



Cardiff Business School

Ysgol Busnes Caerdydd

Tackling Food Poverty: Building Resilience into Alternative Food Supply Chain Provision

By

Alexander James Jones

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Logistics and Operations Management Section of Cardiff
Business School, Cardiff University

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Abstract

In the UK, the social enterprise sector has grown in both prominence and importance as a force in tackling food poverty. Initial explorations of these 'social impact supply chains' tend to focus on how social enterprises can establish and manage them, yet the question of how to make them resilient remains under-explored. Despite there being much literature and well-established theories relating to supply chain resilience, these are predominantly grounded within for-profit contexts. This is problematic as it is becoming increasingly recognised that traditional business models may not be well suited to understanding social enterprises, who typically face resource disparities compared to their commercial counterparts, along with unique challenges related to their status. Hence, there is a need to reconceptualise supply chain resilience within a social enterprise context, referred to here as 'social supply chain resilience'.

Using a Social Network Theory lens, this study explores the role of the network in the development of social supply chain resilience. To do this, action research was conducted into a social food supply chain network operating throughout South Wales, UK.

The primary theoretical contribution of this study is the development of an empirically tested framework for social supply chain resilience. This framework illustrates the role network ties play in resourcing, management / decision-making, and structure, and how this culminates in the ability to resist, respond, recover and / or grow. Additionally, this study outlines how such a network can be instigated by a single anchor organisation. Consequently, this research addresses a fundamental gap in operations and supply chain management research that reflects an underdeveloped focus on SEs. Furthermore, in outlining the creation of the network, this research holds both practical and policy implications as

it acts as a roadmap, guiding social entrepreneurs and policy makers alike in setting up similar social food networks elsewhere.

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Table of Contents

Abstract	i
Acknowledgements	iii
Table of Contents	v
List of Tables	xviii
List of Figures	xx
Abbreviations	xxii
CHAPTER 1: INTRODUCTION	1
1.1 Topic Overview	1
1.2 Research Rationale	1
1.3 Prior Research	3
1.4 Methodology	4
1.5 Thesis Statement	5
1.6 Thesis Outline	5
CHAPTER 2: LITERATURE REVIEW	7
2.1 Introduction	7
2.2 A Narrative Literature Review	7
2.3 Theoretical Lens	12
2.3.1 Social Network Theory	12
2.3.1.1 Types of Networks	13

2.3.1.2 Network Ties	13
2.3.1.3 A Social Network Theory Approach to Research.....	15
2.3.1.4 Justification for a Social Network Theory Approach	18
2.4 Supply Chain Resilience	22
2.4.1 Supply Chain Disruption	22
2.4.2 Resilience	25
2.4.3 Defining Supply Chain Resilience	27
2.4.4 Strategies to Develop / Build Supply Chain Resilience.....	34
2.4.4.1 Collaboration	36
2.4.4.2 Flexibility & Redundancy	40
2.4.4.2.1 Flexibility	40
2.4.4.2.2 Redundancy	44
2.4.4.2.3 Flexibility or Redundancy?	47
2.4.4.3 Agility	48
2.4.5 Elements of Supply Chain Resilience Strategies	49
2.4.5.1 Configuration.....	53
2.4.5.1.1 Node Density	53
2.4.5.1.2 Node Complexity	54
2.4.5.1.3 Node Criticality.....	55
2.4.5.2 Trust.....	55

2.4.5.3 Social Capital.....	55
2.4.5.3.1 Structural Capital	56
2.4.5.3.2 Cognitive Capital	56
2.4.5.3.3 Relational Capital.....	57
2.4.5.4 Visibility	57
2.4.5.5 Velocity.....	59
2.4.5.6 Risk Management.....	60
2.4.5.7 Human Resource Management.....	70
2.4.5.8 Culture	72
2.4.5.9 Supply Chain Understanding / Knowledge	72
2.4.5.10 Information Technology.....	74
2.4.6 Supply Chain Resilience – Conceptual Framework	75
2.4.6.1 Ability to Resist, Respond, Recover & Grow.....	76
2.4.6.1.1 Ability to Resist	76
2.4.6.1.2 Ability to Respond.....	78
2.4.6.1.3 Ability to Recover & Grow	79
2.4.6.1.4 Collaboration.....	81
2.5 The Rise of Social Impact Supply Chains	83
2.6 Social Enterprise	85
2.6.1 Defining Social Enterprise	86

2.6.2 Social Enterprise Landscape	104
2.6.3 Elements of Social Enterprise	105
2.6.3.1 The Social Entrepreneur.....	109
2.6.3.2 Human Resource Management.....	113
2.6.3.3 Volunteers.....	115
2.6.3.4 Finance.....	117
2.6.3.5 Planning.....	123
2.6.3.6 Governance	125
2.6.3.7 Innovation.....	128
2.6.3.8 Collaboration	129
2.6.3.9 Trust.....	134
2.6.3.10 Social Capital	134
2.6.3.11 Culture.....	138
2.6.3.12 Flexibility.....	139
2.6.3.13 Location	139
2.6.4 Social Supply Chain Resilience – Conceptual Framework	140
2.6.4.1 Resources	141
2.6.4.1.1 Tangible	141
2.6.4.1.1.1 Human Resources	141
2.6.4.1.1.2 Finance.....	142

2.6.4.1.2 Intangible	143
2.6.4.1.2.1 Social Capital	143
2.6.4.1.2.2 Trust	143
2.6.4.1.2.3 Skills / Expertise	143
2.6.4.1.3 Redundancy	144
2.6.4.2 Structure	144
2.6.4.2.1 Configuration	144
2.6.4.3 Management / Decision Making.....	145
2.6.4.3.1 Governance	145
2.6.4.3.2 Human Resource Management	146
2.6.4.3.3 Planning	147
2.6.4.3.4 Risk Management	148
2.6.4.3.5 Culture.....	148
2.6.4.4 Collaboration	149
2.7 Summary	149
CHAPTER 3: RESEARCH METHODOLOGY.....	151
3.1 Introduction	151
3.2 Research Philosophy	151
3.2.1 Ontology	152
3.2.2 Epistemology	153

3.2.2.1 Positivism.....	153
3.2.2.2 Interpretivism.....	154
3.2.2.3 Pragmatism	155
3.2.3 Adopting Pragmatism	155
3.3 Methodology – Action Research.....	156
3.3.1 Case Study	163
3.3.1.1 Stage 1: Research Question and Theoretical Aim.....	167
3.3.1.2 Stage 2: Instrument Development and Case Selection ...	168
3.3.1.3 Stage 3: Data Collection	170
3.3.1.3.1 Observations.....	176
3.3.1.3.2 Interviews	178
3.3.1.3.3 Focus Groups	185
3.3.1.3.4 Documentation.....	187
3.3.1.4 Stage 4: Data Analysis	187
3.3.1.5 Stage 5: Dissemination.....	196
3.4 Summary	197
CHAPTER 4: FINDINGS I: ALTERNATIVE FOOD PROVISION -	
STAKEHOLDERS, STRUCTURE & PROCESSES	198
4.1 Introduction	198
4.2 Stakeholders	199
4.2.1 FoodCore	199

