 2013), subjectivity is not viewed solely as a limitation, but as an asset when acknowledged transparently. Steps were taken to acknowledge bias at all points throughout the study, as outlined in sections 1.8 and 3.14. I was also interested in the aspects of civic environmental activity that would lead to negative impacts on wellbeing, and my starting point was not to assume that everyone loves being in nature or values nature in equal measure and post-study I still think that is the case. Completing the study has reenforced my view that nature is the medium by which other mechanisms fire and that for people to find their own agency through meaningful activity is the best outcome for people and the natural world in an urban setting.

8.4.2 Recommendations for policy & practice

The following recommendations are intended to contribute towards the evolving work in the field of nature-based activities for wellbeing. The recommendations have been derived from the findings of this study.

1. A collaborative approach between the environmental and health sector is key to achieving common aims
2. Broadening the scope of GSP to include a greater variety of activities will de-risk restricting the pathway for participation and increase funding opportunities making this pathway and approach more sustainable
3. A sensible and appropriate approach to evaluation should be undertaken to civic environmental activities, this may mean a more light-touch approach to evaluation. Not doing so raises ethical questions around appropriate use of data collection based on the context of the activity and alienating participants
4. To develop further the framework presented in this chapter to co-produce an evaluation framework across all nature-based activities to guide practitioners to best-practice evaluation methods.

5. To develop a strategic approach to a diverse range of funding, rather than piece-meal, is key to the success of an equitable offer across a city region
6. To work in partnership between common aims and objectives between health support services and the environmental sector to combine resources and draw on organisational strengths to achieve optimum gains
7. Challenge thinking and practice on the notion of what constitutes therapeutic activity in order to respond to participant reasoning – for example the assumption that therapeutic activity needs to be low-level and low risk.
8. Activities should offer opportunity and flexibility for participants to set their own goals in relation to physical activity
9. Basic needs need to be met as much as possible, and advice on appropriate clothing, providing refreshments and facilities will improve participation experience.
10. Consider engagement models carefully with the aim of responding individual and community need rather than funding parameters
11. There is scope to introduce the broader context of the impacts of the voluntary work during each session to raise awareness for the need for nature recovery and climate resilient landscapes. However, this should not overshadow participant's wants, needs and aspirations relating to participation.

8.4.3 Recommendation for further research

One of the key challenges to undertaking this study was the sheer breadth, depth and complexity of the study needed to explore the broader aspects – i.e. the contextual factors – as much as the ways to wellbeing through participation. The phenomenon in question specifically relates to civic environmental activity, i.e. activities undertaken by participants in a voluntary capacity that improve local greenspaces and places.

Therefore, the findings are not intended to be applied to other forms of nature-based activities, for example horticulture therapy taking place in a non-public realm context. However there are some commonalities with previous studies in this context (Howarth 2020; Howarth 2021) therefore some of the findings may prove useful to future studies in similar or alternative contexts.

The following recommendations are for further research into the phenomenon that were beyond the scope and scale of the study. As discussed, a realist approach merely gets closer to an understanding of the phenomenon. Therefore, there is opportunity to refine further the programme theory over time through research that builds and compliments the work of this study, and previous associated studies.

1. Further exploration of the demographic considerations, age and gender across the life's course in relation to the phenomenon. Although there was no statistically significant difference across demographics, the qualitative data suggested there may be something interesting relating to life roles across the life course.
2. Demographic data showed that non-white and non-British participation from the data set was 14%, of which this was made up of a range of ethnicity and nationalities. There was not scope within this study to give this the attention it deserves without making arguably crass assumptions in a binary way (e.g. non-white v white). The issue of diversity and engaging in greening initiatives is underrepresented in the literature and therefore there is scope to explore this further.
3. Studies that track a baseline of health and nature to understand better the relationship between health improvement and nature recovery through undertaking nature-based activities across a defined area over a period of time.
4. Further investigation into how participants may transcend across pathways, for example from a GSP pathway, through to a self-directed pathway and how this relates to intrinsic motivation.
5. Further investigation into any wellbeing impacts derived from participation in activities specifically framed under climate change and nature recovery

8.5 Conclusion close

This study offered an opportunity to contribute to a relatively new field of academic work which is both exciting and evolving at pace (NASP, 2024). This study has shown that civic environmental activities can – under the right circumstances, a combination of participant reasoning and practitioner resources – lead to enhanced hedonistic and eudaimonic wellbeing. It is hoped that the findings and recommendations from this small-scale study contribute to making a tangible difference to individual and

population wellbeing. In turn this could help to address inequalities in health and quality greenspace at a regional level which currently go hand in hand (Cook, Howarth & Wheeler, 2019). Many small steps could help to make a difference at a global level.

References

- Abdallah, S., Steuer, N., Marks, N. and Page, N., 2008. Well-being evaluation tools: A research and development project for the Big Lottery Fund. *London: New Economics Foundation*.
- Acevedo, E.O. and Ekkekakis, P., 2006. *Psychobiology of physical activity*. Human Kinetics.
- Acocella, I., 2012. The focus groups in social research: advantages and disadvantages. *Quality & quantity*, 46, pp.1125-1136.
- Afzalan, N., & Muller, B. (2014). The Role of Social Media in Green Infrastructure Planning: A Case Study of Neighborhood Participation in Park Siting. *The Journal of Urban Technology*, 21(3), 67–83. <https://doi.org/10.1080/10630732.2014.940701>
- Aked, J., Marks, N., Cordon, C., & Thompson, S. (2008). Five ways to well-being: The evidence. London: New Economics Foundation.
- Alaimo, K., Reischl, T. M., & Allen, J. O. (2010). Community gardening, neighborhood meetings, and social capital. *Journal of Community Psychology*, 38(4), 497–514. <https://doi.org/10.1002/jcop.20378>
- Aldridge, F. and Lavender, P., 2000. *The Impact of Learning on Health*. National Institute of Adult Continuing Education, 21 De Montfort Street, Leicester LE11 7GE, United Kingdom, Web site: <http://www.niace.org.uk> (6 British pounds).
- Allen, J. & Balfour, R., (2014). Natural solutions for tackling health inequalities. *University College London Institute of Health Equity*.
- Antonovsky, A., 1979. Health, stress, and coping. *New perspectives on mental and physical well-being*, pp.12-37.
- Apostolopoulou, E. and Adams, W.M., 2017. Biodiversity offsetting and conservation: reframing nature to save it. *Oryx*, 51(1), pp.23-31.
- Apostolopoulou, E., Greco, E. and Adams, W.M., 2019. Biodiversity Offsetting and the Production of Equivalent Natures': A Marxist Critique. *ACME: An International E-Journal for Critical Geographies*.
- Asah, S. T. & Blahna, D. J. (2013) 'Practical implications of understanding the influence of motivations on commitment to voluntary urban conservation stewardship'. *Conservation Biology*. doi: 10.1111/cobi.12058.
- Asah, S. T., Lenentine, M. M. & Blahna, D. J. (2014) 'Benefits of urban landscape eco-volunteerism: Mixed methods segmentation analysis and implications for volunteer retention'. *Landscape and Urban Planning*. doi: 10.1016/j.landurbplan.2013.12.011.
- Asah, S.T. & Blahna, D.J., (2012). Motivational functionalism and urban conservation stewardship: implications for volunteer involvement. *Conservation Letters*, 5(6), pp.470-477.
- Ashman, K.M. & Baringer, P.S., (2001). *After the science wars*. Psychology Press.
- Astbury B & Leeuw FL (2010). Unpacking black boxes: mechanisms and theory building in evaluation. *American Journal of Evaluation* 31(3): 363–381.

- Attride-Stirling, J. (2001). Thematic networks: an analytic tool for qualitative research. *Qualitative Research : QR*, 1(3), 385–405.
<https://doi.org/10.1177/146879410100100307>
- Baker, Rachel Mairi, Mohasin Ahmed, Marcello Bertotti, John Cassidy, Rejoice Chipuriro, Emma Clewett, Cam Donaldson et al. "Common health assets protocol: a mixed-methods, realist evaluation and economic appraisal of how community-led organisations (CLOs) impact on the health and well-being of people living in deprived areas." *BMJ open* 13, no. 3 (2023): e069979.
- Barrett, A., Kajamaa, A. & Johnston, J., (2020). How to... be reflexive when conducting qualitative research. *The clinical teacher*, 17(1), pp.9-12.
- Barringer, P. & Ashman, K., (2001). *After the Science Wars: Introduction: the "science Wars."*. Routledge.
- Barton, J. & Pretty, J., (2010). What is the best dose of nature and green exercise for improving mental health? A multi-study analysis. *Environmental science & technology*, 44(10), pp.3947-3955.
- Barton, J. and Pretty, J., 2010. What is the best dose of nature and green exercise for improving mental health? A multi-study analysis. *Environmental science & technology*, 44(10), pp.3947-3955.
- Barton, J., Wood, C., Pretty, J. and Rogerson, M., 2016. Green exercise for health. *Green exercise: Linking nature, health and well-being*, pp.26-36.
- Bell, S.L., Phoenix, C., Lovell, R. & Wheeler, B.W., (2014). Green space, health and wellbeing: Making space for individual agency. *Health & Place*, 30, pp.287-292.
- Bem, D.J., 1972. Self-perception theory. *Advances in experimental social psychology*, 6.
- Berman, M.G., Jonides, J. and Kaplan, S., 2008. The cognitive benefits of interacting with nature. *Psychological science*, 19(12), pp.1207-1212.
- Bernard, L.C., Hutchison, S., Lavin, A. and Pennington, P., 1996. Ego-strength, hardiness, self-esteem, self-efficacy, optimism, and maladjustment: Health-related personality constructs and the "Big Five" model of personality. *Assessment*, 3(2), pp.115-131.
- Bertotti, M. ed., 2024. *Social Prescribing Policy, Research and Practice: Transforming Systems and Communities for Improved Health and Wellbeing*. Springer.
- Bertotti, M., Dias, S., Gama, A., Herrmann, W., Husk, K., Khan, K., Lee, K.H., Mulligan, K., Polley, M., Robinson, D. and Tierney, S., 2024. Conclusion: The Present and Future of Social Prescribing. *Social Prescribing Policy, Research and Practice: Transforming Systems and Communities for Improved Health and Wellbeing*, pp.161-183.
- Bertotti, M., Frostick, C., Hutt, P., Sohanpal, R. and Carnes, D., 2018. A realist evaluation of social prescribing: an exploration into the context and mechanisms underpinning a pathway linking primary care with the voluntary sector. *Primary health care research & development*, 19(3), pp.232-245.
- Better Evaluation, 2025. Retrieved 01 April 2025, from <https://www.betterevaluation.org/methods-approaches/approaches/realist-evaluation>
- Bhaskar R. (1978). *A Realist Theory of Science*. London: Verso.

- Bickerdike, L., Booth, A., Wilson, P.M., Farley, K. Wright, K., (2017). Social prescribing: less rhetoric and more reality. A systematic review of the evidence. *BMJ open*, 7(4), p.e013384.
- Bickman, L. and Rog, D.J. eds., 2008. *The SAGE handbook of applied social research methods*. Sage publications.
- Biermann, F., Hickmann, T., Sénit, C.A., Beisheim, M., Bernstein, S., Chasek, P., Grob, L., Kim, R.E., Kotzé, L.J., Nilsson, M. and Ordóñez Llanos, A., 2022. Scientific evidence on the political impact of the Sustainable Development Goals. *Nature Sustainability*, 5(9), pp.795-800.
- Binder, M. & Freytag, A. (2013) 'Volunteering, subjective well-being and public policy', *Journal of Economic Psychology*, 34, pp. 97–119. doi: 10.1016/j.joep.2012.11.008.
- Birch, M., (2005). Cultivating wildness: three conservation volunteers' experiences of participation in the Green Gym scheme. *British Journal of Occupational Therapy*, 68(6), pp.244-252.
- Bird, W., (2004). Natural Fit: Can green space and biodiversity increase levels of physical activity. *Royal Society for the Protection of Birds*.
- Bird, W., 2007. *Natural thinking*. Royal Society for the Protection of Birds.
- Bokhorst-Heng, W. and Marshall, K.K., 2019. Informing research (practices) through pedagogical theory: Focus groups with adolescents. *International Journal of Research & Method in Education*, 42(2), pp.148-162.
- Booth, A., Wright, J. & Briscoe, S., (2018). Scoping and searching to support realist approaches. *Doing realist research*. London: Sage, pp.147-166.
- Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Thousand Oaks, CA: Sage.
- Bragg, R. & Atkins, G., (2016). A review of nature-based interventions for mental health care. *Natural England Commissioned Reports*, 204, p.18.
- Bragg, R. & Leck, C., (2017). Good practice in social prescribing for mental health: The role of nature-based interventions. *Natural England Commissioned Reports*, 228.
- Bragg, R. and Atkins, G., 2016. A review of nature-based interventions for mental health care. *Natural England Commissioned Reports*, 204, p.18.
- Bragg, R., (2014). Nature-based interventions for mental wellbeing and sustainable behaviour: the potential for green care in the UK (Doctoral dissertation, University of Essex).
- Bragg, R., Wood, C. & Barton, J. (2013) 'Ecominds effects on mental wellbeing: An evaluation for Mind An evaluation for Mind 1'. Available at: <https://www.mind.org.uk/media/354166/Ecominds-effects-on-mental-wellbeing-evaluation-report.pdf> (Accessed: 21 November 2017).
- Braun, V. & Clarke, V., (2013). *Successful qualitative research: A practical guide for beginners*. sage.
- Braun, V. & Clarke, V., (2020). One size fits all? What counts as quality practice in (reflexive) thematic analysis?. *Qualitative research in psychology*, pp.1-25.

- Braun, V. & Clarke, V., (2021). Can I use TA? Should I use TA? Should I not use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. *Counselling and Psychotherapy Research*, 21(1), pp.37-47.
- Braun, V., & V. Clarke. (2006). *Using thematic analysis in psychology*. *Qualitative Research in Psychology* 3:77. doi:10.1191/1478088706qp063oa.
- Braun, V., & V. Clarke. (2014a). What can 'thematic analysis' offer health and wellbeing researchers? *International Journal of Qualitative Studies on Health and Well-being* 9:26152. doi:10.3402/qhw.v9.26152.
- Braun, V., & V. Clarke. (2019b). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise & Health* 11 (4):589–97. doi:10.1080/2159676X.2019.1628806
- Braun, V., Clarke, V. (2021) One size fits all? What counts as quality practice in (reflexive) thematic analysis?, *Qualitative Research in Psychology*, 18:3,328-352, DOI: 10.1080/14780887.2020.1769238
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84 , 822–848.
- Brown, K. W., Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry*, 18 , 211–237.
- Burls A. (2007). People and green spaces: promoting public health and mental health well-being through ecotherapy. *Journal of Public Mental Health*.,6(3):24–39.
- Burnett, H., Olsen, J.R., Nicholls, N. & Mitchell, R., (2021). Change in time spent visiting and experiences of green space following restrictions on movement during the COVID-19 pandemic: a nationally representative cross-sectional study of UK adults. *BMJ open*, 11(3), p.e044067.
- Caissie, L.T. and Halpenny, E.A., 2003. Volunteering for nature: Motivations for participating in a biodiversity conservation volunteer program. *World Leisure Journal*, 45(2), pp.38-50.
- Cao, B., 2015. *Environment and citizenship*. Routledge.
- Carter, C., 2008. Offenders and Nature schemes: using conservation and forest management in rehabilitation. *Research Summary*. Farnham: Farnham Forest Research.
- CFT. (2024). Community Forest Trust. Retrieved 16 September, 2024 from <https://www.communityforest-trust.org/>
- Chan, K.M., Balvanera, P., Benessaiah, K., Chapman, M., Díaz, S., Gómez-Baggethun, E., Gould, R., Hannahs, N., Jax, K., Klain, S. and Luck, G.W., 2016. Why protect nature? Rethinking values and the environment. *Proceedings of the national academy of sciences*, 113(6), pp.1462-1465.
- Chatzimentor, A., Apostolopoulou, E. and Mazaris, A.D., 2020. A review of green infrastructure research in Europe: Challenges and opportunities. *Landscape and Urban Planning*, 198, p.103775.
- City of Trees. (2024). Retrieved 16 September, 2024 from <https://www.cityoftrees.org.uk/>

- Clarke, V. & Braun, V., (2014). Thematic analysis. In *Encyclopedia of critical psychology* (pp. 1947-1952). Springer, New York, NY.
- Clement, S. (2020). Governing the anthropocene: novel ecosystems, transformation and environmental policy. *Springer Nature*, pp 77-79.
- Convention on Biological Diversity, 2022. Kunming-Montreal global biodiversity framework. Available at: <https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf> (Accessed: 28 May 2024).
- Cook, P.A., Howarth, M. & Wheeler, C.P., (2019). Biodiversity and Health in the Face of Climate Change: Implications for Public Health. In *Biodiversity and Health in the Face of Climate Change* (pp. 251-281). Springer, Cham.
- Coombes, E., Jones, A.P. & Hillsdon, M., (2010). The relationship of physical activity and overweight to objectively measured green space accessibility and use. *Social science & medicine*, 70(6), pp.816-822.
- Creswell, J.W., (2009). *Mapping the field of mixed methods research*.
- Crotty, M., (2004). *The Foundations of Social Research* (1998). Australia: Allen & Unwin.
- Dayson, C., & Damm, C. (2020). *Evaluation of the Rotherham Social Prescribing Service for long term conditions*. <https://www.shu.ac.uk/centre-regional-economic-social-research/publications/evaluation-of-the-rotherham-social-prescribing-service-for-long-term-conditions>
- de Bell, S., Alexandre, J.C., Menzel, C., Sousa-Silva, R., Straka, T.M., Berzborn, S., Bürck-Gemassmer, M., Dallimer, M., Dayson, C., Fisher, J.C. and Haywood, A., 2024. Nature-based social prescribing programmes: opportunities, challenges, and facilitators for implementation. *Environment International*, p.108801.
- De Souza, D.E., (2013). Elaborating the Context-Mechanism-Outcome configuration (CMOC) in realist evaluation: a critical realist perspective. *Evaluation*, 19(2), pp.141-154.
- Deci, E.L. & Ryan, R.M., (2008). Hedonia, eudaimonia, and well-being: An introduction. *Journal of happiness studies*, 9(1), pp.1-11.
- Deci, E.L. and Ryan, R.M., 2012. Self-determination theory. *Handbook of theories of social psychology*, 1(20), pp.416-436.
- Deci, E.L., Betley, G., Kahle, J., Abrams, L. and Porac, J., 1981. When trying to win: Competition and intrinsic motivation. *Personality and social psychology bulletin*, 7(1), pp.79-83.
- Deci, E.L., Koestner, R. and Ryan, R.M., 1999. A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological bulletin*, 125(6), p.627.
- Decision Lab, 2024. Retrieved 21 Sept 2024 from <https://thedecisionlab.com/reference-guide/organizational-behavior/the-com-b-model-for-behavior-change>
- DEFRA, (2018). A green future: our 25 year plan to improve the environment.
- Dennis, M. & James, P. (2016) 'User participation in urban green commons: Exploring the links between access, voluntarism, biodiversity and well being', *Urban Forestry & Urban Greening*, 15, pp. 22–31. doi: 10.1016/j.ufug.2015.11.009.