4.2.2 FranchiseFood	199
4.2.3 ReFood Wales.....	200
4.2.4 Community Food Retail Projects	201
4.2.4.1 Community Food Retail Projects Overview	201
4.2.4.1.1 CFRP1	202
4.2.4.1.2 CFRP2	202
4.2.4.1.3 CFRP3	202
4.2.4.1.4 CFRP4	202
4.2.5 WellNourished	203
4.3 Structure	203
4.4 Processes	205
4.4.1 Value Adding Activities – Social Cohesion and Interaction	205
4.4.1.1 FoodCore	205
4.4.2 Supply	206
4.4.2.1 ReFood Wales	206
4.4.3 Operations	208
4.4.3.1 Operational Processes.....	208
4.4.3.1.1 FranchiseFood	208
4.4.3.1.2 Community Food Retail Projects	209
4.4.4 Demand	212

4.4.5 Value Adding Activities – Healthy Eating and Wellbeing.....	213
4.4.5.1 WellNourished.....	213
4.5 Summary	214
CHAPTER 5: FINDINGS II: SOCIAL SUPPLY CHAIN RESILIENCE –	
NETWORK ANALYSIS.....	216
5.1 Introduction	216
5.2 Resources	219
5.2.1 Tangible.....	219
5.2.1.1 Human Resources	219
5.2.1.1.1 The Social Entrepreneur	219
5.2.1.1.2 Employees (Paid Labour)	221
5.2.1.1.3 Volunteers (Unpaid Labour)	221
5.2.1.1.4 External Human Resources	222
5.2.1.2 Finance.....	223
5.2.1.2.1 Forms of Finance	223
5.2.1.2.2 Financial Support.....	225
5.2.1.2.3 Partnership Bids	227
5.2.1.2.4 Evidencing	227
5.2.1.2.5 Signposting.....	229
5.2.1.3 Materials	231
5.2.1.4 Transport	232

5.2.1.5 Information Technology	232
5.2.1.5.1 Aiding Collaboration	232
5.2.1.5.1.1 Collaboration during COVID	234
5.2.1.5.2 Finance Acquisition	234
5.2.2 Intangible	235
5.2.2.1 Social Capital.....	235
5.2.2.1.1 Structural Capital	235
5.2.2.1.2 Cognitive Capital	236
5.2.2.1.2.1 Low Turnover / Long Employee Tenure.....	236
5.2.2.1.2.2 Industry Associations	236
5.2.2.1.3 Relational Capital.....	237
5.2.2.2 Trust.....	239
5.2.2.3 Skills / Expertise	240
5.2.2.4 Supply Chain Understanding / Knowledge	245
5.2.3 Redundancy	249
5.2.3.1 Holding of Buffer / Safety Stock	249
5.2.3.2 Multi-sourcing	250
5.2.3.3 Workforce Redundancy	253
5.2.3.4 Alternative Modes and Routes of Transportation	253
5.2.3.5 Waiting Lists.....	254

5.3 Structure	254
5.3.1 Configuration	254
5.3.1.1 Scope	254
5.3.1.2 Density	254
5.3.1.3 Complexity	255
5.3.1.4 Criticality	256
5.3.1.5 Clustering	256
5.3.2 Visibility	258
5.3.3 Velocity	259
5.4 Management / Decision-making	259
5.4.1 Governance	259
5.4.1.1 Management Teams / Committee Boards	260
5.4.1.2 Delegated Responsibility	261
5.4.1.2.1 Volunteers	261
5.4.1.2.2 Members	262
5.4.1.2.3 Local Communities.....	264
5.4.1.3 Multi-Stakeholder Governance Structure	264
5.4.2 Human Resource Management	266
5.4.2.1 Recruitment	266
5.4.2.2 Training	269

5.4.2.3 Managing a Hybrid Workforce	271
5.4.3 Planning	273
5.4.3.1 Market Research	273
5.4.3.2 Financial Planning	278
5.4.3.3 Operational Planning	280
5.4.3.4 Upscaling	284
5.4.4 Risk Management	285
5.4.4.1 Assessment of Vulnerabilities	286
5.4.4.2 Risks	289
5.4.4.3 Risk Management Strategies.....	290
5.4.4.3.1 Managing Risk: Food Supply	291
5.4.4.3.2 Managing Risk: Food Safety	292
5.4.4.3.3 Managing Risk: COVID-19	293
5.4.4.3.4 Managing Risk: Inequality and Health Problems.....	296
5.4.4.3.5 Managing Risk: Sunk Time & Cost	296
5.4.4.3.6 Managing Risk: Mission Drift	297
5.4.5 Culture	298
5.5 Flexibility	299
5.5.1 Operational Flexibility	300
5.5.1.1 Process Flexibility	300

5.5.1.2 Conversion Flexibility	301
5.5.1.3 Flexible Labour Arrangements.....	302
5.5.1.4 Distribution and Customer-Facing Activities	302
5.5.2 Sourcing Flexibility.....	303
5.5.2.1 Multi-Sourcing	303
5.5.2.2 Flexible Contracts Arrangements	303
5.6 Agility	304
5.7 Network Creation	304
5.7.1 Step 1: Formulation of the Food Poverty Working Group	305
5.7.2 Step 2: Introduction of the Franchise Model	305
5.7.3 Step 3: Market Research and CFRP Trial	306
5.7.4 Step 4: Network Expansion.....	307
5.7.5 Step 5: Fostering Support and Collaboration	308
5.8 Summary	309
CHAPTER 6: DISCUSSION & CONCLUSION	310
6.1 Introduction	310
6.2 Building Social Supply Chain Resilience	310
6.3 Research Implications	342
6.3.1 Theoretical Contributions	342
6.3.2 Practical Implications	344

6.3.3 Policy Implications	345
6.4 Research Limitations.....	346
6.5 Opportunities for Further Research	348
6.6 Closing Remarks	349
REFERENCES	351
APPENDICES	385
Appendix 1: Research Ethics Approval	385
Appendix 2: Focus Group Consent Correspondence	386
Appendix 3: Example of Meeting Observation Notes	387
Appendix 4: Interview Protocol.....	390
Appendix 5: Interview Topic Checklist	391
Appendix 6: Focus Group 1 Structure	394
Appendix 7: Focus Group 2 Structure	395
Appendix 8: Focus Group 3 Structure	396
Appendix 9: Focus Group 4 & 5 Structure	397
Appendix 10: Documentary Evidence – Meeting Minutes (Anonymised)	398
Appendix 11: Documentary Evidence – Email Correspondence (Anonymised).....	401

List of Tables

Table 1: LR overview	11
Table 2: Types of network research	17
Table 3: Resilience disciplines	25
Table 4: Definitions of SCRes.	28
Table 5: Phases of SCRes	33
Table 6: Strategies for developing / building SCRes	34
Table 7: Forms of collaboration	37
Table 8: Forms of flexibility.	41
Table 9: Forms of redundancy.	45
Table 10: Elements of SCRes	49
Table 11: Learning mechanisms for SCRes	71
Table 12: Diversity of SE	86
Table 13: EMES dimensions of SE	96
Table 14: Commonalities between the SCRes and SE literature	106
Table 15: SE collaborators	130
Table 16: Methods of data collection in AR	161
Table 17: Summary of trustworthiness	165
Table 18: Summary of data collection activities	171
Table 19: Literature-informed questioning examples	180
Table 20: Example of coding methods	191
Table 21: CFRPs overview	201
Table 22: 'Collaboration' Findings overview	312

Table 23: 'Human Resources' Findings overview	313
Table 24: 'Finance' Findings overview	315
Table 25: 'Materials' Findings overview	316
Table 26: 'Transport' Findings overview	317
Table 27: 'I.T.' Findings overview	318
Table 28: 'Social Capital' Findings overview.....	320
Table 29: 'Trust' Findings overview	321
Table 30: 'Skills / Expertise' Findings overview	322
Table 31: 'SC Understanding / Knowledge' Findings overview	323
Table 32: 'Redundancy' Findings overview	325
Table 33: 'Configuration' Findings overview.....	326
Table 34: 'Visibility' Findings overview	328
Table 35: 'Velocity' Findings overview.....	329
Table 36: 'Governance' Findings overview	330
Table 37: 'HRM; Findings overview.....	331
Table 38: 'Planning' Findings overview.....	332
Table 39: 'Risk Management' Findings overview.....	334
Table 40: 'Culture' Findings overview	335
Table 41: 'Flexibility' Findings overview	336
Table 42: 'Agility' Findings overview	337

List of Figures

Figure 1: Research focus.	8
Figure 2: Illustration of structural equivalence.....	16
Figure 3: Illustration of structural holes.....	16
Figure 4: Map of interconnections between SCRes strategies and elements.	52
Figure 5: SC vulnerability matrix.	64
Figure 6: Alternative food SC vulnerability matrix	66
Figure 7: Conceptual framework for SCRes.	75
Figure 8: Food provision initiatives.....	84
Figure 9: Elements of SE.	105
Figure 10: UK SE Places.	136
Figure 11: Conceptual framework for SOSCRes.	140
Figure 12: Social food supply network.....	169
Figure 13: Data collection timeline.....	175
Figure 14: Data analysis process	189
Figure 15: Pre-determined codes.....	190
Figure 16: Holistic coding example – The social entrepreneur.....	191
Figure 17: Process coding example – Social distancing	193
Figure 18: Values coding example - Motivation	194
Figure 19: Simultaneous coding example – Multi-sourcing / finance / COVID.....	194
Figure 20: Second Cycle coding example - Finance	195

Figure 21: Community food provision house model	204
Figure 22: Map of network ties contributing to SOSCRes.	217
Figure 23: Network creation: Step 1	305
Figure 24: Network creation: Step 2	306
Figure 25: Network creation: Step 3	307
Figure 26: Network creation: Step 4	308
Figure 27: Network creation: Step 5	309
Figure 28: Key focal SE stakeholder relationships.	311
Figure 29: Empirical framework for SOSCRes.	338

Abbreviations

AC -	Academic Institution
AR -	Action Research
AFSC -	Agri-Food Supply Chain
CCL -	Cold Chain Logistics
CFRN -	Community Food Retail Network
CFRP -	Community Food Retail Project
CSR -	Corporate Social Responsibility
CTF -	COVID-19 Task Force
DETR -	Department for Environment, Transport, and the Regions
DTI -	Department of Trade and Industry
FF -	FranchiseFood
FPWG -	Food Poverty Working Group
JIT -	Just-in-Time
HRM -	Human Resource Management
LR -	Literature Review
NPO -	Non-Profit Organisation
PEST -	Political, Economic, Social, and Technological
PPSC -	Perishable Products Supply Chain
PSO -	Private Sector Organisation
RMC -	Risk Management Culture
RQ -	Research Question
SC -	Supply Chain
SCM -	Supply Chain Management
SCRes -	Supply Chain Resilience
SE -	Social Enterprise
SEC -	Social Enterprise Coalition
SFPC -	Sustainable Food Places Coordinator
SFR -	Surplus Food Redistribution
SME -	Small-and-Medium-Sized Enterprise
SNA -	Social Network Analysis

SNT - Social Network Theory
SOSC - Social Supply Chain
SOSCRes - Social Supply Chain Resilience
TSSA - Third Sector Support Agency
UoA - Unit of Analysis

CHAPTER 1: INTRODUCTION

1.1 Topic Overview

This research concerns the concept of Supply Chain Resilience (SCRes), defined as the ability to “*prepare for unexpected events, respond to disruptions, and recover from them by maintaining continuity of operations at the desired level*” (Ponomarov and Holcomb, 2009, p.131). This study focuses on how SCRes can be built in the context of the supply of food in disadvantaged communities via social enterprises (SEs). Such enterprises can be defined as organisations whose primary activity involves the trading of goods and services to achieve primarily social and / or environmental objectives (Peattie and Morley, 2008a), referred to here as Social Supply Chain Resilience.

1.2 Research Rationale

The United Kingdom currently grapples with a food poverty crisis affecting an estimated 9.7 million people (The Food Foundation 2023). Defined as “*the inability to afford, or to have access to, food to make up a healthy diet*” (Department of Health, cited in Sustain 2016, para. 9), food poverty (also referred to as ‘food insecurity’), does not appear to discriminate, having been found to effect children, the elderly, and those in employment (Sustain 2016; End Hunger UK 2019; The Trussell Trust 2019; The Food Foundation 2023). Underpinning the issue of food poverty is an issue of access (Wang et al. 2018), with a prominent cause of food poverty being ‘food deserts’. Food deserts are areas where people have limited access to healthy and affordable fresh food (Wang et al. 2018), often characterised by inadequate transports links (Reisig and Hobbiss 2000) and a lack of local supermarkets (Wright et al. 2016). Instead of supermarkets, food deserts are typically served only by convenience stores and fast-food restaurants, both of which providing limited options in the way of healthy food (Wright et al. 2016). Consequently, food

poverty can lead to a myriad of diet-related health risks, and even social exclusion (Wrigley 2002; Food Research & Action Center 2017). The SE sector has grown both in prominence and importance as force for tackling pressing societal, environmental, and economic issues (Peattie and Morley 2008a), such as food poverty, with an extensive network of SE and charity-run food provision services being established across the UK (Wang et al. 2018; End Hunger UK 2019).

While initial explorations of these supply chains (SCs) tend to focus on how SEs can establish and manage them (Pullman et al. 2018; Longoni et al. 2019), the question of how to make them resilient remains under-explored. The relative infancy of the SE sector, coupled with the positive correlation between the age of a SE and its ability to make a profit (Social Enterprise UK 2019; 2021; 2023a), suggests that it is necessary for research to be undertaken to explore how SE-led SCs can become resilient, thus supporting their long-term survival as well as the long-term combating of food poverty. Despite there being much literature and well-established theories relating to SCRes, most of it derives from for-profit contexts. This is problematic given that it is becoming increasingly recognised that *"conventional models of enterprise are not well suited to explaining social enterprise"* (Diochon and Anderson 2011, p. 109). While SEs play a critical role in addressing food poverty, they typically face resource disparities compared to their commercial counterparts (Doherty et al. 2014), along with unique challenges related to their unconventional nature as 'hybrid organisations' (Pache and Santos 2013; Pullman et al. 2018; White et al. 2022). Therefore, for effective social food supply chain management there is a need to reconceptualise SCRes within a SE context, referred to here as 'social supply chain resilience'. Consequently, the following primary research question (RQ) was formulated and addressed:

"How can resilience be built into alternative food supply chains that help alleviate the food poverty problem?"

This question is underpinned by three research objectives: (1) to identify how SCs create resiliency, (2) to identify the key elements of SE, and (3) to establish what SCRes looks like in a SE context. In achieving these research objectives and addressing the primary RQ, this study addresses a fundamental gap in operations and SC management research that reflects an underdeveloped focus on SEs (Pullman et al. 2018; Longoni et al. 2019).