- Dennis, M., Cook, P.A., James, P., Wheeler, C.P. and Lindley, S.J., 2020. Relationships between health outcomes in older populations and urban green infrastructure size, quality and proximity. *BMC public health*, 20, pp.1-15.
- Department for Environment, Food and Rural Affairs. (2011). *The Natural Choice: securing the value of nature*. London: HMG.
- Dewe, P. and Kompier, M., 2008. *Mental Capital and Wellbeing: Making the most of ourselves in the 21st century*. London: The Government Office for Science.
- Dickie, I., Anderson, S., Cryle, P., Gianferrara, E., Ferrini, S., Zolyomi, A., Kotulak, M., Loppin, C., Lukonits, E., Civic, K. & Snethlage, M., (2017). Promotion of ecosystem restoration in the context of the EU biodiversity strategy to 2020: report to European Commission, DG Environment.
- Diener, E. and Ryan, K., 2009. Subjective well-being: A general overview. *South African journal of psychology*, 39(4), pp.391-406.
- Diener, E. and Seligman, M.E., 2002. Very happy people. *Psychological science*, 13(1), pp.81-84.
- Dobson, A., 2007. Environmental citizenship: Towards sustainable development. *Sustainable development*, 15(5), pp.276-285.
- Dobson, A., 2010. Environmental citizenship and pro-environmental behaviour: Rapid research and evidence review. *Report for the Sustainable Development Research Network*, pp.1-86.
- Douglas, O., Lennon, M. and Scott, M., 2017. Green space benefits for health and well-being: A life-course approach for urban planning, design and management. *Cities*, 66, pp.53-62.
- Dunn, A.L., Trivedi, M.H., Kampert, J.B., Clark, C.G. and Chambliss, H.O., 2005. Exercise treatment for depression: efficacy and dose response. *American journal of preventive medicine*, 28(1), pp.1-8.
- Dunn-Capper, R., Quintero-Urbe, L.C., Pereira, H.M. and Sandom, C.J., 2023. Diverse approaches to nature recovery are needed to meet the varied needs of people and nature. *Sustainability Science*, pp.1-17.
- Emmel, N., Greenhalgh, J., Manzano, A., Monaghan, M. & Dalkin, S. eds., (2018). *Doing realist research*. Sage.
- Englands Community Forests. (2024). Retrieved 16 September, 2024 from <https://www.communityforest-trust.org/>
- Esch, T., Fricchione, G.L. and Stefano, G.B., 2003. The therapeutic use of the relaxation response in stress-related diseases. *Medical science monitor: international medical journal of experimental and clinical research*, 9(2), p.34.
- Esmee Fairbairn. (2024). Retrieved 16 September, 2024 from <https://esmeefairbairn.org.uk/>
- Etzioni, A. (1993). *The Spirit of Community: Rights, Responsibilities and the Communitarian Agenda*. Crown Publishers Inc., New York
- Faizi, N. and Alvi, Y., 2023. *Biostatistics manual for Health Research: A practical guide to data analysis*. Elsevier.
- Field, J., 2005. *Social capital and lifelong learning*. Bristol: Policy Press.

Field, J., 2009. Good for your soul? Adult learning and mental well-being. *International Journal of Lifelong Education*, 28(2), pp.175-191.

Finniss, D.G., Kaptchuk, T.J., Miller, F. and Benedetti, F., 2010. Biological, clinical, and ethical advances of placebo effects. *The Lancet*, 375(9715), pp.686-695.

Fixsen, A. and Barrett, S., 2022. Challenges and approaches to green social prescribing during and in the aftermath of COVID-19: a qualitative study. *Frontiers in psychology*, 13, p.861107.

Foresight Mental Capital and Wellbeing Project (2008). Final Project report – Executive summary. The Government Office for Science, London.

Forestry England. (2024). Retrieved 16 September, 2024 from <https://www.forestryengland.uk/wellbeing>

Francis, J., Wood, L.J., Knuiman, M. & Giles-Corti, B., (2012). Quality or quantity? Exploring the relationship between Public Open Space attributes and mental health in Perth, Western Australia. *Social science & medicine*, 74(10), pp.1570-1577.

Freire, P., 1970. Cultural action and conscientization. *Harvard educational review*, 40(3), pp.452-477.

George, K. & Sice, P. (2014) 'The Emergence of Wellbeing in Community Participation', *Philosophy of Management*. Springer, 13(2), pp. 5–18. doi: 10.5840/pom20141328.

Gesler, W.M., 1992. Therapeutic landscapes: medical issues in light of the new cultural geography. *Social science & medicine*, 34(7), pp.735-746.

GFI Green Finance Institute 2024. Retrieved 21 September 2024 from <https://www.greenfinanceinstitute.com/>

Gibbons, A., Hardman, M., Howarth, M., James, C. & Sherriff G. (2017). Care Farming and Green Care in Salford. The University of Salford.

Gilmore, B., McAuliffe, E., Power, J. & Vallières, F., (2019). Data analysis and synthesis within a realist evaluation: toward more transparent methodological approaches. *International Journal of Qualitative Methods*, 18, p.1609406919859754.

Glennie, C., 2020. Growing together: Community coalescence and the social dimensions of urban sustainability. *Sustainability*, 12(22), p.9680.

GM Green City, 2020. *The Natural Capital Approach in Greater Manchester*. Available at: https://gmgreencity.com/wp-content/uploads/2021/08/GM-Natural-Capital-Accounts-Summary-March-2019_Digital-1.pdf (Accessed: 22 May 2024).

GM Integrated Care, 2024. Retrieved 21 September 2024 from <https://gmintegratedcare.org.uk/>

GMCAa. (2021). Greater Manchester 5 Year Environment Plan. Retrieved from https://www.greatermanchester-ca.gov.uk/media/1986/5-year-plan-branded_3.pdf

GMCAb Greater Manchester Strategy (2024) https://www.greatermanchester-ca.gov.uk/media/1084/greater_manchester_summary_full_version.pdf

GMLID. (2021). Greater Manchester Local Industrial Strategy. Retrieved from <https://www.greatermanchester-ca.gov.uk/media/2132/gm-local-industrial-strategy-web.pdf>

- GMMHWS. (2021). GM Mental Health & Wellbeing Strategy. Retrieved 21 September 2021, from <http://www.gmhsc.org.uk/wp-content/uploads/2018/04/GM-Mental-Health-Summary-Strategy.pdf>
- GMPHP. (2021). Greater Manchester Population Health Plan. Retrieved 21 September 2021, from <https://www.gmhsc.org.uk/wp-content/uploads/2018/05/Population-Health-Plan-2017-2021.pdf>
- GMSF. (2021). Greater Manchester Spatial Framework. Retrieved 21 September 2021 from <https://www.greatermanchester-ca.gov.uk/what-we-do/housing/greater-manchester-spatial-framework/>
- Gooch, M., 2005. Voices of the volunteers: an exploration of the experiences of catchment volunteers in coastal Queensland, Australia. *Local environment*, 10(1), pp.5-19.
- Gore, T., Dayson, C., Eadson, W., Gilbertson, J., Lawless, P., Phang, Z., Provins, A. and Wilson, I., 2010. Assessing the Value and Benefits of Groundwork.
- Gore, T., Eadson, W., Ozdemiroglu, E., Gianferrara, E. & Phang, Z., (2013). Green Infrastructure's contribution to economic growth: a review.
- Goswami, U., (2008). Mental capital and wellbeing: making the most of ourselves in the 21st century: learning difficulties: future challenges.
- Gray, S. & Kellas, A., (2020). Covid-19 has highlighted the inadequate, and unequal, access to high quality green spaces. *The BMJ Opinion*, 3.
- Gray, S. and Kellas, A., 2020. Covid-19 Has Highlighted the Inadequate, and Unequal. *Access to High*.
- Greater Manchester Population Health Plan (2024)
<https://gmintegratedcare.org.uk/wp-content/uploads/2022/06/population-health-plan-2017-2021.pdf>
- Green Finance Institute, (2024). Retrieved 21 September 2024 from <https://www.greenfinanceinstitute.com/>
- Greenfield, E.A. and Marks, N.F., 2004. Formal volunteering as a protective factor for older adults' psychological well-being. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 59(5), pp.S258-S264.
- Greenhalgh, T. and Peacock, R., 2005. Effectiveness and efficiency of search methods in systematic reviews of complex evidence: audit of primary sources. *Bmj*, 331(7524), pp.1064-1065.
- Groundwork. (2024). Retrieved 16 September, 2024 from <https://www.groundwork.org.uk/greatermanchester/>
- Hansen-Ketchum, P.A. & Halpenny, E.A., (2011). Engaging with nature to promote health: bridging research silos to examine the evidence. *Health Promotion International*, 26(1), pp.100-108.
- Hanson, R., 2009. *Buddha's brain: The practical neuroscience of happiness, love, and wisdom*. New Harbinger Publications.
- Hanson, R., 2013. *Hardwiring Happiness: The Practical Science of Reshaping Your Brain-and Your Life*. Random House.

Haywood, A., Dayson, C., Garside, R., Foster, A., Lovell, B., Husk, K., Holding, E., Thompson, J., Shearn, K., Hunt, H. and Dobson, J., 2024. National evaluation of the preventing and tackling mental ill health through green social prescribing project: Final report-March 2021 to June 2023.

Haywood, A., Thompson, J., Foster, A., Dayson, C., Holding, E., Garside, R., Hunt, H., Shearn, K., Dobson, J. and Husk, K., 2024. OP118 Preventing and tackling mental ill health through green social prescribing: findings from a realist-informed, mixed methods evaluation.

Headey, B., 2008. Life goals matter to happiness: A revision of set-point theory. *Social indicators research*, 86, pp.213-231.

Heritage Fund. (2024). Retrieved 16 September, 2024 from <https://www.heritagefund.org.uk/>

HF. (2024). Heritage Fund Wellbeing Impacts. Retrieved 08 October 2024, from <https://www.heritagefund.org.uk/publications/wellbeing-guidance>

Hobson, K., 2013. On the making of the environmental citizen. *Environmental Politics*, 22(1), pp.56-72.

Hodson, D., 2014. Becoming part of the solution: Learning about activism, learning through activism, learning from activism. *Activist science and technology education*, pp.67-98.

Holloway, I. (1997). Basic concepts for qualitative research. Oxford: Wiley-Blackwell.

Holmes, A.G.D., 2020. Researcher Positionality--A Consideration of Its Influence and Place in Qualitative Research--A New Researcher Guide. *Shanlax International Journal of Education*, 8(4), pp.1-10.

Houlden, V., Weich, S., de Albuquerque, J.P., Jarvis, S. & Rees, K., (2018). The relationship between greenspace and the mental wellbeing of adults: a systematic review. *PLoS one*, 13(9), p.e0203000.

Howarth, M., Brettell, A., Hardman, M. and Maden, M., 2020. What is the evidence for the impact of gardens and gardening on health and well-being: a scoping review and evidence-based logic model to guide healthcare strategy decision making on the use of gardening approaches as a social prescription. *BMJ open*, 10(7), p.e036923.

Howarth, M., Griffiths, A., Da Silva, A. and Green, R., 2020. Social prescribing: A 'natural' community-based solution. *British journal of community nursing*, 25(6), pp.294-298.

Howarth, M., Lawler, C. & da Silva, A., (2021). Creating a transformative space for change: A qualitative evaluation of the RHS Wellbeing Programme for people with long term conditions. *Health & Place*, 71, p.102654.

Howarth, M.L., McQuarrie, C., Withnell, N. & Smith, E., (2016). The influence of therapeutic horticulture on social integration. *Journal of Public Mental Health*.

Howell, A.J., Dopko, R.L., Passmore, H.A. & Buro, K., (2011). Nature connectedness: Associations with well-being and mindfulness. *Personality and individual differences*, 51(2), pp.166-171.

Hull IV, R.B., 1990. Mood as a product of leisure: Causes and consequences. *Journal of Leisure Research*, 22(2), pp.99-111.

- Hunter, R.F., Christian, H., Veitch, J., Astell-Burt, T., Hipp, J.A. & Schipperijn, J., (2015). The impact of interventions to promote physical activity in urban green space: a systematic review and recommendations for future research. *Social science & medicine*, 124, pp.246-256.
- Husk, K., Blockley, K., Lovell, R., Bethel, A., Lang, I., Byng, R. and Garside, R., 2020. What approaches to social prescribing work, for whom, and in what circumstances? A realist review. *Health & social care in the community*, 28(2), pp.309-324.
- Husk, K., Lovell, R., Cooper, C., Stahl-Timmins, W. and Garside, R., 2016. : a review of quantitative and qualitative evidence. *Cochrane Database of Systematic Reviews*, (5).
- Iezzi, D.F. and Deriu, F., 2014. Women active citizenship and wellbeing: the Italian case. *Quality & quantity*, 48, pp.845-862.
- Isacs, L., et al., 2023. What does value pluralism mean in practice? An empirical demonstration from a deliberative valuation. *People and Nature*, 5(2), pp.384–402.
- Jenkins, A. and Mostafa, T., 2015. The effects of learning on wellbeing for older adults in England. *Ageing & society*, 35(10), pp.2053-2070.
- Jimenez, M.P., DeVille, N.V., Elliott, E.G., Schiff, J.E., Wilt, G.E., Hart, J.E. and James, P., 2021. Associations between nature exposure and health: a review of the evidence. *International journal of environmental research and public health*, 18(9), p.4790.
- Kabat-Zinn, J., 2005. *Coming to our senses: Healing ourselves and the world through mindfulness*. Hachette UK.
- Kabat-Zinn, J., Lipworth, L. and Burney, R., 1985. The clinical use of mindfulness meditation for the self-regulation of chronic pain. *Journal of behavioral medicine*, 8, pp.163-190.
- Kane, S.S., Gerretsen, B., Scherpbier, R., Dal Poz, M. & Dieleman, M., (2010). A realist synthesis of randomised control trials involving use of community health workers for delivering child health interventions in low and middle income countries. *BMC health services research*, 10(1), pp.1-7.
- Kang, H., 2013. The prevention and handling of the missing data. *Korean journal of anesthesiology*, 64(5), pp.402-406.
- Kaplan, R. & Kaplan, S., (1989). *The experience of nature: A psychological perspective*. Cambridge university press.
- Kaplan, S. (1995) 'The restorative benefits of nature: Toward an integrative framework', *Journal of Environmental Psychology*, 15(3), pp. 169–182. doi: 10.1016/0272-4944(95)90001-2.
- Kaplan, S., (1992). The restorative environment: Nature and human experience. In *The Role of Horticulture in Human Well Being and Social Development*; Relf, D., Ed.; Timber Press: Portland; pp. 134–142.
- Kaplan, S., 1995. The restorative benefits of nature: Toward an integrative framework. *Journal of environmental psychology*, 15(3), pp.169-182.
- Kessen, C., 2009. Living fully: Mindfulness practices for everyday life. *Mindfulness and social work*, pp.31-44.

- Keyes, C. L. M. (1998). Social well-being. *Social Psychology Quarterly*, 61 , 121–140.
- Keyes, C. L. M. (2005). Mental illness and/or mental health? Investigating the axioms of the complete state model of health. *Journal of Consulting and Clinical Psychology*, 73 , 539–548.
- Kim, E.S., Whillans, A.V., Lee, M.T., Chen, Y. and VanderWeele, T.J., 2020. Volunteering and subsequent health and well-being in older adults: An outcome-wide longitudinal approach. *American Journal of Preventive Medicine*, 59(2), pp.176-186.
- Kimberly D Miller, Stuart J Schleien, Cecilia Rider, & Crystal Hall. (2002). Inclusive volunteering: Benefits to participants and community. *Therapeutic Recreation Journal*, 36(3), 247–.
- King, N., (2004). Using templates in the thematic analysis of text. *Essential guide to qualitative methods in organizational research* (pp. 257-270). London, UK: Sage.
- Kirkwood, T., Bond, J., May, C., McKeith, I. and Teh, M.M., 2008. Mental Capital and Wellbeing: Making the most of ourselves in the 21st century. *Mental Capital Through Life: Future Challenges. Government Office for Science, Foresight (Program). Mental Capital and Wellbeing Project. London.*
- Knasel, E., Meed, J. and Rossetti, A., 2000. *Learn for your life: a blueprint for career-long learning*. Financial Times Prentice Hall.
- Kuhn, T.S., 1987. *What are scientific revolutions* (pp. 7-22). Cambridge: MIT.
- Kyle, G.T., Mowen, A.J. and Tarrant, M., 2004. Linking place preferences with place meaning: An examination of the relationship between place motivation and place attachment. *Journal of environmental psychology*, 24(4), pp.439-454.
- Lai, S., Zhou, Y. and Yuan, Y., 2021. Associations between community cohesion and subjective wellbeing of the elderly in Guangzhou, China—A cross-sectional study based on the structural equation model. *International Journal of Environmental Research and Public Health*, 18(3), p.953.
- Lancashire Wildlife Trust. (2024). Lancashire Wildlife Trust. Retrieved 16 September, 2024 from <https://www.lancswt.org.uk/>
- Landscape Institute (2024). Retrieved 21 September 2024 from <https://www.landscapeinstitute.org/policy/green-infrastructure/>
- Lawler, Edward E. (1973). *Motivation in Work Organizations*. Monterey (Calif.): Brooks/Cole.
- Lawrence, A., Molteno, S. and Butterworth, T., 2010. Community wildlife sites in Oxfordshire: an exploration of ecological and social meanings for green spaces. *International Journal of the Commons*, 4(1), pp.122-141.
- Leavell, M.A., Leiferman, J.A., Gascon, M., Braddick, F., Gonzalez, J.C. and Litt, J.S., 2019. Nature-based social prescribing in urban settings to improve social connectedness and mental well-being: a review. *Current environmental health reports*, 6, pp.297-308.
- Legault, L., 2020. Self-determination theory. In *Encyclopedia of personality and individual differences* (pp. 4694-4702). Cham: Springer International Publishing.

- Lepper, M.R., Greene, D. and Nisbett, R.E., 1973. Undermining children's intrinsic interest with extrinsic reward: A test of the "overjustification" hypothesis. *Journal of Personality and Social Psychology*, 28(1), p.129.
- Lewin, K., 1945. The research center for group dynamics at Massachusetts Institute of Technology. *Sociometry*, 8(2), pp.126-136.
- Lewis-Beck M, Bryman A & Liao T., (2004) *Encyclopaedia of Social Science Research Methods*, Thousand Oaks: SAGE.
- Liebmman, M., Pitman, A., Hsueh, Y.C., Bertotti, M. and Pearce, E., 2022. Do people perceive benefits in the use of social prescribing to address loneliness and/or social isolation? A qualitative meta-synthesis of the literature. *BMC health services research*, 22(1), p.1264.
- Loevinger, J., 1976. Origins of conscience. *Psychological Issues*.
- Lovell, R., Husk, K., Cooper, C., Stahl-Timmins, W. & Garside, R., (2015). Understanding how environmental enhancement and conservation activities may benefit health and wellbeing: a systematic review. *BMC public health*, 15(1), pp.1-18.
- Mace, C., 2006. Longterm impacts of mindfulness practice on wellbeing: new findings from qualitative research. *Dimensions of well-being. Research and Intervention*, pp.455-469.
- Manchanda, R., 2014. Materialism and green purchase behaviour: Relationship analysis. *Researches World*, 5(4), p.172.
- Manzano, A., 2022. Conducting focus groups in realist evaluation. *Evaluation*, 28(4), pp.406-425.
- Manzano, A., 2023. Designing and Conducting Focus Groups in Realist Evaluation.
- Marmot, M. (2010). Fair Society, Healthy Lives: The Marmot Review: strategic review of health inequalities in England post-2010. London: UCL.
- Martin, J., Desing, R. and Borrego, M., 2022. Positionality statements are just the tip of the iceberg: Moving towards a reflexive process. *Journal of Women and Minorities in Science and Engineering*, 28(4).
- Martin, J.R., 1997. Mindfulness: A proposed common factor. *Journal of Psychotherapy integration*, 7, pp.291-312.
- Massey, O.T., 2011. A proposed model for the analysis and interpretation of focus groups in evaluation research. *Evaluation and program planning*, 34(1), pp.21-28.
- Matthews, K. and Nazroo, J., 2021. The impact of volunteering and its characteristics on well-being after state pension age: Longitudinal evidence from the English Longitudinal Study of Ageing. *The Journals of Gerontology: Series B*, 76(3), pp.632-641.
- Mattijssen, T.J.M., van der Jagt, A.P., Buijs, A.E., Elands, B.H.M., Erlwein, S. & Laforteza, R., (2017). The long-term prospects of citizens managing urban green space: From place making to place-keeping?. *Urban Forestry & Urban Greening*, 26, pp.78-84.
- Maxwell, J.A. & Mittapalli, K., (2010). Realism as a stance for mixed methods research. *Handbook of mixed methods in social & behavioral research*, pp.145-168.
- Maxwell, S. and Lovell, R., 2017. Evidence statement on the links between natural environments and human health.

- Mayer, F.S. and Frantz, C.M., 2004. The connectedness to nature scale: A measure of individuals' feeling in community with nature. *Journal of environmental psychology*, 24(4), pp.503-515.
- McGivney, V., 1999. Informal Learning in the Community: A Trigger for Change and Development.
- Mell, I., 2016. Public health promotion in England's Community Forest Partnerships. In *Green Infrastructure and Public Health* (pp. 245-268). Routledge.
- Mental Health Resource, (2024). Retrieved 21 September 2024 from <https://www.mentalhealthresource.org.uk/6-ways-of-wellbeing>
- Merton, R.K., 1972. Insiders and outsiders: A chapter in the sociology of knowledge. *American journal of sociology*, 78(1), pp.9-47.
- Michie, S., Van Stralen, M.M. and West, R., 2011. The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implementation science*, 6, pp.1-12.
- MIND Retrieved 21 September 2024 from <https://www.mind.org.uk/information-support/drugs-and-treatments/talking-therapy-and-counselling/ecotherapy/>
- Molsher, R. & Townsend, M. (2016) 'Improving wellbeing and environmental stewardship through volunteering in nature', *EcoHealth*. Springer New York LLC, 13(1), pp. 151–155. doi: 10.1007/s10393-015-1089-1.
- Moore, M., Townsend, M. and Oldroyd, J., 2006. Linking human and ecosystem health: The benefits of community involvement in conservation groups. *EcoHealth*, 3, pp.255-261.
- Morgan, D.L., 1996. Focus groups. *Annual review of sociology*, 22(1), pp.129-152.
- Morrow, V., 2001. *Networks and neighbourhoods: children's and young people's perspectives*. NHS Health Development Agency.
- Mourato, S., Atkinson, G., Collins, M., Gibbons, S., MacKerron, G. & Resende, G., (2010). Economic analysis of cultural services. *Background report to UK NEA Economic Analysis Report, Department of Geography and Environment, London School of Economics and Political Science London*.
- Muhl, C., Mulligan, K., Bayoumi, I., Ashcroft, R. and Godfrey, C., 2023. Establishing internationally accepted conceptual and operational definitions of social prescribing through expert consensus: a Delphi study. *BMJ open*, 13(7), p.e070184.
- Muhl, C., Mulligan, K., Giurca, B.C., Polley, M.J., Bloch, G., Nowak, D.A., Osborn-Forde, C., Hsiung, S., Lee, K.H., Herrmann, W.J. and Baker, J.R., 2024. Building common understanding: seeking consensus and defining social prescribing across contexts—a collective commentary on a Delphi study. *BMC health services research*, 24(1), pp.1-6.
- Murphy, R., Wedlock, E. & King, J., (2005). *Early findings from the 2005 Home Office citizenship survey*. London: Home Office.
- NASP, (2024). Retrieved 21 September 2024 from <https://socialprescribingacademy.org.uk/what-is-social-prescribing/natural-environment-and-social-prescribing/green-toolkit/>
- National Institute for Health and Care Excellence (NICE), (2018). Physical activity and the environment (NICE guideline NG 90).

Natural Capital Committee (2020). The Green Book guidance: embedding natural capital into public policy appraisal. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/937652/ncc-green-book-advice.pdf. (Accessed: 27th April, 2024).

NATURAL ENGLAND (2013) Monitor of Engagement with the Natural Environment: The national survey on people and the natural environment: Annual report from the 2012 – 2013 survey (NECR122). Natural England.

Natural England WEB (2024)

<https://designatedsites.naturalengland.org.uk/GreenInfrastructure/WhatIsGreenInfrastructure.aspx>

Natural England, (2020). A summary report on nature connectedness among adults and children in England. *Monitor of Engagement with the Natural Environment*.

NFH, 2024. Retrieved 21 Sept 2024 from <https://gmnatureforhealth.org.uk/>

NHS England, 2025. Retrieved 01 April 2025, from <https://www.england.nhs.uk/wp-content/uploads/2016/07/bitesize-guide-focus-groups.pdf>

Nielsen, S.B., Lemire, S. and Tangsig, S., 2022. Unpacking context in realist evaluations: Findings from a comprehensive review. *Evaluation*, 28(1), pp.91-112.

Norman, G., 2010. Likert scales, levels of measurement and the “laws” of statistics. *Advances in health sciences education*, 15, pp.625-632.

Northern Forest. (2024). Retrieved 24 September, 2024, from <https://thenorthernforest.org.uk/>

Nowell, L.S., Norris, J.M., White, D.E. & Moules, N.J., (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International journal of qualitative methods*, 16(1), p.1609406917733847.

O’Brien, L. (2018). Engaging with and Shaping Nature: A Nature-Based Intervention for Those with Mental Health and Behavioural Problems at the Westonbirt Arboretum in England. *International Journal of Environmental Research and Public Health*, 15(10), 2214–. <https://doi.org/10.3390/ijerph15102214>

O’Brien, L., Townsend, M. & Ebdon, M. (2010) “‘Doing Something Positive’: Volunteers’ Experiences of the Well-Being Benefits Derived from Practical Conservation Activities in Nature’, *Voluntas*. doi: 10.1007/s11266-010-9149-1.

O’Brien, L., Burls, A., Townsend, M. and Ebdon, M., 2011. Volunteering in nature as a way of enabling people to reintegrate into society. *Perspectives in public health*, 131(2), pp.71-81.

Omid, A., Mohammadkhani, P., Mohammadi, A. and Zargar, F., 2013. Comparing mindfulness based cognitive therapy and traditional cognitive behavior therapy with treatments as usual on reduction of major depressive disorder symptoms. *Iranian Red Crescent Medical Journal*, 15(2), p.142.

Pawson R & Tilley N (1997) *Realistic Evaluation*, London: Sage.

Pawson R (1996) Theorizing the interview. *British Journal of Sociology*, pp.295–314.

Pawson R (2006) *Evidence based policy: A realist perspective*, London: Sage.

Pawson R (2008) *Causality for beginners*. In: NCRM Research Methods Festival 2008. <http://eprints.ncrm.ac.uk/245/>

- Pawson, R. and Tilley, N., 2004. Realist evaluation: The magenta book guidance notes. *London: Cabinet Office. Retrieved May, 12, p.2008.*
- Pawson, R., Greenhalgh, T., Harvey, G. & Walshe, K., (2004). Realist synthesis: an introduction. *ESRC Res Methods Program*. Pg 34
- Pawson, R., Greenhalgh, T., Harvey, G. & Walshe, K., (2005). Realist review-a new method of systematic review designed for complex policy interventions. *Journal of health services research & policy*, 10(1_suppl), pp.21-34.
- Peterson, L.G. and Pbert, L., 1992. Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders. *Am J Psychiatry*, 149(7), pp.936-943.
- Piliavin, J.A. and Siegl, E., 2007. Health benefits of volunteering in the Wisconsin longitudinal study. *Journal of health and social behavior*, 48(4), pp.450-464.
- Pillemer, K., Fuller-Rowell, T.E., Reid, M.C. & Wells, N.M., (2010). Environmental volunteering and health outcomes over a 20-year period. *The Gerontologist*, 50(5), pp.594-602.
- Pinto, L.V., Inácio, M., Ferreira, C.S.S., Ferreira, A.D. and Pereira, P., 2022. Ecosystem services and well-being dimensions related to urban green spaces–A systematic review. *Sustainable Cities and Society*, 85, p.104072.
- Polley, M., Fleming, J., Anfilogoff, T., Carpenter, A., Kimberlee, R., Bertotti, M., Dixon, M., Drinkwater, C., McGregor, A., Poole, J. & Pilkington, K., (2017). Making sense of social prescribing.
- Polley, M., Whiteside, J., Elnaschie, S., & Fixsen, A. (2020). *What does successful social prescribing look like? Mapping meaningful outcomes*.
<https://www.researchgate.net/publication/340115811>
- Popper, K., 1959. Prediction and prophecy in the social sciences. *Theories of history*, pp.276-285.
- Pretty, J., Peacock, J., Sellens, M. and Griffin, M., 2005. The mental and physical health outcomes of green exercise. *International journal of environmental health research*, 15(5), pp.319-337.
- Pretty, J., Rogerson, M. and Barton, J., 2017. Green mind theory: how brain-body-behaviour links into natural and social environments for healthy habits. *International journal of environmental research and public health*, 14(7), p.706.
- Price, D.D., Finniss, D.G. and Benedetti, F., 2008. A comprehensive review of the placebo effect: recent advances and current thought. *Annu. Rev. Psychol.*, 59, pp.565-590.
- Public Health England Strategy (2024). Retrieved 21 September 2024 from <https://www.gov.uk/government/publications/phe-strategy-2020-to-2025>
- Puttick, R. & Ludlow, J., (2012). Standards of evidence for impact investing. London: Nesta.
- Ramesesproject. (2024). The RAMESES II Project – resources and training materials for realist evaluation. Retrieved 01 June, 2024, from https://www.ramesesproject.org/Standards_and_Training_materials.php

- Reis, P., 2020. Environmental citizenship and youth activism. *Conceptualizing environmental citizenship for 21st century education*, pp.139-148.
- Renmans, D. and Pleguezuelo, V.C., 2023. Methods in realist evaluation: A mapping review. *Evaluation and program planning*, 97, p.102209.
- Reyes-Riveros, R., Altamirano, A., De La Barrera, F., Rozas-Vásquez, D., Vieli, L. and Meli, P., 2021. Linking public urban green spaces and human well-being: A systematic review. *Urban forestry & urban greening*, 61, p.127105.
- RHS In Bloom (2024). Retrieved 21 September 2024 from <https://www.rhs.org.uk/get-involved/britain-in-bloom>
- RHS. (2024). RHS Bridgewater. Retrieved 21 September 2024 from <https://www.rhs.org.uk/gardens/bridgewater>
- Rilling, J.K., Glenn, A.L., Jairam, M.R., Pagnoni, G., Goldsmith, D.R., Elfenbein, H.A. and Lilienfeld, S.O., 2007. Neural correlates of social cooperation and non-cooperation as a function of psychopathy. *Biological psychiatry*, 61(11), pp.1260-1271.
- Roe, J.J., Thompson, C.W., Aspinall, P.A., Brewer, M.J., Duff, E.I., Miller, D., Mitchell, R. and Clow, A., 2013. Green space and stress: Evidence from cortisol measures in deprived urban communities. *International journal of environmental research and public health*, 10(9), pp.4086-4103.
- Rogerson, M., Gladwell, V.F., Gallagher, D.J. and Barton, J.L., 2016. Influences of green outdoors versus indoors environmental settings on psychological and social outcomes of controlled exercise. *International journal of environmental research and public health*, 13(4), p.363.
- Rosenberg, M. and McCullough, B.C., 1981. Mattering: Inferred significance and mental health among adolescents. *Research in community & mental health*.
- Ryan, R.M. and Deci, E.L., 2000. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), p.68.
- Saary, M.J., (2008). Radar plots: a useful way for presenting multivariate health care data. *Journal of clinical epidemiology*, 61(4), pp.311-317.
- Sander-Regier, R. and Etowa, J., 2014. "I really like being with this group of people": Social wellbeing and nature volunteering at Ottawa's fletcher wildlife garden. *International Journal of Arts & Sciences*, 7(6), p.291.
- Savin-Baden, M. and Major, C., 2023. *Qualitative research: The essential guide to theory and practice*. Routledge.
- Sayer A (2000) *Realism and Social Science*, London: Sage
- Schuller, T., Preston, J., Hammond, C., Brassett-Grundy, A. and Bynner, J., 2004. *The benefits of learning: The impact of education on health, family life and social capital*. Routledge.
- Scott, A. and Hislop, M., 2024. What does good green and blue infrastructure policy look like: A comparative assessment of UK national planning guidance. *Urban Forestry & Urban Greening*, 99, p.128440.