1.3 Prior Research

The SCRes literature is vast and well-established. At the forefront of this literature is the work of Christopher and Peck (2004). Christopher and Peck (2004) present four principles for creating SCRes; (1) SC (re)engineering, (2) SC collaboration, (3) agility, and (4) a risk management culture (RMC). Firstly, believing that SCs are commonly designed with cost and / or customer service in mind, Christopher and Peck (2004) argue that SCs should be engineered to prioritise resilience. According to Christopher and Peck (2004), this involves having an appropriate supply strategy and developing SC understanding. SC understanding is defined as *"an understanding of the network that connects the business to its suppliers and their and to its downstream customers"* (Christopher and Peck 2004, p. 7). Regarding supply, Christopher and Peck (2004) advocate for multi-sourcing and the strategic holding of surplus stock. Secondly, it is argued that elevated levels of collaboration throughout the SC can help mitigate risks (Christopher and Peck 2004). Underpinning this argument is the belief that with greater information sharing comes reduced uncertainty (Christopher and Peck 2004). Thirdly, agility is broadly defined as *"the ability to respond to unpredictable changes in demand or supply"* (Christopher and Peck 2004,

p. 10). Christopher and Peck (2004, p. 10) argues that agility is built upon SC visibility, that is, "*the ability to see from one end of the pipeline to the other*", and SC velocity, that is, "*distance over time*". An RMC can be created by integrating risk assessment into decision making at all levels (Christopher and Peck 2004).

In exploring the role of collaboration in SCRes, Scholten and Schilder (2015) found a positive correlation between collaboration and greater visibility, velocity, and flexibility. Concluding that the more collaboration throughout a SC, the more resilient it is (Scholten and Schilder 2015). According to Scholten and Schilder (2015, p. 478-479), this collaboration comes in four forms; (1) "*Information-sharing and collaborative communication*", (2) "*Joint relationship effort*", (3) "*Mutual dependency*" and (4) "*Joint knowledge creation*".

Tukamuhabwa et al. (2015) conducted a systematic review of the SCRes literature in which they identified key strategies for building SCRes. These were flexibility, redundancy, collaboration, and agility. In addition to the strategies for building SCRes, Tukamuhabwa et al. (2015) identified gaps in the literature as well as areas requiring further investigation.

Tukamuhabwa et al. (2015) calls for more longitudinal studies to be conducted into SCRes to understand how it evolves. This is coupled with further research into small-and-medium-sized enterprises (SMEs).

Furthermore, Tukamuhabwa et al. (2015) suggests that SCRes is a network phenomenon, and as such, calls for researchers to go broadening their unit of analysis beyond individual organisations.

1.4 Methodology

Underpinned by Social Network Theory, this study conducts Action Research into a social food supply chain network operating throughout South Wales. A longitudinal qualitative multi-method approach to data

collection was used, consisting of observations, interviews, focus groups and document analysis over a 33-month period. Data was analysed using a form of pattern matching called explanation building (Yin 2018). This involved comparing findings from the social food supply chain network against that of a conceptual framework for social supply chain resilience, which was derived from an inter-disciplinary review of the supply chain resilience and social enterprise literature. This resulted in validation and refinement of the conceptual framework, thus explaining the development of social supply chain resilience through a set of causal sequences.

1.5 Thesis Statement

This thesis conceptualises supply chain resilience within a social enterprise context, with a particular focus on social enterprises with a social mission to tackle food poverty. Therefore, addressing a gap in operations and supply chain management research that has seen an underdeveloped focus on social enterprises (Pullman et al. 2018; Longoni et al. 2019).

1.6 Thesis Outline

The remainder of this thesis is structured as follows: Chapter 2 presents the literature review, establishing the theoretical lens through which the study was conducted, and exploring the concepts of SCRes and SE. This chapter concludes with the presentation of a conceptual framework for social supply chain resilience. Chapter 3 provides an account of the research philosophy and methodology, including a justification for the data collection and analysis strategies adopted. Two findings' chapters are then presented. Chapter 4 presents a 'house model' co-developed with participants which depicts the stakeholders, structure, and processes involved in community food provision within the case network. Chapter 5 presents a comprehensive analysis of the case network. This includes an examination of the network's ties, including how these ties benefitted

both individual nodes and the entire network in the pursuit of social supply chain resilience. This is done in comparison to the conceptual framework presented in Chapter 2. Furthermore, having examined the network's ties, an explanation of how a single organisation can orchestrate the creation of a network conducive to the creation of social supply chain resilience is also provided. This research concludes with a 'discussion and conclusion' chapter (6). This chapter reflects holistically on the network analysis, providing an empirical framework for social supply chain resilience, coupled with a discussion of this study's contributions and limitations, as well as opportunities for future research.

CHAPTER 2: LITERATURE REVIEW

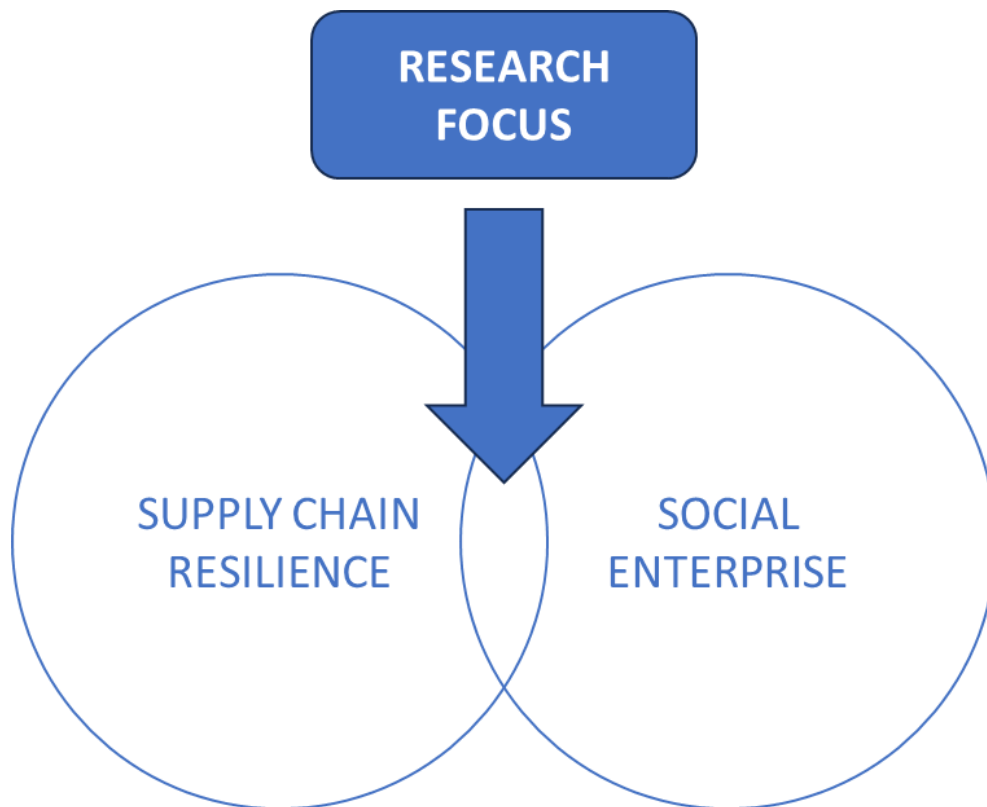
2.1 Introduction

This chapter presents the literature review, coupled with the theoretical lens through which this research is conducted. The chapter begins by explaining what a narrative literature review is, as well as providing justification for adopting such an approach. This is followed by outlining the literature review process implemented, including presenting the research question and objectives, outlining the search strings used, and the inclusion and exclusion criteria set. From here, Social Network Theory is presented as the theoretical lens underpinning the research. As an inter-disciplinary literature review, this chapter presents reviews of two distinct literatures, (1) supply chain resilience and (2) social enterprise. A review of the supply chain resilience literature is presented first, as the larger, and more mature literature. This review (1) explores several strategies for developing supply chain resilience, along with elements of these strategies. This review (1) concludes with the presentation of a conceptual framework for supply chain resilience. The second review (2) explores key elements of social enterprise as a business model. The chapter concludes by integrating these key elements into the conceptual framework for supply chain resilience, thus presenting a conceptual framework for social supply chain resilience.