- Scott, A., Carter, C., Hardman, M., Grayson, N. and Slaney, T., 2018. Mainstreaming ecosystem science in spatial planning practice: Exploiting a hybrid opportunity space. *Land Use Policy*, 70, pp.232-246.
- Scott, A., Holtby, R., East, H. and Lannin, A., 2022. Mainstreaming the Environment: Exploring pathways and narratives to improve policy and decision-making. *People and Nature*, 4(1), pp.201-217.
- Secules, S., McCall, C., Mejia, J.A., Beebe, C., Masters, A.S., L. Sánchez-Peña, M. and Svyantek, M., 2021. Positionality practices and dimensions of impact on equity research: A collaborative inquiry and call to the community. *Journal of Engineering Education*, 110(1), pp.19-43.
- Seligman, M.E. and Flourish, P., 2011. A visionary new understanding of happiness and well-being. *New York*.
- Shalaby, R.A.H. and Agyapong, V.I., 2020. Peer support in mental health: literature review. *JMIR mental health*, 7(6), p.e15572.
- Shanahan, D.F., Astell-Burt, T., Barber, E.A., Brymer, E., Cox, D.T., Dean, J., Depledge, M., Fuller, R.A., Hartig, T., Irvine, K.N. & Jones, A., (2019). Nature-Based Interventions for Improving Health and Wellbeing: The Purpose, the People and the Outcomes. *Sports*, 7(6), p.141.
- SHUHU. (2021). Social Prescribing Across Manchester. Retrieved 21 September 2021 from <https://www.salford.ac.uk/research/care/research-groups/shusu/projects/social-prescribing-across-greater-manchester>
- Silverman D (ed.) (2004) *Qualitative Research Theory Method and Practice*. Thousand Oaks, CA: SAGE.
- Sim, J. and Waterfield, J., 2019. Focus group methodology: some ethical challenges. *Quality & quantity*, 53(6), pp.3003-3022.
- Skinner, B.F., 1971. Operant conditioning. *The encyclopedia of education*, 7, pp.29-33.
- Slater, S.J., Christiana, R.W. and Gustat, J., 2020. Peer Reviewed: Recommendations for keeping parks and green space accessible for mental and physical health during COVID-19 and other pandemics. *Preventing chronic disease*, 17.
- Smederevac-Lalic, M., Finger, D., Kovách, I., Lenhardt, M., Petrovic, J., Djikanovic, V., Conti, D. and Boeve-de Pauw, J., 2020. Knowledge and environmental citizenship. *Conceptualizing environmental citizenship for 21st century education*, pp.69-82.
- Smith, J.A., Flowers, P., & Larkin, M. (2009). *Interpretative Phenomenological Analysis*. London: Sage.
- Smyth, N., Thorn, L., Wood, C., Hall, D. and Lister, C., 2022, May. Increased wellbeing following engagement in a group nature-based programme: the green gym programme delivered by the conservation volunteers. In *Healthcare* (Vol. 10, No. 6, p. 978). MDPI.
- Social Prescribing Academy, 2024. Retrieved 21 September 2024, <https://socialprescribingacademy.org.uk/resources/green-social-prescribing-improves-your-mental-health/>
- South, J., Higgins, T.J., Woodall, J. & White, S.M., (2008). Can social prescribing provide the missing link?. *Primary Health Care Research & Development*, 9(4), pp.310-318.

Spaulding, D.T., 2013. *Program evaluation in practice: Core concepts and examples for discussion and analysis*. John Wiley & Sons.

Specia, M., Carlson, L.E., Goodey, E. and Angen, M., 2000. A randomized, wait-list controlled clinical trial: the effect of a mindfulness meditation-based stress reduction program on mood and symptoms of stress in cancer outpatients. *Psychosomatic medicine*, 62(5), pp.613-622.

Sun, Q., Loveday, M., Nwe, S., Morris, N. and Boxall, E., 2023. Green Social Prescribing in practice: a case study of Walsall, UK. *International Journal of Environmental Research and Public Health*, 20(17), p.6708.

TCV (2024). Retrieved 21 September 2024 from <https://www.tcv.org.uk/northwest/>

Thompson Coon, J., Boddy, K., Stein, K., Whear, R., Barton, J. and Depledge, M.H., 2011. Does participating in physical activity in outdoor natural environments have a greater effect on physical and mental wellbeing than physical activity indoors? A systematic review. *Environmental science & technology*, 45(5), pp.1761-1772.

Thompson, C.W., Roe, J., Aspinall, P., Mitchell, R., Clow, A. and Miller, D., 2012. More green space is linked to less stress in deprived communities: Evidence from salivary cortisol patterns. *Landscape and urban planning*, 105(3), pp.221-229.

Thompson, J., Howarth, M., Hardman, M. and Cook, P., 2023. Critically exploring public realm greenspace as a therapeutic landscape and the role of Green Social Prescribing. In *Cultivated Therapeutic Landscapes* (pp. 133-152). Routledge.

Thomsen, J.M., Powell, R.B. & Allen, D., (2013). Designing Parks for Human Health and Development Park health resources: Benefits, values, and implications. *Park Science*, 30(2), p.30.

Tierney, S., Wong, G., Roberts, N., Boylan, A.M., Park, S., Abrams, R., Reeve, J., Williams, V. and Mahtani, K.R., 2020. Supporting social prescribing in primary care by linking people to local assets: a realist review. *BMC medicine*, 18, pp.1-15.

TMF. (2024). The Mersey Forest. Retrieved 16 September, 2024 from <https://www.merseyforest.org.uk/>

Town & Country Planning Association, Retrieved 21 September 2024 from <https://www.tcpa.org.uk/what-is-green-infrastructure/>

Townsend, M. (2006) 'Feel blue? Touch green! Participation in forest/woodland management as a treatment for depression', *Urban Forestry and Urban Greening*. doi: 10.1016/j.ufug.2006.02.001.

Tree Equity 2024 <https://uk.treeequityscore.org/>

Turk, A., Tierney, S., Wong, G., Todd, J., Chatterjee, H.J. and Mahtani, K.R., 2022. Self-growth, wellbeing and volunteering-Implications for social prescribing: A qualitative study. *SSM-Qualitative Research in Health*, 2, p.100061.

Tzoulas, K. & Greening, K., (2011). Urban ecology and human health. *Urban Ecology. Patterns, processes and applications*. Oxford University Press, Oxford, UK. <http://dx.doi.org/10.1093/acprof:oso/9780199563562.003>, 32, pp.263-271.

Tzoulas, K., Korpela, K., Venn, S., Yli-Pelkonen, V., Kaźmierczak, A., Niemela, J. and James, P., (2007). Promoting ecosystem and human health in urban areas using Green Infrastructure: A literature review. *Landscape and urban planning*, 81(3), pp.167-178.

- Ulrich R.S. (1983) Aesthetic and Affective Response to Natural Environment. In: Altman I., Wohlwill J.F. (eds) Behavior and the Natural Environment. Human Behavior and Environment (Advances in Theory and Research), vol 6. Springer, Boston, MA
- United Nations (2024). Retrieved 21 September 2024 from <https://sdgs.un.org/goals>
- Unwin, D., 2024. Reducing overweight and obesity; so how are we doing?. *BMJ Nutrition, Prevention & Health*, p.e000836.
- Van de Ven, A.H., 1989. Nothing is quite so practical as a good theory. *Academy of management Review*, 14(4), pp.486-489.
- Van den Berg, A.E., (2017). From green space to green prescriptions: challenges and opportunities for research and practice. *Frontiers in psychology*, 8, p.268.
- Van Lange, P.A., Kruglanski, A.W. and Higgins, E.T., 2012. Theories of social psychology: An introduction. *Theories of Social Psychology*, pp.1-8.
- Wallace, B.A., 2006. *The attention revolution: Unlocking the power of the focused mind*. Simon and Schuster.
- Walshe, K., Coleman, A., McDonald, R., Lorne, C. & Munford, L., (2016). Health and social care devolution: the Greater Manchester experiment. *Bmj*, 352, p.i1495.
- Wang, J. and Banzhaf, E., 2018. Towards a better understanding of Green Infrastructure: A critical review. *Ecological Indicators*, 85, pp.758-772.
- Warr, P., 1994. A conceptual framework for the study of work and mental health. *Work & Stress*, 8(2), pp.84-97.
- Waterman, A.S., 1993. Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of personality and social psychology*, 64(4), p.678.
- West, L., 1995. Beyond fragments: Adults, motivation and higher education. *Studies in the Education of Adults*, 27(2), pp.133-156.
- Westhorp G (2014) Realist Impact Evaluation: an introduction ODI Research and Policy in Development, Australian Government Department of Foreign Affairs and Trade. www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9138.pdf
- Westhorp, G., Prins, E., Kusters, C., Hultink, M., Guijt, I. & Brouwers, J., (2011). Realist evaluation: An overview report from an expert seminar with Dr. Gill
- White, M.P., Elliott, L.R., Grellier, J., Economou, T., Bell, S., Bratman, G.N., Cirach, M., Gascon, M., Lima, M.L., Löhmus, M. and Nieuwenhuijsen, M., 2021. Associations between green/blue spaces and mental health across 18 countries. *Scientific reports*, 11(1), p.8903.
- White, M.P., Hartig, T., Martin, L., Pahl, S., van den Berg, A.E., Wells, N.M., Costongs, C., Dzhambov, A.M., Elliott, L.R., Godfrey, A. and Hartl, A., 2023. Nature-based biopsychosocial resilience: An integrative theoretical framework for research on nature and health. *Environment International*, 181, p.108234.
- Wilson N. Branching Out. Greenspace and conservation on referral. Edinburgh: Forestry Commission Scotland, Glasgow Centre for Population Health, Glasgow Clyde Valley Green Network Partnership; (2009).
- Wilson, E.O., (1984). *Biophilia*. Harvard University Press.

- Wilson, J. (2012) Volunteerism Research: A Review Essay, *Nonprofit and Voluntary Sector Quarterly*. doi: 10.1177/0899764011434558.
- Wilson, J., (2000). Volunteering. *Annual review of sociology*, 26(1), pp.215-240.
- Wilson, N., (2009). Branching out: green space and conservation on referral. Edinburgh: Forestry Commission Scotland, NHSGGC, Glasgow Centre for Population Health, Glasgow Clyde Valley Green Network Partnership, 2009.
- Wolf, K.L., Krueger, S. & Rozance, M.A., (2014). Stress, wellness & physiology-A literature review. *Green Cities: Good Health*.
- Wong G, Greenhalgh, T, Westhorp G, Pawson R (2012) Realist methods in medical education research: what are they and what can they contribute? *Medical Education*, 46(1):pp.89–96.
- Wong, G., 2018. Data gathering in realist reviews: looking for needles in haystacks. *Doing realist research*. London: SAGE, pp.131-45.
- Wood, C.J., Polley, M., Barton, J.L. and Wicks, C.L., 2022. Therapeutic community gardening as a green social prescription for mental ill-health: impact, barriers, and facilitators from the perspective of multiple stakeholders. *International journal of environmental research and public health*, 19(20), p.13612.
- Wood, C.J., Pretty, J. and Griffin, M., 2016. A case–control study of the health and well-being benefits of allotment gardening. *Journal of Public Health*, 38(3), pp.e336-e344.
- World Health Organisation (WHO), 2002. *Active Ageing: A Policy Framework*. WHO, Geneva.
- World Health Organisation. (2019). Definition of human health. Retrieved 02 October, 2019, from <https://www.who.int/about/who-we-are/constitution>
- World Health Organization, 2016. *Urban green spaces and health* (No. WHO/EURO: 2016-3352-43111-60341). World Health Organization. Regional Office for Europe.
- Yeo, N.L., Elliott, L.R., Bethel, A., White, M.P., Dean, S.G. & Garside, R., (2019). Indoor nature interventions for health and wellbeing of older adults in residential settings: A systematic review. *The Gerontologist*.
- Zhang, J. W., Howell, R. T. & Iyer, R. (2014) ‘Engagement with natural beauty moderates the positive relation between connectedness with nature and psychological well-being’, *Journal of Environmental Psychology*, 38, pp. 55–63. doi: 10.1016/j.jenvp.2013.12.013.
- Zuckerman, M., Porac, J., Lathin, D. and Deci, E.L., 1978. On the importance of self-determination for intrinsically-motivated behavior. *Personality and social psychology bulletin*, 4(3), pp.443-446.

Appendix A – Appraisal of original literature review

Appraisal of the original literature review

The Ramesesproject (2021) quality standards guidance recommend that search strategies are piloted to ensure the approach is acceptable and appropriate. The guidance also highlights the challenges of having so much data from a literature review that it becomes unmanageable; a point that was certainly recognised during the conduct of this study. Since the original literature review that informed the first 3 years of this 6 year-long study, the strategy for undertaking the review has been amended.

Upon reflection of the original (now viewed as a pilot) strategy for the literature review, several observations were made:

- The two staged approach was satisfactory and in line with realist practice (Pawson et al., 2005). The first stage was to gain a broader perspective on the overall programme theory, i.e. the broad hypothesis that participation in civic environmental activities to improve places and spaces would result in increased wellbeing (or not). This was a challenge to manage because of the large amounts of data on wellbeing and nature. The second stage refined and test the programme theory further.
- The second stage, unpicking the Five Ways to Wellbeing (NEF,2008) was not sufficiently focused in its execution, and stepped beyond the programme theory to draw upon literature beyond the phenomenon in question too quickly.
- Overall, the initial review lacked a realist approach to analysis, which is particularly important in the second stage, during the refinement process. At this point the analysis should be seeking to understand the causal mechanisms at play.
- Although Mendeley was used as a reference manager, it was a challenge to manage the breadth, depth and complexities of undertaking a literature review of a programme theory, which is non-linear, as opposed to a linear line of enquiry.

Therefore, for the version presented in this thesis, the following changes and improvements have been made to the literature review strategy and management of data:

- Overall, the review has been taken using a realist approach, seeking to understand and explain the contexts and causal mechanisms to achieving the outcome (increased wellbeing).
- The second stage search for literature has employed a stricter set of inclusion criteria
- Revised use of Mendeley reference management tool

Appendix B – Long list

The long-list of actions derived from the New Economics Foundation in their development of the Five Ways to Wellbeing (Aked et al., 2008):

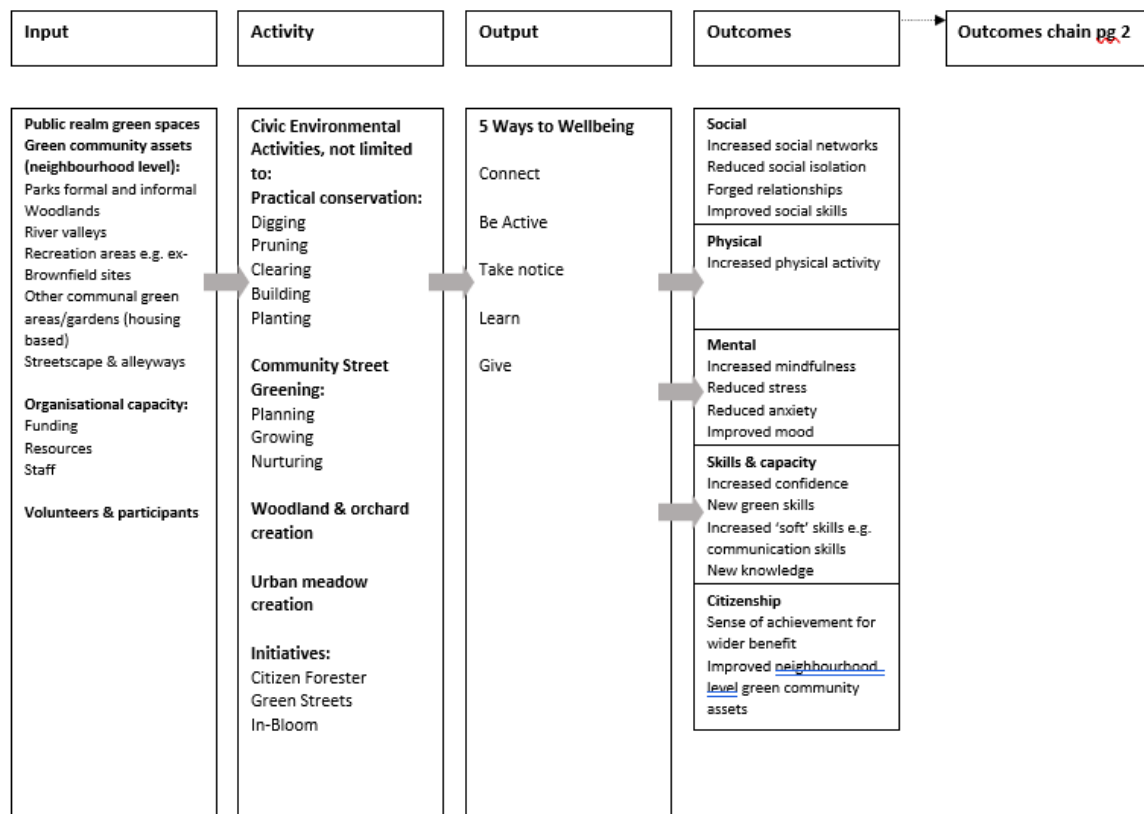
Table 1: Long list of actions showing how themes have been messaged and how they affect both mental ill-health and well-being.