2.2 A Narrative Literature Review

A narrative approach to the literature review (LR) process, that is, a “*comprehensive narrative synthesis of previous published information*” (Green et al. 2006, p. 103), was adopted. This is in contrast to a systematic LR, which seeks to obtain all primary research on a topic (Green et al. 2006). This was due to the interdisciplinary nature of this research, having looked to draw from both the SCRes and SE literature, with the focus of the research laying between the two (Figure 1).

Figure 1: Research focus.



Narrative LRs are considered valuable for interdisciplinary research topics such as this due to their flexibility (Sukhera 2022). This flexibility enables researchers to synthesise research findings from diverse literatures in a cohesive manner (Sukhera 2022). Free from the “*narrow focus and prescribed methods of the systematic review*” (Collins and Fauser 2005, p. 103), the flexibility of narrative reviews allows for comprehensive and nuanced coverage of the relevant topic (Collins and Fauser 2005; Green et al. 2006; Sukhera 2022). This can provide a deeper understanding of complex topics through exploring the historical context, theoretical development, and practical implications of the research (Collins and Fauser 2005; Green et al. 2006). Narrative reviews can be tailored to the unique characteristics of interdisciplinary research topics, accounting for multiple perspectives and methodologies (Sukhera 2022). Furthermore, interdisciplinary research often involves integrating findings from different

disciplines to address complex problems or phenomena, as is the case here. Moreover, narrative reviews can effectively contextualize and integrate these findings, and can often combine discussions of theory and context (Green et al. 2006), highlighting the common threads and potential synergies between different approaches. This can lead to a more holistic understanding of the research topic. Consequently, narrative reviews are argued to be useful for exploring under-researched topics as well as providing new insights into well-developed research fields (Sukhera 2022). This narrative LR applies a well-established concept (SCRes) to an emerging context (SE).

Hence, the review involved judging the relevance and value of the findings and conclusions of studies from both SCRes and SE literature. This included considering how they relate to one another and how their interrelations can be synthesised to aid the development of a conceptual framework. Narrative methodological approaches are well-suited to this type of evaluation research (Hammersley 2001).

Narrative reviews are not just 'synthesising data' and acting to 'apply replicable procedure' (Hammersley 2001), requiring reviewers to draw upon their tacit knowledge and present findings to cater to a specific target audience. Jones and Gatrell (2014) assert that all types of reviews have their remits, and narrative reviews can produce valuable insights into a given literature.

This narrative LR was based upon three research objectives in response to the primary RQ, "*How can resilience be built into alternative food supply chains that help alleviate the food poverty problem?*". These research objectives were: (1) to identify how SCs create resiliency, (2) to identify the key elements of SE, and (3) to establish what SCRes looks like in a SE context. This enabled the development of inclusion and exclusion criteria to identify papers relating to these questions. Additionally, academic

specialists in the applicable fields were consulted to guide the review (Green et al. 2006).

The review was structured and discussed sequentially; however, the review process was iterative and reflective, allowing the researcher to visit and revisit the data to connect them with emerging insights, leading to a refined focus, and understanding. The larger and more mature SCRes literature was reviewed first to establish a well-supported framework for SCRes. This was followed by a review of the more emerging SE literature to identify aspects of SE that are relevant to SCRes.

The LR (Table 1) was conducted with the support of multiple databases, namely, (1) Google Scholar, (2) Emerald Insight and (3) Wiley Online Library. When reviewing the SCRes and SE literature, a total of 12 search strings were used, 6 relating to each literature (Table 1), across the 3 databases. These search strings were used as it was felt they best reflected the research objectives of the LR. Furthermore, it was felt that these search strings would yield the necessary knowledge base to be able to revisit the literature with greater precision, should it be required, using an iterative process to expand understanding of underdeveloped areas. The scope of these searches was restricted to the first 100 results, based on relevance. This generated 3600 results (including duplicate papers), 1800 papers pertaining to each literature. These results then went through a title and abstract screen to determine applicability (Table 1). This saw a total of 66 papers related to SCRes and 36 to SE reviewed in full. The date of these papers ranged from 2004 to 2020.

Table 1: LR overview

Inclusion Criteria	Details	Total Papers
Database (D)	1. Google Scholar 2. Emerald Insight 3. Wiley Online Library	
Search Strings	SCRes literature: <i>"Supply Chain Resilience";</i> <i>"Resilient Supply Chains";</i> <i>"Building Supply Chain Resilience";</i> <i>"Building Resilient Supply Chains";</i> <i>"Creating Supply Chain Resilience";</i> <i>"Creating Resilient Supply Chains".</i> Total Search Strings (TSS) = 6	1,800 (6(TSS)x3(D)x100(Results based on relevance))
	SE literature: <i>"Social Enterprise";</i> <i>"Conceptualising Social Enterprise";</i> <i>"Social Enterprise Concept";</i> <i>"Social Enterprise Success";</i> <i>"Social Enterprise Failure";</i> <i>"Not-for-Profit".</i> Total Search Strings (TSS) = 6	1,800 (6(TSS)x3(D)x100(Results based on relevance))
Applicability	Title and Abstract Review:	
	SCRes: Literature illustrating concepts and elements of SCRes	66
	SE: Literature illustrating concepts and elements of SEs.	36

Exclusion Criteria	Details	
No Relevance	The scope of this LR was the top 100 results for each database search based on relevance. Therefore, those outside of the top 100 were dismissed.	
Duplicates	Duplicate results were removed.	
Language	Studies published in languages other than English were dismissed.	

2.3 Theoretical Lens

Theory has been defined as “*a coherent description, explanation and representation of observed or experienced phenomena*” (Gioia and Pitre 1990, cited in Walker et al. 2015, p. 1183). Chicksand et al. (2012) state that theory is necessary to understand the complex nature of organisational operations. Notable theoretical lens used throughout the SCRes literature include the resource-based view, systems theory, institutional theory, contingency theory, and complex adaptive theory (Scholten et al. 2020). However, this research adopts Social Network Theory as its theoretical lens.

2.3.1 Social Network Theory

First introduced during the 1970s, Social Network Theory (SNT) “*considers the relationships between (social) entities in a network*” (Walker et al. 2015, p. 1193) through examining how a given network’s structure and processes generates outcomes for a ‘node’ within it, or even for the entire network (Borgatti and Halgin 2011). Within a SC context, SNT attempts to describe the relationships in which SC actors, including

suppliers, customers, and manufacturers, are engaged (Wellenbrock 2013). Alternatively, in an entrepreneurship context, the network (often referred to as a social network) is defined as the inter-relationship between an entrepreneur (the ego) and their contacts (the alters), typically involving family and friends (Surin and Wahab 2013).

2.3.1.1 Types of Networks

Kadushin (2004) present 3 types of networks; (1) Ego-centric, (2) Socio-centric and (3) Open-system. Ego-centric networks consist of: (a) a focal actor, called an ego, (b) a set of actors that have any sort of tie to the ego, called alters and (c) all ties among alters and between the ego and such alters (Kadushin 2004; Borgatti and Li 2009). Socio-centric networks are those present within closed systems, such as workers within an organisation, while open-system networks are the opposite, where it is not clear where network boundaries lay (Kadushin 2004).