Intervention theme	Impact		Evidence base		Messaged directly	Messaged indirectly
	Target group	Level	Buffer for mental ill-health	Enhancer of well-being		
Social relationships	Universal	Individual	●	●	Connect	
Physical activity	Universal	Individual	●	●	Be active	
Awareness	Universal	Individual		●	Take notice	
Learning	Universal	Individual	●	●	Keep learning	
Giving	Universal	Individual		●	Give	
Work	Working population	Organisational/ Societal	●	●		Connect Keep learning
Nature	Universal	Individual	●	●		Be active Take notice
Nutrition	Universal	Individual	●			

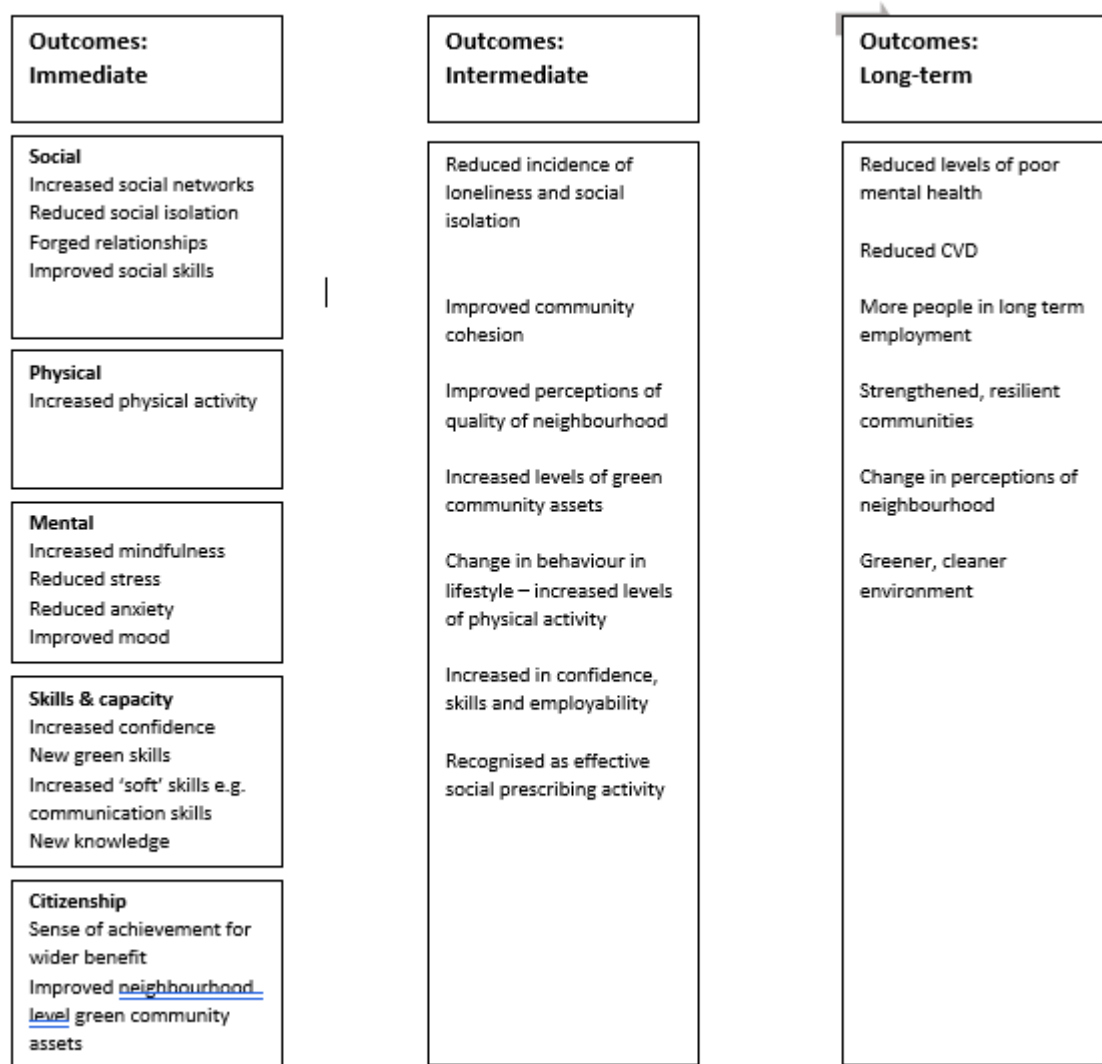
Appendix C - Logic modelling process

Logic modelling process to devise the programme theory

Basic Logic Model, United Way (1996) [Logic model showing outcomes in relation to participation in civic environmental activities](#)

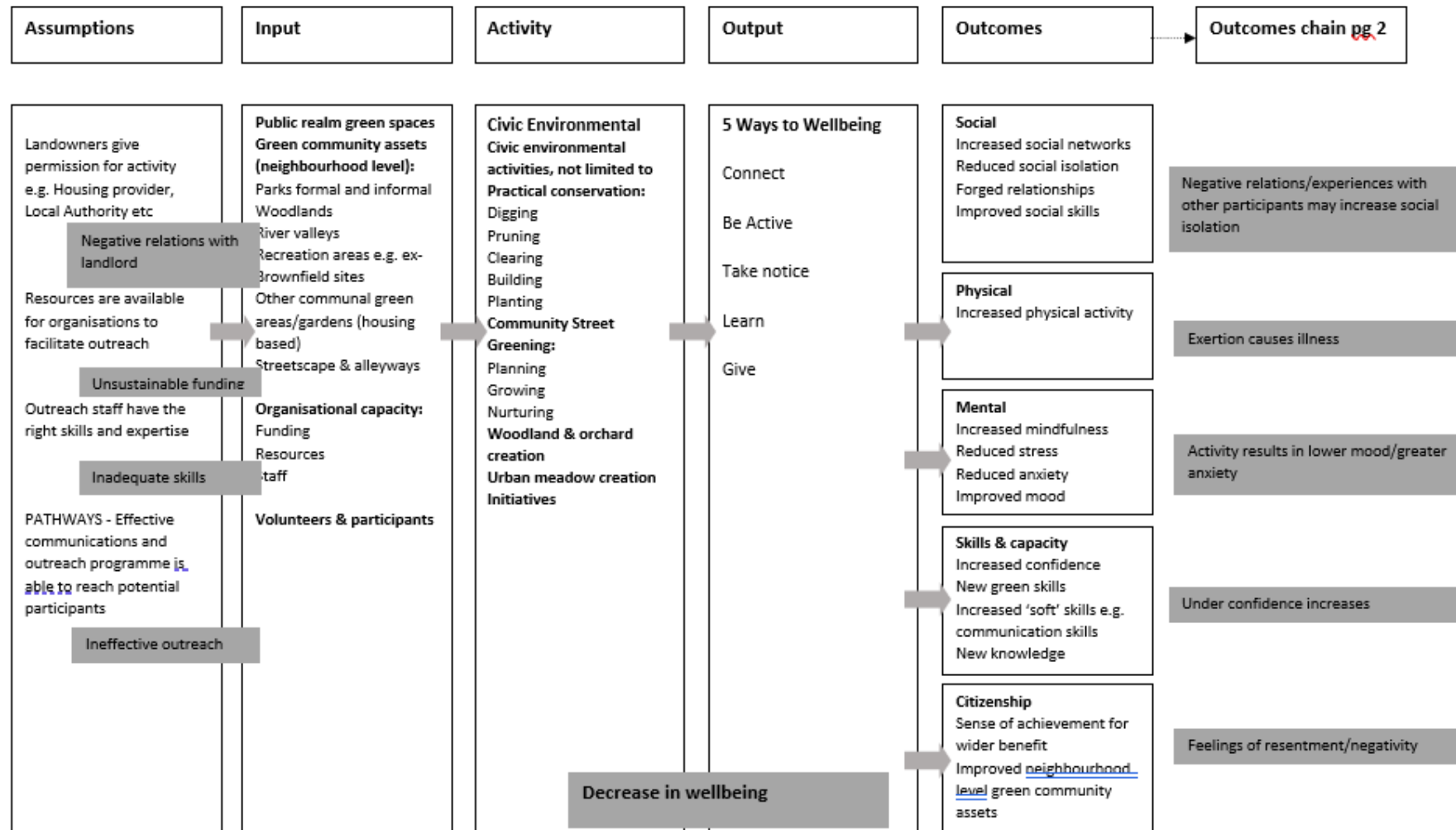


Outcomes chain – immediate, intermediate, long term



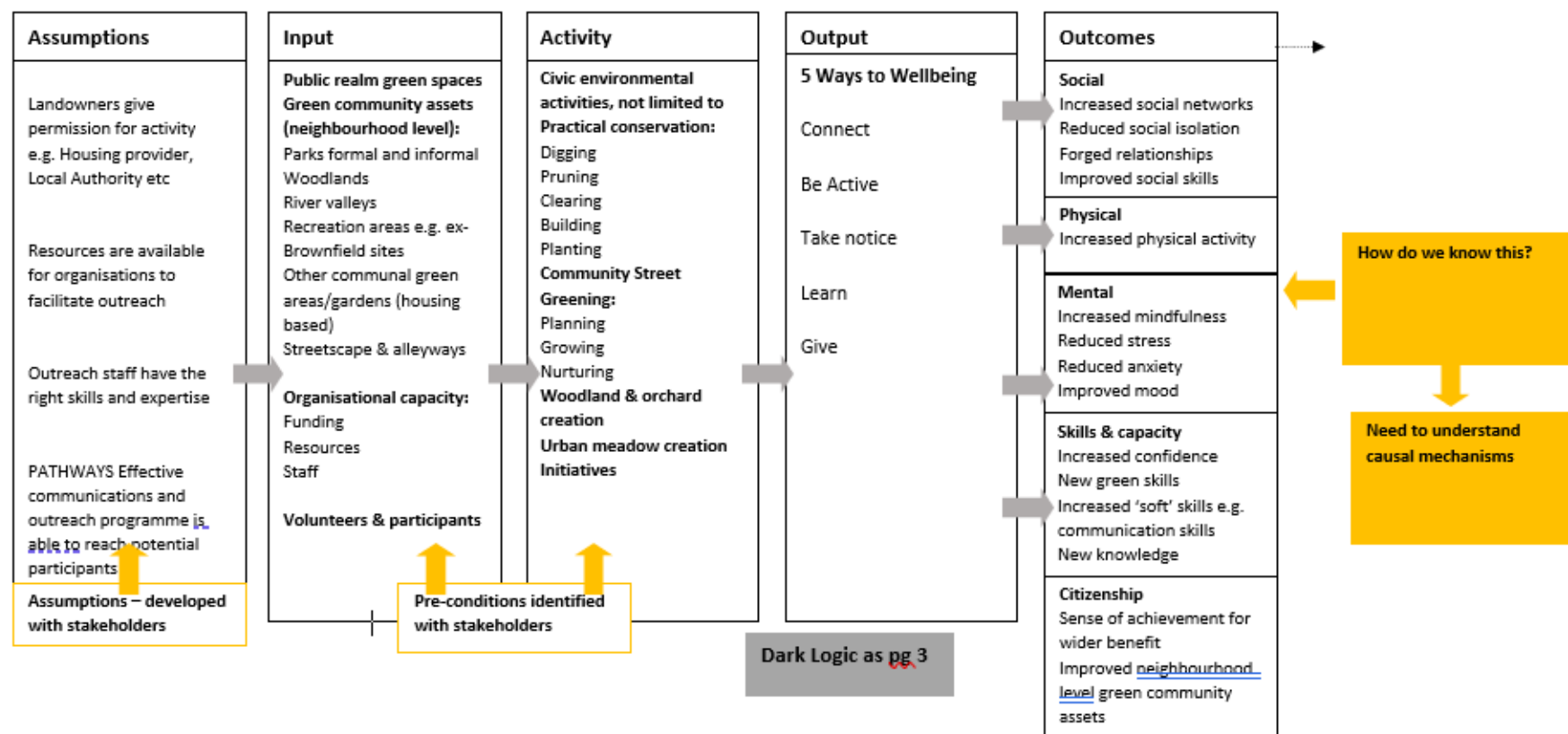
Basic Logic Model 2, United Way (1996)

Logic model (2). Dark Logic - showing the possible unintended outcomes in relation to participation in civic environmental activities

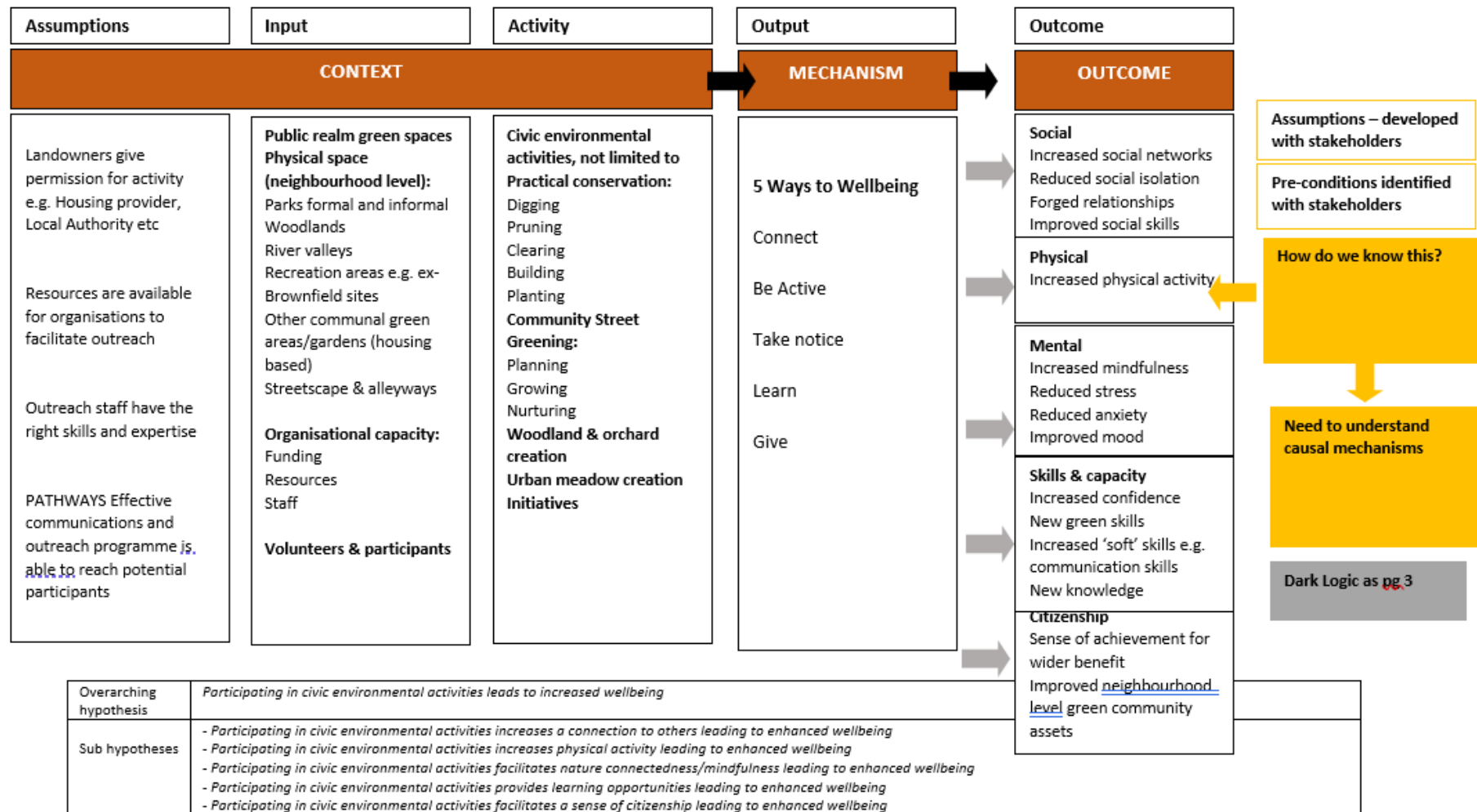


Programme Theory model showing the theory of change reflected as hypotheses

Overarching hypothesis:	<i>Participating in civic environmental activities leads to increased wellbeing</i>
Sub hypothesis:	- <i>Participating in civic environmental activities increases a connection to others leading to enhanced wellbeing</i> - <i>Participating in civic environmental activities increases physical activity leading to enhanced wellbeing</i> - <i>Participating in civic environmental activities facilitates nature connectedness/mindfulness leading to enhanced wellbeing</i> - <i>Participating in civic environmental activities provides learning opportunities leading to enhanced wellbeing</i> - <i>Participating in civic environmental activities facilitates a sense of citizenship leading to enhanced wellbeing</i>



Realist Evaluation – applying the C-M-O configuration to the Programme Theory



A summary of the C-M-O configuration used in the Realist Evaluation Design

CONTEXT	CONTEXT - population	MECHANISM	DESIRED OUTCOME	UNINTENDED OUTCOMES
<i>In what context?</i> Natural environments in an urban setting Pathways into participation based on motivation and opportunity Organisational capacity, skills, expertise, funding, resources, staff	<i>For whom does this work best for and why?</i> Cohorts: Local residents General (attributes yet unknown) People seeking vocational/therapeutic rehabilitation Corporate groups Stakeholder perspectives	<i>How and why?</i> Is the mechanism participation/interaction with nature? On a deeper level, is it about: Connecting to others? Being physically active? Closer connection to nature? Learning something? Giving back? (5 Ways to Wellbeing, (NEF, 2008)) 	Increased wellbeing What does this mean, and why does it matter? Does this feedback into context?	<i>What might go wrong at why?</i> Opposite – decrease in wellbeing

Appendix D – Semi-structured interview schedule

Semi-structured interview schedule

Exploring the impact of urban greening outreach projects in the community: an exploration of the influence of urban greening initiatives, on wellbeing within an urban context.