2.3.1.2 Network Ties

Borgatti and Li (2009) divide the types of ties within a network into two styles: continuous and discrete. Continuous ties are those that are present for the entirety of the relationship, such as a marriage, while discrete ties are those built on a series of discrete events, which can be tallied, such as the number of times an email is sent between two actors (Borgatti and Li 2009). In addition to this, Borgatti and Ofem (2011) propose five types of ties that may be present between nodes within a network; (1) similarities, (2) social relations, (3) mental relations, (4) interactions and (5) flows.

Firstly, 'similarities' include spatial and temporal proximity through co-location, co-membership of the same group and the sharing of attributes, such as race (Borgatti and Li 2009; Borgatti and Halgin 2011; Borgatti and Ofem 2011). Borgatti and Li (2009) defines similarities as pre-social,

stating that, while they do not necessarily mean actors know each other, there is a heightened opportunity for them to establish additional ties as a result (Borgatti and Halgin 2011). This can be attributed to the notions of propinquity and homophily (Kadushin 2004). Propinquity argues that all else being equal, nodes are more likely to have ties if they are close to one another geographically (Kadushin 2004; Borgatti and Ofem 2011), while Borgatti and Ofem (2011, p. 21) define homophily as "*the tendency for people to form positive ties with people who are like themselves on socially significant attributes*" (Kadushin 2004).

Secondly, social relations refer to ongoing ties of kinship and other role-based relations, such as friendship (Borgatti and Li 2009; Borgatti and Ofem 2011). Next is mental relations, these are the perceptions of, and attitude towards, others, including recognising and liking or disliking them. Such relations are often private and unobservable (Borgatti and Ofem 2011). Fourth is interactions, these are discrete events which can be tallied over time. Such interactions are usually enabled by social / mental relations, i.e., friends (a social relation) give one another advice (an interaction) (Borgatti and Ofem 2011). Finally, flows refer to both tangible and intangible things, such as information and inventory (Jaafar et al. 2009), which are transferred via interactions, i.e., information is transmitted via communication.

In practice, flows are not typically measured, rather inferred from data on interactions and relations (Borgatti and Li 2009; Borgatti and Ofem 2011). Furthermore, Borgatti and Halgin (2011, p. 1172) differentiates between "*true path*" and "*trail*" trajectory flows. If a flow does not encounter a node for a second time following initial contact, then it is said to have a "*true path*" trajectory (Borgatti and Halgin 2011, p. 1172). Alternatively, flows which pass through a node numerous times are said to have a "*trail*" trajectory (Borgatti and Halgin 2011, p. 1172).

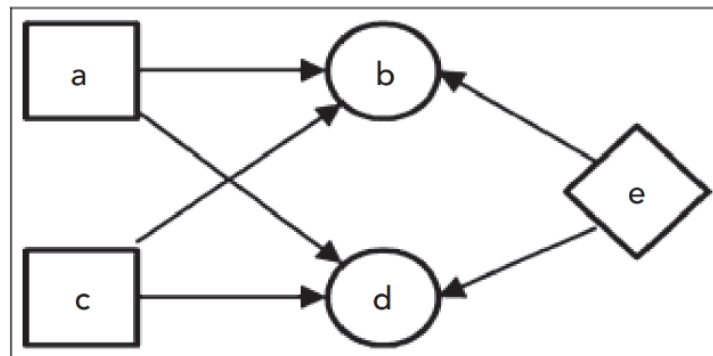
2.3.1.3 A Social Network Theory Approach to Research

All network research can be classified as endeavouring to answer one of two kinds of RQ: (1) the homogeneity question, and (2) the performance question (Borgatti and Li 2009; Borgatti and Halgin 2011). The homogeneity question sees research seek to answer why actors share similar characteristics, whereas the performance question sees research seek to explain why some actors experience better outcomes than others, whether that be in performance or in reward (Borgatti and Li 2009; Borgatti and Halgin 2011). This has seen network research divided into two domains of inquiry based on whether it is the antecedents or consequences of network characteristics that are being examined (Borgatti and Halgin 2011; Borgatti and Ofem 2011). Those studies which examine the antecedents are said to belong to the 'theory of networks' domain, attempting to provide explanations as to why networks, or the nodes within them, have the structure or hold the position they do (Borgatti and Halgin 2011; Borgatti and Ofem 2011). Alternatively, those which examine the consequences of network structure are situated within the 'Network Theory' domain, attempting to explain certain outcomes as the result of the network's properties, such as being centrally located or having many ties (Borgatti and Halgin 2011).

In both domains, theorising occurs at three levels: (1) the dyad, (2) the node, and (3) the network (Borgatti and Ofem 2011). At the dyad level, only the properties of a pair of nodes, or actors, are considered. While network information is always at the dyadic level, dyad-specific concepts include "*geodesic distance*", that is the number of links within the shortest path between nodes, and "*structural equivalence*", that is to what extent two nodes have ties to the same third parties (Figure 2) (Borgatti and Ofem 2011, p. 21).

Figure 2: Illustration of structural equivalence.

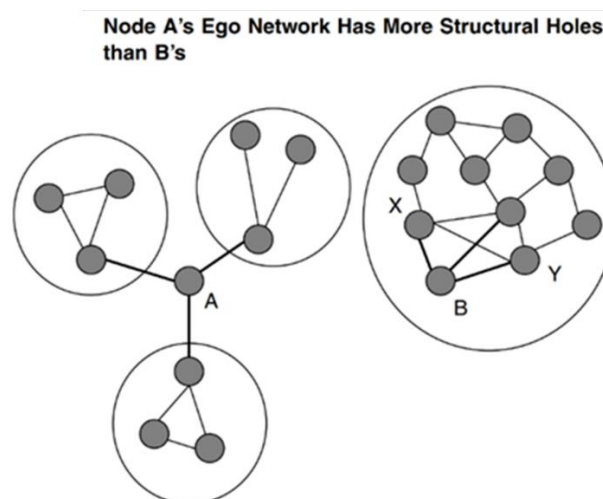
Nodes A and C Are Structurally Equivalent, as Are B and D



Source: Borgatti and Li (2009)

At the node level, how and where a node is connected is the focus. Concepts used at the node level include 'network size' and how many other nodes a node is tied to, 'centrality', that is, the position of a node within network and 'structural holes'. Focusing on egocentric networks, 'structural holes' concerns "the number of nodes that a focal node is connected to that are not connected to each other" (Figure 3) (Borgatti and Ofem 2011, p. 21; Borgatti and Halgin 2011).

Figure 3: Illustration of structural holes.



Source: Borgatti and Halgin (2011)

Burt (1992) argues that, by having unconnected alters, an ego will receive more non-redundant information compared to those whose alters share ties among themselves. Concluding that it is more beneficial for an

ego to put effort into establishing ties with alters that are not connected to one another, and thus likely to provide independent information and views than the mutual coordination that accompanies closed networks (Burt 1992; Borgatti and Li 2009; Borgatti and Halgin 2011; Fanfan 2011). Finally, concepts at the network level include 'network density' and the extent to which all pairs of nodes within the network are tied to one another, and 'centralisation', that is, the degree to which a network revolves around an individual node (Borgatti and Ofem 2011).

Borgatti and Ofem (2011, p. 22) propose six types of network research based on domain and level of analysis (Table 2).

Table 2: Types of network research

		Level of Analysis		
		Dyad	Node	Network
Domain	Theory of Networks	" <i>Partner Selection</i> "	" <i>Positional Achievement</i> "	" <i>Network Structuring</i> "
	'Network Theory'	"Contagion / Diffusion"	" <i>Individual Social Capital</i> "	" <i>Group Social Capital</i> "

- **Partner Selection:** Conducted at the dyad level, this research explains relationships between pairs of nodes.
- **Positional Achievement:** Conducted at the node level, this research explains a node's structural characteristics, like its structural holes.
- **Network Structuring:** Conducted at the network level, this research explains network features, such as its density.

- **Contagion / Diffusion:** Conducted at the dyad level, this research explains outcomes by studying social ties between two nodes.
- **Individual Social Capital:** Conducted at the node level, this research explores results based on occupying different structural positions.
- **Group Social Capital:** Conducted at the network level, this research examines the consequences of different network structures in explaining outcomes.

Borgatti and Ofem (2011) identify two prominent strategies for data collection under SNT. The first, whole, or full network analysis, sees a set of nodes selected and the ties between all nodes in the sample measured (Borgatti and Ofem 2011). The second strategy, egocentric, or ego network analysis, sees a set of focal nodes (egos), selected from the population (Kadushin 2004; Borgatti and Li 2009). Individual egos are then asked to provide the names and characteristics of those in their network (alters), coupled with their relationship with each. Additionally, some egocentric network studies ask respondents about the relationships between alters (Borgatti and Ofem 2011). Full network analysis sees the collection of data relating to a few ties among many pairs of nodes, while egocentric network analysis sees the collection of a considerable number of ties between a small number of focal nodes (Borgatti and Ofem 2011). In practice, Borgatti and Li (2009) note that many studies adopt an egocentric approach to data collection, as opposed to full network analysis.

2.3.1.4 Justification for a Social Network Theory Approach

Borgatti and Ofem (2011, p. 29) argue that organisations are akin to social networks, stating that "*organisations are inherently relational*"

social systems comprising of individuals with diverse interests and objectives, which communicate and make decisions. In addition to this, organisations operate within networks alongside other organisations (Nohria and Eccles 1992, cited in Pryke 2005; Borgatti and Ofem 2011). Therefore, it is argued here that to fully understand an organisation it is necessary for them to be analysed from a network perspective (Nohria and Eccles 1992, cited in Pryke 2005; Borgatti and Ofem 2011). The adoption of a network perspective here is further supported by Galaskiewicz (2011), who argues that SCs should be viewed as a network (Ketchan and Hult 2007), opposed to a linear series of relationships between suppliers and customers. This is supported by Cooper et al. (1997, p. 9) who state:

for most manufacturers, the supply chain looks less like a pipeline or chain than an uprooted tree. The question is how many of these branches and roots need to be managed.

SNT accommodates for this by expanding the focus of study beyond the individual, and even the dyad level, to the network level (Carter et al. 2007; Holman 2008; Patil et al. 2023). In doing so, SNT represents an alternative perspective within Supply Chain Management (SCM) research to one that traditionally sees organisations considered as independent entities (Carter et al. 2007) which look to develop resources, improve market position, and gain competitive advantage (Wellenbrock 2013). This is supported by Salancik (1995), cited in Holman (2008, p. 528), who, continuing with the tree metaphors, state “*network analysis corrects a tendency in organisational theory to focus on the trees rather than the forest, on the actions of individual organisations rather than on the organisation of their actions*”. Consequently, it is argued that analysing relationships between nodes within a network can yield findings that would not be achievable through conventional SCM methodologies (Carter et al. 2007).

This has seen several authors advocate for the study of SCs using a SNT approach (Choi et al. 2001; Ellram et al. 2006; Carter et al. 2007; Ketchan and Hult 2007; Borgatti and Li 2009; Kim et al. 2011). In particular, Ketchan and Hult (2007) emphasises how SNT can provide rich insight into 'best value supply chains', that is, SCs distinguishable for their ability to pursue multiple competitive priorities. This is particularly relevant given that alternative food SCs prioritise both cost reduction and responsiveness in their pursuit of tackling food poverty.

The application of SNT throughout the SCM literature has seen researchers conduct empirical tests on case firms within a network that has gained some sort of competitive advantage (Lamming et al. 2000, cited in Wellenbrock 2013). For example, Yee and Platts (2006), cited in Wellenbrock (2013), sought to design a framework for analysing how organisations embedded within a network collaborate. To do this, they conducted a longitudinal case study into a supply network consisting of 20 firms using semi-structured interviews. The resulting framework facilitated understanding of how SC networks should be managed.

In discussing the applicability of network analysis to SCM research, Borgatti and Li (2009) note that SCM consists of both hard and soft components, i.e., technical and human. It is argued that network analysis is best applied to the soft side of SCM, in:

helping to understand how patterns of personal relationships translate to competitive advantage through diffusion of information, social control of opportunism, coordination, and aid, and so on (Borgatti and Li 2009, p. 6).

It is the understanding of such patterns, and how they translate into resilience within alternative food SCs, that this research seeks to

examine, supporting the applicability of SNT in this context. A SNT approach was also adopted due to its adaptability. SNT has been applied in a range of disciplines including, but not limited to: Sociology, Psychology, (Luke and Harris 2007; Scott 2011), Biology and Criminology (Borgatti et al. 2009; Borgatti and Ofem 2011). Such diversity in application can be attributed to its accommodation of multi-level analysis (individuals, teams, departments, organisations, etc), "*making it possible to examine nearly any type of social system characterised by relations between entities*" (Borgatti and Ofem (2011, p. 18). Accordingly, Borgatti et al. (2009, p. 892) argue that SNT can provide "*explanations for a myriad of social phenomena*". This adaptability has led authors to argue that SNT has potential for integrating SCM into other streams of management research (Borgatti and Li 2009; Kim et al. 2011). This was of significant importance given that this study seeks to bring together two diverse and contrasting streams of management research in SCM and SE.

The adoption of a SNT approach is further supported by its applicability to the SE context. Again, as an organisation, SEs can be considered networks which also operate within networks alongside other organisations (Nohria and Eccles 1992, cited in Pryke 2005; Borgatti and Ofem 2011). However, the adoption of a SNT approach is argued to be of greater applicability in a SE context compared to that of traditional organisations. This is attributed to the resource disparities SEs typically face compared to their commercial counterparts (Doherty et al. 2014; Dufays and Huybrechts 2014), resulting in a greater dependency on network ties. For example, Jaafar et al. (2009) found that entrepreneurs rely on their personal and informal business networks to establish their enterprises. Alternatively, the social networks of social entrepreneurs have been found to enhance their entrepreneurial abilities by enabling the flow of resources like money, materials, and knowledge to and from entrepreneurs, expanding their human, financial, and technical capabilities (Borgatti and Li 2009; Fanfan 2011). Consequently, it is

argued that social network analysis (SNA) can provide valuable insight into the creation and development of social entrepreneurship (Dufays and Huybrechts 2014).

Finally, with SNA playing a prominent role in public health research (Luke and Harris 2007; Borgatti et al. 2009), it is believed to well suited to the food poverty context of this study. Luke and Harris (2007, p. 69) argue that SNA is “*uniquely suited to describing, exploring, and understanding structural and relational aspects of health*”, thus able to inform health policy and communication. For example, a network perspective has been used in the development of interventions combating the spread of infectious diseases as well as improving health care (Borgatti et al. 2009). Consequently, it is argued here that through a network lens, this research has the potential to inform food poverty legislation as well as aid in developing interventions for combating food poverty.