Qualitative Interview Schedule

Introduction

- This interview should take 30 minutes to an hour.
- Explain who we are and what we are doing.
- Outline and emphasise informed consent and anonymity, and that everything said will be kept confidential.
- Explain digital audio recording and check if it is OK to record for transcription purposes
- Outline the purpose of the interview – explain that the main objective is to explore their experience of environmental outreach activities with reference to the Five Ways to Wellbeing
- Briefly outline standard etiquette - e.g. Speak clearly and avoid personal criticisms or abusive language.
- Remember **THERE ARE NO RIGHT AND WRONG ANSWERS** - we are here to capture people's views, whether positive, negative or neutral.

Semi-structured questions/points for discussion

1. The process and how you got started (context)
 - Can I start by asking you about how you first came to work with [either City of Trees or RHS Bridgewater or another organisation]?
 - What were your motivations? What were you expecting?
 - What types of activities did you do? What was involved?
 - Are you still involved in those activities? Other activities? Why/why not?
2. What difference has it made (mechanism-outcome)
 - What was that like? What is the difference it has made to you?

- Do you feel more connected – to others, neighbours, groups?
- Do you think it has had an impact on wider community? How? How does that feel?
- Did you think the activity increased your normal physical activity? How?
- Did you feel as though you learned something? What? How?
- Did you feel a closer connection to nature? Tell me about that?
- What has been the best thing about taking part? Was there anything challenging?
- Finally is there anything we haven't covered that you would like to raise before we close the interview?

Thank you for your time. End interview. Stop recording and ensure all consent forms have been obtained.

Appendix E – Participant Information Sheet

PARTICIPANT INFORMATION SHEET An invitation to take part in a research project

Last updated 09/02/2024

What is the research project about? The research project is a PhD study, that aims to explore and evaluate the wellbeing impacts that come about from taking part in urban greening initiatives, i.e. projects and schemes that support people's involvement in improving local greenspaces and public realm green provision at a neighbourhood level.

The research project is exploring the wellbeing impacts based on the 'Five Ways to Wellbeing' which is a set of outcomes defined by the New Economics Foundation (2008).

The research project will be focusing on urban greening initiatives that are led by organisations. We are inviting people who are engaged in the urban greening initiatives run by these organisations to take part in the study.

Before you decide on whether to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully before you decide whether or not you wish to take part. You are welcome to discuss this project with others if you wish before you make your decision. Please ask (SEE CONTACT DETAILS) if there is anything not clear or you would like more information.

The purpose of the research: This research will provide a better understanding of the wellbeing impacts of taking part in urban greening initiatives. This will add to the evidence base of what is known about the links between the green environment and people's health & wellbeing. It will also inform best practice on running greening initiatives for health & wellbeing outcomes.

Why have you been chosen to be invited to take part in the study? You have been invited to take part in the study as you are engaged in initiatives that aim to improve the green environment at a neighbourhood level (i.e. out in the community). I am hoping that at least 150 people will take part in the study overall. People will be asked to

complete a 'before' and 'after' questionnaire. I am also looking for a small number of people to take part in interviews or focus groups.

You do not have to take part in the study... Taking part in this research is entirely voluntary. There will be no penalty or loss of benefit if you decide not to take part. You can discontinue participation at any time throughout the research project.

If you do decide to take part, you will be given this Participant Information Sheet to keep and be asked to sign a consent form. You can withdraw from the study at any time and you do not have to give a reason for this.

If you do decide to withdraw from the study... please note that the University will continue to process the information that you have already provided. It will only do this for research purposes and in an anonymised way so that you cannot be identified.

What happens when you take part?

If you choose to take part in the study today, you will be asked to:

Complete a questionnaire before and after you take part in activities relating to your experience today.

You may also be invited to take part in a relaxed informal interview or focus group. Due to the measures in place and guidance on social distancing in relation to the Corona Virus, the interviews and focus groups will take place either over the telephone or using on-line video conferencing (such as Skype or Zoom) depending on what you have access to.

What are the risks of taking part? The risks of participating are low. Participants will be asked to complete a questionnaire, and may also be asked to take part in an interview or focus group which will be recorded digitally. The recordings will be destroyed 3 years after the completion of the study. The study does not aim to explore sensitive issues through the questionnaire or interviews, but should any distress occur, staff from your pathway organisation will be available to advise you on where to go for support. You could also seek support from the support charity, MIND www.mind.org.uk

The benefits of participating... You will be helping to contribute to the wider knowledge base of the relationship between the green environment in urban settings on

health and wellbeing. More specifically, you will help the University understand the impacts of wellbeing (and the Five Ways to Wellbeing) in the context of getting involved in improving greenspace in towns and cities. Evidence and knowledge can inform policies and procedures, so your time spent participating in the study is of great value.

Will taking part in the study be kept confidential? All information, which is collected about you during the course of the research (data), will be kept confidential, and any information about you which leaves the University will have your name and address removed so that you cannot be recognised. All information will be kept confidential, unless participants disclose that a person may be at risk of harm or future illegal activity, in which case the interviewer may share their concerns with an appropriate professional. Although the full anonymity of some of those participating cannot be guaranteed (as organisational staff will have helped us identify participants) every effort will be made to minimise this. Your anonymity may be affected during the recording of an on-line interview. For example, because the on-line interviews will take place from home, there may be a small chance that someone not taking part in the interview will see your image on screen during the interview. Steps will be made to minimise the risk of this happening – such as the on-line interview taking place in a closed room.

The data you give the researcher will be collected either by questionnaire, interviews or focus groups recorded digitally. Questionnaires will be administered by organisational staff, these organisations will store this information securely and in accordance with GDPR, until it is collected by the researcher. The external organisations will not be analysing or reviewing the questionnaires before they have been anonymised by the researcher. People administering the questionnaires, will have access to this data initially. However once passed to the researcher, individual participant data, such as questionnaires, interviews or from focus groups will be made anonymous and given a researcher code, known only to the researcher. A master list identifying participants to the research codes data, and any other electronic data, will be held on a password protected computer accessed only by the researcher. Hard paper/taped data will be stored in a locked cabinet, within a locked office, accessed only by the researcher.

If you consent to take part in an interview or focus group, your image and/or voice will be digitally recorded. Video and audio recordings will be used for analysis, and the

words in written form, may be used in conferences, presentations and literature. No other use will be made of them without your written permission, and no-one outside the project will be allowed access to the original recordings.

What will happen to the results of the research project? The results of the study will be published. This will include academic papers and also in reports, presentations and other literature produces by the University, and partner organisations involved in the study. You will not be identified in any report/publication without your prior consent. The University may keep the data and use it in future studies. If we do this it will only be in a completely anonymised fashion. The data collected will be kept for a period of 3 years following the completion of the study. After that time, all hard and electronic data will be destroyed securely. All data will be processed in a way that meets the Universities' General Data Protection Regulation GDPR procedure. Here is the link to the University's Research Privacy notice that sets out details about the University's processing of personal information for research purposes:
www.salford.ac.uk/privacy/introduction/research-privacy-notice.

If you want to stop being part of the study at any point, this is fine. If you withdraw from the study, we will destroy all of your identifiable samples/digitally recorded interviews, but we will use the information and data collected from you collected up to your withdrawal.

What if there is a problem? If you have a concern or complaint about any aspect of this research study, you should contact the researcher by email j.thompson14@edu.salford.ac.uk . Following this, or you would like to contact someone else other than the researcher, then you can contact the research supervisor, Prof Penny Cook by email P.A.Cook@salford.ac.uk or phone 0161 295 2873, or the Chair of the Ethics Panel, Professor Andrew Clark by email a.clark@salford.ac.uk or phone 0161 295 4109. The University complaints procedure can be found here:
<https://www.salford.ac.uk/askus/academic-support/complaints>

About the researcher... My name is Jess Thompson. I am a student undertaking a PhD at The University of Salford. I also work for City of Trees as the role of Director. I am interested in the wellbeing impacts of people getting involved in urban greening initiatives led by organisations. These urban greening initiatives aim to support people's

involvement in looking after and improving public realm greenspaces at a neighbourhood level.

If you have any questions about this research project, please contact the researcher j.thompson14@edu.salford.ac.uk

Appendix F – Numbers of references coded to themes

Numbers of references coded to themes and sub-themes from GWTWB QUAL dataset

Total number of refs n=834

THEME	Subtheme (CODE)	Total	Female	Male	18-29	30-59	60+	Corporat	Just take	Employm	Health
Physical activity	Physical activity		21	27	17	25	6	23	24	1	0
	Hard work		2	2	1	2	1	3	1	0	0
	TOTAL	52	23	29	18	27	7	26	25	1	0
Connected to others	Sociable		45	24	18	43	8	39	25	2	2
	Team		15	18	10	20	3	22	12	0	0
	Less lonely		1		0	0	1	0	1	0	0
	Family time		1	2	1	2	0	0	3	0	0
	Kids time		2	2	0	4	0	0	4	0	0
	TOTAL	110	64	46	29	69	12	61	45	2	2
Noticed nature	Nature connection		38	29	33	29	5	29	33	5	0
	Fresh air		48	19	15	45	7	31	35	1	0
	Mindful		6	6	2	9	1	8	3	1	0
	TOTAL	146	92	54	50	83	13	68	71	7	0
Learned something	Learn		27	27	23	28	2	23	28	2	0
	Something new		3	3	5	2	0	5	2	0	0
	TOTAL	60	30	30	28	30	2	28	30	2	0
Given back	Helped community		36	33	29	39	1	41	26	2	0
	Civic pride		4	2	2	4	0	3	3	0	0
	Future generations		1	3	0	4	0	1	2	1	0
	TOTAL	79	41	38	31	47	1	45	31	3	0
Improved wellbeing	Relaxed		23	14	16	17	4	24	10	0	3
	Escapism		10	9	5	12	2	14	8	0	0
	Escaped tech		5	2	2	5	0	0	3	1	0
	Mental health		26	12	19	12	7	17	17	2	2

	Fun & enjoyment		26	36	27	27	8	33	27	2	0
	TOTAL	163	90	73	69	73	21	88	65	5	5
Nurtured the space	Nurtured/maintained space		58	48	47	53	6	60	40	6	0
	TOTAL	106	58	48	47	53	6	60	40	6	0
Helped planet	Planet		3	3	4	2	0	4	1	1	0
	TOTAL	6	3	3	4	2	0	4	1	1	0
Sense of self	Valued		1	0	0	0	1	0	1	0	0
	sense of achievement		62	45	35	65	7	59	42	5	1
	Self worth		2	1	1	1	1	2	1	0	0
	Me time		1	0	0	0	1	0	1	0	0
	TOTAL	112	66	46	36	66	10	61	45	5	1

Appendix G – Which thematic analysis?

Which Thematic Analysis?

TA is not one approach, and this misconception has been introduced. TA is an umbrella term that embraces a number of approaches, that have a shared aim, that being to identify and to make sense of patterns across a dataset. The approaches to this differ significantly, both in theoretical assumptions and process. Braun and Clarke (2020) describe how the different approaches, or versions, fall into three camps under the banner of TA: *Coding Reliability TA*; *Codebook TA*; *Reflexive TA*.

The following section will give an overview of each approach as an option, and the relevance to this research, thus explaining the decision-making process for which version of TA has been employed for this research.

Option 1 - Coding Reliability TA (CRTA). This version of TA is grounded in a post positivist approach to address concerns over coding reliability. CRTA is concerned with objectivity in the coding process and strives to ensure accuracy through a ‘un-biased’ approach to coding and generating themes. As a move away from traditional methods such as grounded theory (Braun & Clarke, 2020), Boyatzis (1998) was an early advocate developing this approach to TA further, to one that has an emphasis on empirical, observed knowledge, with the qualitative dimension taking second seat, ‘small q’ (Kidder & Fine, 1987) within the analytical framework.

CRTA is deductive, starting with a theory which influences the coding from the outset. Themes develop early on, either before or immediately after data familiarisation and data is allocated to pre-existing themes. A pre-agreed codebook is co-produced amongst multiple researchers tasked with coding. Coding is very structured and organised around the structured codebook which acts as a coding agreement, and the key measure used for inter-relator reliability. Inter-relator tests reliability using multiple ‘coders’ (researchers). An inter-relator rate of 80% accuracy is deemed reliable. Areas of disagreement is addressed through building consensus amongst the team, hence this is often dubbed ‘consensus coding’.

The use of CRTA approach was considered inappropriate for this study for a number of reasons. Firstly, this method is designed for research involving multiple or a team of

researchers. Secondly this method generates themes as ‘domain summaries’ or as described by Braun & Clarke (2021) ‘bucket themes’ whereby summaries are deduced from patterns of datasets. Typically this might generate themes such as ‘risks’ or ‘barriers’ to the phenomenon in question, and as such is commonly used provide a quick and ready route for answers to be directly applied to policy or practice. However, this approach dons a positivist, empirical set of gloves in handling the data, and interpreting the patterns, to prioritise the issue of reliability. As such this approach lacks the capacity to encompass theoretical and philosophical underpinnings which fuel the researcher, giving power to interrogate and interpret the data and facilitate in-depth, rich, meaningful analysis. Finally, Braun & Clarke (2020) argue that it is impossible to truly achieve a ‘non-bias’ engagement with data, as subjectivity is always present during the intersection of data analysis to coding. This research aims to understand what works for whom and *why*, therefore in-depth insight into participants experiences is a crucial part in the journey of understanding. The multi-researcher design coupled with the trade-off in reducing the qualitative richness rendered the CRTA approach incompatible with this study.

Option 2 - Codebook TA (CTA). This version of TA refers to a collection of methods that moves towards the qualitative arena, compared to CRTA. In this version a coding framework is developed to organise, structure and documenting the analysis of data. Examples of these a Framework Analysis (Ritchie & Spencer). Similar to CRTA, the process usually involves developing the themes in the early stages and new additional themes can be generated through inductive data engagement. Unlike CRTA inter-rater reliability and coding consensus is not used as a marker for quality.

The CTA version of TA was deemed a possible fit for the research, as the use of a structured coding framework could be applied to developing the programme theory within the contribution analysis methodology. Methods using CTA have been designed for and used in practice and policy-based research (Braun & Clarke, 2021) as they provide a recognised framework in which to engage and analyse data. However, there is a compromise to this method. Adoption of a CTA method would entail an approach to the engagement in data and data analysis described by Braun & Clarke (2021) as searching for ‘diamonds in the sand’. Although not theoretically neutral, this seek-and-

shall-find approach could be perceived as being a less robust method because it does not explicitly address the issue of reflexivity, and potential perceived bias relating to the practitioner-researcher, nor does it offer coding consensus as a hallmark for quality.

Option 3 - Reflexive TA (RTA). This is relatively new version of TA developed by Braun and Clarke (2019b) that sits fully within the qualitative paradigm. It comprises of a set of six steps to guide the user but stress that the underpinning philosophical and theoretical paradigm, ontological, epistemological perspectives must be integral to engaging with the data. Furthermore, RTA embraces the subjective skills, perceptions and experiences that the researcher brings to the process. As such, this approach is suited to the lone researcher and does not lend well to a team of researchers as it is the individual researcher's personal interpretation (guided by theoretical foundations). Kidder and Fine (1987) make a distinction between 'Big Q' and 'small q' qualitative research, and RTA sits firmly in the 'Big Q' camp (Braun & Clarke, 2021).

The process of conducting a RTA is backed by a set of guidance produced by Braun & Clarke (2021), which is a six stage process. In their recent paper *What size fits all? What counts as quality practice in (reflexive) thematic analysis* (Braun & Clarke, 2021), the authors stress that although they have prescribed a set of guidance for undertaking RTA, the researcher must see the process as a set of tools rather than a rulebook to be followed that will lead to high quality TA. Braun & Clarke emphasize that the guidance must be seen as a procedure that enables the facilitation of, and access to, in-depth immersive engagement and analysis of data, and in doing so, RTA must be underpinned by epistemological and theoretical assumptions, declared from the outset. The researcher must bring their own craft, skill and experience to the process (Braun & Clarke, 2021).

Option 3 - RTA, was chosen as the most appropriate version of TA to employ for this research. As a method it provides the user with a useful process of six steps to provide guidance in striving towards good quality analysis. Furthermore, it welcomes the researcher's reflexivity to the point of this in itself being a contribution to the quality of the analysis. RTA demands the declaration of paradigmatic and epistemological assumptions which are in-line with quality standards within the qualitative paradigm.

The next section will explore RTA in more detail, providing deeper justification and rationale as an appropriate and compatible approach to data analysis for this study.

Reflective Thematic Analysis (RTA)

Braun & Clarke (2021) developed RTA as a product of their extensive thinking, writing, teaching and reflection of the qualitative potential within the cluster of methods under the TA canopy. Since 2006 Braun and Clarke have written extensively (Braun & Clarke, 2013; Braun & Clarke, 2014; Braun & Clarke, 2014a; Braun & Clarke, 2021) advocating the application of TA methods to be used within a qualitative paradigm. They express that over time theirs, and others, thinking has evolved, and although TA is used widely, having moved away from its roots in psychology, spilling into health and social research, frustrations stemming from the lack of credibility by some editors, reviewers, researchers of this form of data analysis is evident in their published work (Braun & Clarke, 2021; Braun & Clarke 2014). Braun & Clarke (2021) critically reflect on their own part in this dichotomy and suggest that the lack of understanding of what actually TA is, and its' potential could be down to their assumptions of what quality qualitative analysis entailed in 2006 were not assumed, shared or organically cascaded to those new or less familiar with qualitative analysis. Hence the birth of *reflexive* TA (Braun & Clarke, 2019b; Braun & Clarke, 2021), an older, wiser yet fresher and sharper strand of TA that addresses head on the sticky issue of bias in subjective analysis as a prescribed version of TA sits fully within the qualitative paradigm and therefore is subject to the rigour of high quality qualitative analysis, where the ontological and epistemological perspectives are declared upfront and inform, guide and influence the process from initial engagement in data, the analysis and interpretation of data.

RTA should be seen as a method rather than methodology because of its flexible nature (Braun & Clarke 2020; Braun & Clarke 2021). For example, it is a facilitation tool that unlocks the pursuit of interpretation and knowledge production across a range of theoretical perspectives. It can be used with a range of paradigmatic, epistemological and ontological assumptions and as such can be used within a different set of approaches to engaging with data, coding and generation of themes (Braun & Clarke, 2021). Furthermore, it is suited to both *experiential*, i.e. critical realist, and *critical*, i.e. relativist leanings, and therefore can be used for both deductive and inductive analysis

(Braun & Clarke, 2021). Braun and Clarke (2021) make the point that it is impossible to strip away an individual's ontological and epistemological assumptions in using TA or analysis of any data, therefore 'pure' inductive analysis is a conceptual red herring, and induction instead is grounded in data (Braun & Clarke, 2021).

Drawing on the discussion thus far, the rationale for adopting RTA as a method for this study is laid out in the following points (Braun & Clarke, 2021):

1. The flexible nature of RTA, and the potential for its application across differing theoretical frameworks makes this method compatible with critical realism which has feet in both realist and relativist camps, contrary to the more traditional polarised ontological and epistemological perspectives (post-positivist, constructionist).
2. The potential risk of this study being deemed as 'bias' because of the researcher's working role, background and experience becomes not just managed or contained, but seen as a valued attribute to the interrogation of the data.
3. There is a prescribed process, that offers guidance for the user that is prescriptive but it best served as a tool to unlock in-depth and meaningful analysis, interrogation and interpretation of data.
4. From a methodological perspective, this form of data analysis seeks to identify patterns of meaning across data, which helps to build a narrative to be applied and tested against the programme theory. Therefore, is harmonious with the contributions analysis methodology, with roots in realist evaluation .

To summarise, RTA provides a robust, structured method of data analysis that encompasses the critical realist ontological and epistemological assumptions and pragmatist paradigm, and embraces the subjective nature, the issue of reflexivity of the practitioner researcher.

Appendix H – Missing data statistics

Missing data statistics

		Age	Gender	Nationality	Ethnicity	Personal pathway
N	Valid	351	356	356	350	357
	Missing	6	1	1	7	0

Missing data statistics – post dataset manipulation

aggregation of age, nationality and ethnicity

		Age range	White v non-white	British v non-British
N	Valid	351	350	356
	Missing	6	7	1

Missing data statistics, pre 7 post mood score and pre & post ‘5 Ways’ variables

		Participants mood 1 hour	Participant mood post	Physical	PRE 1-10 scale Feel	PRE 1-10 scale Take Notice of	PRE 1-10 scale Learn &	PRE 1-10 scale Give	PRE 1-10 scale Physical	POST 1-10 scale Feel	POST 1-10 scale Take	POST 1-10 scale Learn &	POST 1-10 scale Give something	POST 1-10 scale
N	Valid	347	301	328	332	328	326	329	323	328	321	320	324	
	Missing	10	56	29	25	29	31	28	34	29	36	37	33	

Variable Summary ^{a,b}

Missing		Valid N	Mean	Std. Deviation
N	Percent			

Participant mood post activity	56	15.7%	301	8.95	.978
POST 1-10 scale Learn & develop skills	37	10.4%	320	8.03	2.045
POST 1-10 scale Take notice of Nature	36	10.1%	321	9.15	1.216

a. Maximum number of variables shown: 25

b. Minimum percentage of missing values for variable to be included: 10.0%

Appendix I - Manipulation of datasets

Aggregating age, * and * datasets

1a. Original Age dataset

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24	54	15.1	15.4	15.4
	25-29	68	19.0	19.4	34.8
	30-34	52	14.6	14.8	49.6
	35-39	40	11.2	11.4	61.0
	40-44	30	8.4	8.5	69.5
	45-49	38	10.6	10.8	80.3
	50-54	26	7.3	7.4	87.7
	55-59	21	5.9	6.0	93.7
	60-64	11	3.1	3.1	96.9
	65-69	4	1.1	1.1	98.0
	70-74	6	1.7	1.7	99.7
	80+	1	.3	.3	100.0
	Total	351	98.3	100.0	
Missing	blank	1	.3		
	System	5	1.4		
	Total	6	1.7		
Total		357	100.0		

1b. Age range post dataset manipulation, aggregated into reduced number of age ranges

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 30	122	34.2	34.8	34.8
	30-59	207	58.0	59.0	93.7
	60+	22	6.2	6.3	100.0
	Total	351	98.3	100.0	
Missing	System	6	1.7		
Total		357	100.0		

2a. Original nationality dataset

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	British	315	88.2	88.5	88.5
	Indonesian	1	.3	.3	88.8
	Polish	2	.6	.6	89.3
	Hungarian	2	.6	.6	89.9
	Greek	4	1.1	1.1	91.0
	Spanish	3	.8	.8	91.9
	British-Asian	2	.6	.6	92.4
	South African	1	.3	.3	92.7
	Irish	3	.8	.8	93.5
	European	4	1.1	1.1	94.7
	Chinese	6	1.7	1.7	96.3
	Portuguese	1	.3	.3	96.6

	Romanian	1	.3	.3	96.9
	Canadian	1	.3	.3	97.2
	Chilean	1	.3	.3	97.5
	Slovak	1	.3	.3	97.8
	British-Indian	1	.3	.3	98.0
	British-Brazilian	1	.3	.3	98.3
	Malaysian	1	.3	.3	98.6
	New Zealander	1	.3	.3	98.9
	Jordanian/Bulgarian	1	.3	.3	99.2
	Trinidadian	1	.3	.3	99.4
	Turkish	1	.3	.3	99.7
	Bulgarian	1	.3	.3	100.0
	Total	356	99.7	100.0	
Missing	System	1	.3		
Total		357	100.0		

2b. Nationality post dataset manipulation - British v non-British dataset

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	315	88.2	88.5	88.5
	2.00	41	11.5	11.5	100.0
	Total	356	99.7	100.0	
Missing	System	1	.3		
Total		357	100.0		

3a. Original ethnicity dataset

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White	308	86.3	88.0	88.0
	Asian	10	2.8	2.9	90.9
	Mixed - white Asian	2	.6	.6	91.4
	Chinese	7	2.0	2.0	93.4
	Mixed - white & black African	2	.6	.6	94.0
	Mixed	11	3.1	3.1	97.1
	Polish	2	.6	.6	97.7
	Black African	3	.8	.9	98.6
	South East Asian	4	1.1	1.1	99.7
	Mixed - white & black Caribbean	1	.3	.3	100.0
	Total	350	98.0	100.0	
Missing	System	7	2.0		
Total		357	100.0		

3b. Ethnicity post dataset manipulation - White v non-white

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	308	86.3	88.0	88.0

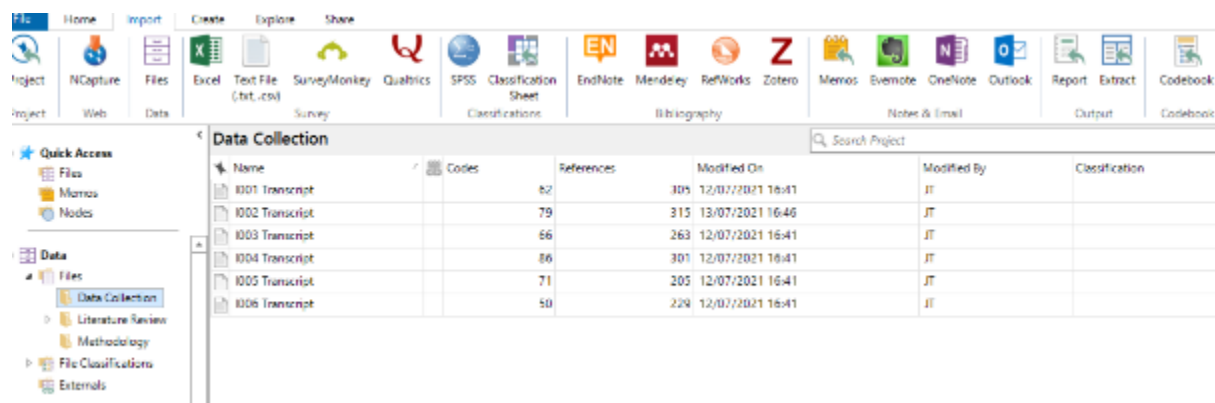
	2.00	42	11.8	12.0	100.0
	Total	350	98.0	100.0	
Missing	System	7	2.0		
Total		357	100.0		

Appendix J - How the data was coded

A step-by-step account

How the data was coded

Once the initial ideas for codes had been logged (Figure J1 & J2), the next stage, was to begin the actual process of coding the data set. This stage was undertaken using NVivo (version 12) which is a software programme used to manage and organise data. The six transcription documents were imported into NVivo, and a new folder 'Data Collection' was created under the *Data>Files* infrastructure within NVivo.



Name	Codes	References	Modified On	Modified By	Classification
I001 Transcript		82	30/5 12/07/2021 16:41	JT	
I002 Transcript		79	31/5 13/07/2021 16:46	JT	
I003 Transcript		66	26/3 12/07/2021 16:41	JT	
I004 Transcript		86	30/1 12/07/2021 16:41	JT	
I005 Transcript		71	20/5 12/07/2021 16:41	JT	
I006 Transcript		50	22/9 12/07/2021 16:41	JT	

Figure J1. Data Collection Transcripts imported and filed in NVivo

A systematic and methodical approach to coding the qualitative data involved analysing specific statements within the data and transferring those observations into codes. This was undertaken using retroductive reasoning. This involved employing a deductive lens to generate observations through analysis of data that could be applied to the programme theory, that is, the existing framework guiding the programme theory (i.e. Five Ways to Wellbeing). This was coupled with an inductive analytic process to code observations that could be applied to a new concept within the programme theory.

The process of coding was undertaken using the NVivo software using the following steps:

1. A transcript file, such as 'I001' was opened within NVivo, from here data from the transcripts can be accessed.

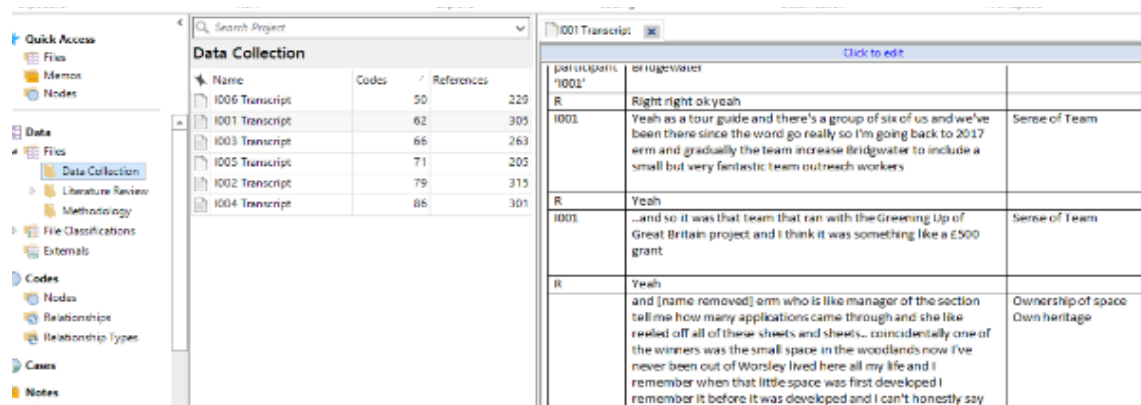


Figure J2. Accessing the data from the transcripts stored in NVivo

2. The entire dataset was approached methodically. Where a set of text became an observation, that observation was highlighted and either saved as a new 'node' (which is a 'container' in NVivo that represent themes, ideas, concepts, opinions or experiences), or allocated to an existing node. Nodes may also be understood as codes. As a new node is created, it is given a name that reflects the observation, such as 'group dynamics', and this becomes the code 'group dynamics'. Any observations that fitted the code 'group dynamics' the data (text) was highlighted and allocated to that code, i.e. node.

3. During the data analysis, codes which were identified (deductive) as being linked to the programme theory, i.e. formed part of the theoretical narrative guided by the Five Ways to Wellbeing, were structured under a 'parent' node as a 'child' node (code). For example, the Five Ways to Wellbeing (NEF,2008): *Be Active; Connect; Take Notice; Learn; Give Back* were used as parent nodes with child nodes (codes). The example shows child codes under the parent code 'Connect'. In this example the child code 'Group dynamics' is anchored conceptually to the parent code 'Connect'. The child code observations tended to offer a deeper interpretation of the participants experience, which would be important at a later stage when looking for patterns that explain causal processes.

Code Name	Count	Timestamp	Source
Physical activity good	3	5 12/07/2021 19:22	JT
Connect	6	137 12/07/2021 16:42	JT
Communication	1	1 14/07/2021 15:59	JT
Community bonds	1	2 14/07/2021 20:41	JT
Confrontation	2	2 12/07/2021 18:41	JT
Extending peer grp	2	5 14/07/2021 15:52	JT
Friendships	3	6 12/07/2021 18:02	JT
Group dynamics	3	6 12/07/2021 19:28	JT
Isolation	4	5 12/07/2021 18:48	JT
Links to other groups	2	2 14/07/2021 15:33	JT
Lost connections	3	3 12/07/2021 19:09	JT
Movement	2	5 14/07/2021 15:36	JT
Multiculture & diversity	2	4 14/07/2021 14:37	JT
Networking	5	12 13/07/2021 16:01	JT
New connections	5	10 12/07/2021 18:29	JT
Picnic & shared food	3	6 12/07/2021 18:35	JT
Reaching out wider community	4	10 12/07/2021 18:35	JT
Self awareness	2	6 12/07/2021 19:27	JT
Sense of solidarity	1	1 14/07/2021 20:28	JT

Figure J3 Parent and child codes

Another example of ‘parent’ and ‘child’ codes from deductive analysis can be seen in Figure J3, where the parent code ‘Be Active’ has child code labelled ‘Hard graft but good’ and a description attached to the code to describe what this means. This is an example, in line with Reflexive TA, where the code already provides some indication that there is a ‘story’ or narrative within the code, rather than just use a domain summary or ‘bucket’ to apply flat descriptive data. Observing the parent and child hierarchy in this way, reveals that under the parent code there are stories, or insights being developed as represented by the child code names. The ‘parent’ code *Be Active* and ‘child’ codes revealing stories linked to the concept of participants being physically active as a result of their involvement in civic environmental activities, i.e. the programme theory.

Name	Files	References	Created On	Created By
5 Ways to WB	3	5	13/07/2021 16:54	JT
Activity	6	49	12/07/2021 18:04	JT
Be Active	6	32	12/07/2021 16:43	JT
Anti gym	2	2	14/07/2021 15:11	JT
Hard graft but good	1	4	12/07/2021 18:23	JT
Physical activity not important	2	2	13/07/2021 16:10	JT
Physical activity challenging	5	9	12/07/2021 19:24	JT
Physical activity dislike	2	2	13/07/2021 16:07	JT
Physical activity for purpose	2	6	14/07/2021 15:10	JT
Physical activity good	3	5	12/07/2021 19:22	JT

NVivo helps to manage the data behind the codes and helps to understand which of these codes applies to datasets. For example, Figure J4 shows that data (text) allocated to the code ‘Hard graft but good’ can be accessed and this is useful in the process of reverting back to raw data, but also, NVivo shows that there are 4 references (chunks of text) allocated from 1 file (1 transcript). This is incredibly useful within a realist methodology, as it begins to tell the story of shows that one person’s experience of the physical aspects being challenging but good. As more data is collected throughout the study timeframe, we will start to build a picture of who shares this similar experience, thus providing insight into *what works for whom in what circumstance*.

Name	Files	References
5 Ways to WB	3	5
Activity	6	49
Be Active	6	32
Anti gym	2	2
Hard graft but good	1	4
Physical activity ch	5	9
Physical activity di	2	2
Physical activity fo	2	6
Physical activity go	3	5
Physical activity no	2	2
Connect	6	137

Reference	Coverage	Text	Source
1001	1.02%	There was a lad called [name removed] and he came up from the gardens in Worsley and he came up he was like one man and a barrow (laugh) and so you've got a lot of work on here so so another gardening day happens just before we started taking on public tours and that was a boiling hot day and that was in a woodland and we were clearing bricks and rubble and once again [name removed] was alongside me [name removed] I've struct some metal and I said dig it up she said I can't is too big and it turns out it was a Victorian gate	Ser Phy

Figure J5 Example of references linked to sub (child) codes

4. During the data analysis, codes were identified through inductive analysis, producing codes that were not linked to an existing concept within the existing programme theory. These codes could share patterns of meaning across a conceptual idea. The process of identifying observations as codes and then forming a centralised concept was iterative.

For example, a code *Identity* was generated to represent some participants' expression and descriptions of either regaining or losing their sense of identity. Figure 19 below shows an example within the dataset, where participant 'I003' explains that how she felt having left her job as a teacher

"You kind of lose your purpose do I have a purpose you know what's my role? What am I doing? What am I contributing..."

The analysis and interpretation of this data led to this being coded as both *Identity* and *Sense of purpose* as the participant is sharing her experience of questioning her identity now that she has left her job in teaching. This has been interpreted as her losing her sense of purpose, feeling sad, a sense of loss and questioning her role in life. This is an example whereby data was coded twice, the purpose being to explore every aspect of the data initially, to tease out the meaning and the relevance of what's being said. The strategy being, that if appropriate, codes could be collapsed further into the process of analysis if numbers of codes became unmanageable or diluted in meaning.

Other codes were derived that had some shared essence of identity, such as feeling *Lost*, wanting *Me time* and *Recognition from others*. These codes, although subtly linked to *Identity* could be tethered to an overall conceptual idea of *Sense of self*.

Therefore, *Sense of self* became the 'parent' code with feeling *Lost*, wanting *Me time* and *Recognition from others* as 'child' codes under the 'parent' code. See Figure J6.

The screenshot displays the NVivo software interface. On the left, a sidebar shows 'Quick Access' with options for Files, Memos, and Nodes. Below this, a 'Data Collection' section lists 'Literature Review' and 'Methodology'. The 'Nodes' section is expanded, showing a hierarchical tree of codes. The 'Nodes' list includes: Own heritage (3 files, 28 references), Pathway (5 files, 22 references), Physical place (4 files, 60 references), Realist methodology (0 files, 0 references), Reflexivity (4 files, 9 references), Sense of self (5 files, 82 references), Goals (1 file, 4 references), Identity (3 files, 11 references), Inclusivity (1 file, 3 references), Life's journey (4 files, 16 references), Lost (2 files, 7 references), Me time (1 file, 1 reference), Recognition from others (3 files, 7 references), Role (4 files, 17 references), Sense of purpose (2 files, 8 references), and Take notice (5 files, 58 references). The 'Identity' node is selected. On the right, a 'Reference 3 - 2.24% Coverage' window is open, showing a quote from participant I003: 'More links I could have with that garden the better.' The quote is associated with the 'Identity' node and has a 'PRESTI SELF ID' label.

Name	Files	References
Own heritage	3	28
Pathway	5	22
Physical place	4	60
Realist methodology	0	0
Reflexivity	4	9
Sense of self	5	82
Goals	1	4
Identity	3	11
Inclusivity	1	3
Life's journey	4	16
Lost	2	7
Me time	1	1
Recognition from others	3	7
Role	4	17
Sense of purpose	2	8
Take notice	5	58

Reference	Text	Role
I003	More links I could have with that garden the better.	PRESTI SELF ID
I003	Being a tour guide the people that you meet is fantastic you know the other tour guides and it's very enriching for me and particularly having left teaching. You kind of lose your purpose do I have a purpose You know, what's what's my role? What what am I doing? What my contributing and so being able to go to Bridgewater I could turn up there in the morning feeling quite negative in many ways and unsure what I'm doing and as I start a tour I'm completely engaged and thrilled and reminded of the excitement that I have and so that's been a great advantage you know mentally, physically, it's great walk it takes ages just to take people. That's a big sign. So getting there. So, you know, physically but mentally in particularly (voice sounds tight), I think it gives a real positive affirmation, as did Green Planet you see.	ROLE – SENSE: SELF ID SOCIAL THING! CITIZEN CHANG INCREA UPLIFT SENSE: POSITIV

Figure J6 Example of theme emerging ‘sense of self’

In total, a number of 177 codes were generated, 14 of which were parent codes with child codes aggregated were generated from the data analysis. The next stage in this process was to begin generating themes from the codes identified.

Appendix K - GWTWB Qualitative references PRE

ACTIVITY

GWTWB qualitative references coded to themes (aggregated version) exported from NVivo

Numbers of references coded to themes by gender.

GWTWB respondent	Gender = Female (192)		Gender = Male (164)		Total (690)	
	Number of references (%)		Number of references (%)		Total references (%)	
Want physical activity	6	3%	11	7%	17	2%
Want to connect with others	28	15%	19	12%	47	7%
Want time in nature be outdoors	88	46%	58	35%	146	21%
Want to learn or improve skills	24	13%	11	7%	35	5%
Want to give back	94	49%	89	54%	183	27%
To do something worthwhile	14	7%	10	6%	24	3%
For my wellbeing	25	13%	26	16%	51	7%
Want to help look after and nurture the space	84	44%	79	48%	163	24%
Concerned about planet or climate	15	8%	9	5%	24	3%
TOTAL	378		312		690	

Numbers of references coded to themes by pathway

	Employment prospects (15)		Corporate group (178)		Just to take part (160)		Improve health (4*) *Negligible		Total (690)	
GWTWB respondent	Number of references (%)		Number of references (%)		Number of references (%)		Number of references (%)		Total number of references (%)	
Want physical activity	0	0%	8	4%	9	6%	0	0%	17	2%
Want to connect with others	1	7%	16	9%	29	18%	1	25%	47	7%

Want time in nature be outdoors	6	40%	71	40%	67	42%	2	50%	146	21%
Want to learn or improve skills	7	47%	12	7%	14	9%	2	50%	35	5%
Want to give back	8	53%	97	54%	76	48%	2	50%	183	27%
To do something worthwhile	1	7%	15	8%	8	5%	0	0%	24	3%
For my wellbeing	1	7%	30	17%	18	11%	2	50%	51	7%
Want to help look after and nurture the space	8	53%	78	44%	76	48%	1	25%	163	24%
Concerned about planet or climate	2	13%	12	7%	10	6%	0	0%	24	3%
Total	34		339		307		10		690	

Numbers of references coded to themes by age :

	Age = 18 to 29 (126)		Age = 30 to 59 (210)		Age = 60 to 75 (21)		TOTAL (690)	
GWTWB ref code	Number of references (%)		Number of references (%)		Number of references (%)		Total number of references (%)	
Want physical activity	2	2%	11	5%	4	19%	17	2%
Want to connect with others	13	10%	25	12%	9	43%	47	7%
Want time in nature be outdoors	53	42%	86	41%	7	33%	146	21%
Want to learn or improve skills	10	8%	21	10%	4	19%	35	5%
Want to give back	72	57%	104	50%	7	33%	183	27%
To do something worthwhile	5	4%	16	8%	3	14%	24	3%
For my wellbeing	18	14%	30	14%	3	14%	51	7%
Want to help look after and nurture the space	79	63%	74	35%	10	48%	163	24%
Concerned about planet or climate	12	10%	12	6%	0	0%	24	3%
Total	264		379		47		690	

Appendix L - GWTWB Qualitative references POST

ACTIVITY

GWTWB qualitative references coded to themes (aggregated version) exported from NVivo

Numbers of references coded to themes by gender.

	Gender = Female (192)		Gender = Male (164)		Total (834)	
GWTWB ref code	Number of references (%)		Number of references (%)		Total references (%)	
Connection with others	64	33%	46	28%	110	13%
Enhanced wellbeing	90	47%	73	45%	163	20%
Given something back	41	21%	38	23%	79	9%
Learned something	30	16%	30	18%	60	7%
Noticed nature	92	48%	54	33%	146	18%
Nurtured the planet	3	2%	3	2%	6	1%
Nurtured the space	58	30%	48	29%	106	13%
Physical activity	23	12%	29	18%	52	6%
Sense of self	66	34%	46	28%	112	13%

Numbers of references coded to themes by pathway.

	Employment	Corporate group (178)	Just to take part (160)	Improve health (4*) *NEGLECTIBLE	Total (834)

	prospects (15)									
GWTWB ref code	Number of references (%)		Number of references (%)		Number of references (%)		Number of references (%)		Total references (%)	
Connection with others	2	13%	61	34 %	45	28%	2	50%	110	13%
Enhanced wellbeing	7	47%	88	49 %	65	41%	3	75%	163	20%
Given something back	3	20%	45	25 %	31	19%	0	0%	79	9%
Learned something	2	13%	28	16 %	30	19%	0	0%	60	7%
Noticed nature	7	47%	68	38 %	71	44%	0	0%	146	18%
Nurtured the planet	1	7%	4	2%	1	1%	0	0%	6	1%
Nurtured the space	6	40%	60	34 %	40	25%	0	0%	106	13%
Physical activity	1	7%	26	15 %	25	16%	0	0%	52	6%
Sense of self	5	33%	61	34 %	45	28%	1	25%	112	13%

Numbers of references coded to themes by age.

	Age = 18 to 29 (122)		Age = 30 to 59 (207)		Age = 60 to 75 (21)		Total (834)	
GWTWB ref code	Number of references (%)		Number of references (%)		Number of references (%)		Total references (%)	
Connection with others	29	24%	69	33%	12	57%	110	13%
Enhanced wellbeing	74	61%	78	38%	11	52%	163	20%
Given something back	31	25%	47	23%	1	5%	79	9%
Learned something	28	23%	30	14%	2	10%	60	7%
Noticed nature	50	14%	83	40%	13	62%	146	18%
Nurtured the planet	4	3%	2	1%	0	0%	6	1%
Nurtured the space	47	39%	53	26%	6	29%	106	13%
Physical activity	18	15%	27	13%	7	33%	52	6%
Sense of self	36	30%	66	32%	10	48%	112	13%

Appendix M - Focus group schedules

1. Practitioner focus group:

Practitioner Perspectives Workshop

4th Floor, Fairbairn House, Sackville Street

Background (taken from September 2023 N4H Evaluation Subgroup notes)

Impacts and outcomes are different for different populations and there is a wide variety of activity across the network. Outcomes will vary across different population needs and schemes. We need to better understand what works, where, when and for who. Without understanding this, evaluation data could serve to widen health inequalities.

GSP and green wellbeing is a system and not an intervention.

It is important to

- Seek to understand effectiveness and also uptake/engagement.
- Important to capture impact on wider determinants of health
- Important to look at evidence as a whole including the negative findings to understand what works and also what doesn't
- Important to gather demographic data sets – so some data collection should be universal to all projects

Evaluation may be more challenging for some groups than others - particularly smaller organisations.

Workshop Objectives:

To invite a cohort of practitioners to share their experiences and perspectives on the following:

- Seek greater understanding of the **context** in which Nature for Health system(s) operate, looking at challenges to service delivery
- Discuss the **tools** practitioners use to capture impact, whether these work well/are useful/appropriate.
- Discuss desired **outcomes** in relation to enhanced wellbeing (is everything explained under a 5 Ways to Wellbeing framework?). From practitioner perspective and observations, are people's motivations satisfied? Are there any observed negative impacts to participation?

Cohort:

Purposeful sample from Nature for Health – suggest the steering group

Method

Qualitative discussion captured as notes and recorded and transcribed verbatim.

Outcome

Part of the data collection as per Jess Thompson's PhD at University of Salford.

Contributes towards the N4H Evaluation/Data subgroup aims (see above).

Results written up and report produced for N4H.

Session Plan

Timing	Session	Resources needed
Start tbc 15mins	Intros Why are we here?	Consent forms Refreshments (Jess)
20 mins	Discussion on context : <i>Thinking about the effectiveness of your service/offer, what are the challenges? (Prompts: funding & resources; engagement strategies; activities; other?)</i>	Dictaphone Large paper & pen for notes (Jess)
20 mins	Discussion on tools : <i>What evaluation tools work well/don't work well. Are they useful/appropriate/work well across different settings</i>	As above
20 mins	Discussion on outcomes : Is the 5 Ways to WB a good fit as a framework, does this align with motivations of participants? Does this align with the wider context (prompt: nature recovery;	As above

	climate change; employment and other life challenges). Are there any negative outcomes observed by practitioners?	
5 mins	Close and thank you. All to check happy with points captured on paper	
Total 1.5 hrs with 10 min wiggle room		

2. Participant focus group questions

(As semi-structured interview questions)

Semi-structured interview schedule

Exploring the impact of urban greening outreach projects in the community: an exploration of the influence of urban greening initiatives, on wellbeing within an urban context.

Qualitative Interview Schedule

Introduction

- This interview should take 30 minutes to an hour.
- Explain who we are and what we are doing.
- Outline and emphasise informed consent and anonymity, and that everything said will be kept confidential.
- Explain digital audio recording and check if it is OK to record for transcription purposes
- Outline the purpose of the interview – explain that the main objective is to explore their experience of environmental outreach activities with reference to the Five Ways to Wellbeing
- Briefly outline standard etiquette - e.g. Speak clearly and avoid personal criticisms or abusive language.

- Remember **THERE ARE NO RIGHT AND WRONG ANSWERS** - we are here to capture people's views, whether positive, negative or neutral.

Semi-structured questions/points for discussion

3. The process and how you got started (context)

- Can I start by asking you about how you first came to work with [either City of Trees or RHS Bridgewater or another organisation]?
- What were your motivations? What were you expecting?
- What types of activities did you do? What was involved?
- Are you still involved in those activities? Other activities? Why/why not?

4. What difference has it made (mechanism-outcome)

- What was that like? What is the difference it has made to you?
- Do you feel more connected – to others, neighbours, groups?
- Do you think it has had an impact on wider community? How? How does that feel?
- Did you think the activity increased your normal physical activity? How?
- Did you feel as though you learned something? What? How?
- Did you feel a closer connection to nature? Tell me about that?
- What has been the best thing about taking part? Was there anything challenging?
- Finally is there anything we haven't covered that you would like to raise before we close the interview?

Thank you for your time. End interview. Stop recording and ensure all consent forms have been obtained.