2.4 Supply Chain Resilience

2.4.1 Supply Chain Disruption

A SC can be understood as:

The network of organisations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate consumer (Christopher 1998, cited in Johnson et al. 2013, p. 324).

Such networks are prone to disruption (Christopher and Peck 2004; Brusset and Teller 2017; Dubey et al. 2019). Three quarters of businesses experience at least one disruption per year (The Business Continuity Institute 2018, cited in Scholten et al. 2020), while Bode and Wagner (2015), cited in Vanpoucke and Ellis (2019), claim the average firm

experiences as many as 14 SC disruptions annually. These “*non-routine events*” (The Business Continuity Institute 2013, cited in Scholten et al. 2019, p. 430) limit an organisation’s ability to serve end consumers by impacting the flow of goods, materials, and services (Scholten et al. 2020). The increased frequency of these disruptions has been linked to globalisation (Colicchia et al. 2010; Soni and Jain 2011; Ali et al. 2017a; 2017b; Chowdhury and Quaddus 2017; Ali and Golgeci 2019; Dubey et al. 2019), due to greater distances, multiple party involvement, international borders to be crossed, and larger customer bases (Colicchia et al. 2010). Other factors contributing to these disruptions include shorter product life cycles (Soni and Jain 2011; Ali and Golgeci 2019) and a focus on SC efficiency, due to the trade-off which exists between risk and efficiency. In pursuit of reduced costs or enhanced customer service, improved SC efficiency often involves the use of leaner practices (Maslaric et al. 2013) such as single-sourcing, low inventory capacity (Jain et al. 2017) and subsequent removal of slack from the SC. For example, the Just-in-Time (JIT) supply strategy involves regular, small orders “*from single sourced, local suppliers, with whom there is a close relationship rounded on mutual dependency and frequent communication*” (Waters-Fuller 1995, p. 232). However, relying on a single supplier increases SC vulnerability (Wagner and Bode 2006; Maslaric et al. 2013; Jain et al. 2017), that is, how susceptible a SC is to disruptions (Wagner and Bode 2006; Soni and Jain 2011; Mandal 2012). Should the supplier experience any issues, the organisation may be unable to source the necessary components or materials, resulting in halts in production, missed orders and lost revenue. For example, in 1997, a fire at a plant of Toyota’s single supplier of valves threatened to halt their operations (Nishiguchi and Beaudet 1998).

SC disruptions can originate from both internal and external sources (Ponomarov and Holcomb 2009; Pettit et al. 2010; Soni and Jain 2011; Manning and Soon 2016; Scholten et al. 2020). Internal sources include

fires or other incidents at manufacturing plants, loss of primary suppliers (Soni and Jain 2011), strikes (Sheffi and Rice 2005) and IT breakdown (Scholten et al. 2020), while external sources include natural disasters such as earthquakes and floods (Ponomarov and Holcomb 2009; Soni and Jain 2011; Sheffi 2015; Ali et al. 2017b; Ali and Golgeci 2019; Dubey et al. 2019; Scholten et al. 2020), industrial espionage, cyber-attacks, geopolitical events and terrorists attacks (Sheffi 2015). Saad and Gindy (1998), cited in Datta (2017) further categorise external disruptions into demand-related and supply-related. Demand-related disruptions involve unexpected spikes in orders and changes in forecast quantities. Supply-related disruptions range from delivery failures, including lateness and error (Datta 2017), to suppliers becoming bankrupt. Similarly, Pettit et al. (2013) categorise disruptions into three sets: (1) supply-side, (2) production, and (3) demand-side. Supply-side disruptions concern the creation, availability, and delivery of supplies when and where required. Production disruptions relate to the process of creating products and / or services, while demand-side disruptions concern sale and distribution of products to consumers (Pettit et al. 2013). These disruption categories appear to stem from Christopher and Peck (2004), who differentiate between disruptions: (1) internal to the firm, (2) external to the firm but internal to the SC, and (3) external to the network. The first two are further divided into supply and demand, like that of Saad and Gindy (1998), cited in Datta (2017) and Pettit et al (2013). The third category includes environmental disruptions (Christopher and Peck 2004).

Grounded in the belief that not all risks can be prevented (Soni and Jain 2011; Scholten et al. 2020), SCRes has become a prominent area of SCM research (Mandal 2012; Brusset and Teller 2017; Adobor and McMullen 2018; Ali and Golgeci 2019). Without resilience, disruption in one part of the SC can be disastrous for the entire operation (Tukamuhabwa et al. 2015).

2.4.2 Resilience

To create resilient communities, a clear understanding of resilience is required (Lew et al. 2016). Resilience is a concept, rooted in several disciplines (Table 3).

Table 3: Resilience disciplines

Discipline	Cited By
ENGINEERING	Kamalahmadi and Parast (2016); Wang et al. (2016); Ali et al. (2017a; 2017b); Adobor and McMullen (2018); Kochan and Nowicki (2018); Stone and Rahimifard (2018); Hendry et al. (2019)
PSYCHOLOGY	Ponomarov and Holcomb (2009); Ponis and Koronis (2012); Kamalahmadi and Parast (2016); Ali et al. (2017a; 2017b); Kochan and Nowicki (2018); Stone and Rahimifard (2018); Scholten et al. (2020)
ECOLOGY	Ponomarov and Holcomb (2009); Kamalahmadi and Parast (2016); Lew et al. (2016); Wang et al. (2016); Ali et al. (2017a; 2017b); Adobor and McMullen (2018); Kochan and Nowicki (2018); Stone and Rahimifard (2018); Hendry et al. (2019)
DISASTER MANAGEMENT	Kamalahmadi and Parast (2016); Lew et al. (2016); Ali et al. (2017a); Kochan and Nowicki (2018)

SCRes is primarily seen as a characteristic of a system, grounded in engineering and ecology perspectives (Scholten et al. 2020). Holling (1973), cited in Adobor and McMullen (2018, p. 1455), define engineering resilience as “*the ability of a system to return to an equilibrium or steady state after a disturbance*”. Grounded in a positivist epistemology, where people and nature are considered separate entities (King 2008), engineering resilience focuses on efficiency and how quickly a system can return to a state of equilibrium following a disruption (King 2008; Ponis and Koronis 2012; Stone and Rahimifard 2018; Adobor 2019). The system is considered more resilient the quicker it can return (King 2008; Adobor and McMullen 2018; Stone and Rahimifard 2018). Adobor and McMullen (2018) state that, by favouring engineering resilience, a system is underpinned by the false belief that variability can be controlled and that all consequences can be predicted. This can make a system inflexible, resistant to change, and at risk of major internal disruptions, jeopardising long-term SC stability (Adobor and McMullen 2018). However, Adobor and McMullen (2018) do acknowledge that engineering resilience can help in achieving a faster recovery from disruptions.

Ecological resilience focuses on a system’s ability to withstand shocks (Ponis and Koronis 2012; Manning and Soon 2016; Adobor and McMullen 2018), maintain capabilities (King 2008; Ponis and Koronis 2012; Adobor and McMullen 2018), and adapt following disruptions (Adobor 2019). It is measured by how big a disruption a system can handle before experiencing enforced disadvantageous change (King 2008; Ponis and Koronis 2012; Adobor and McMullen 2018). Unlike engineering resilience, which aims for a single equilibrium state, ecological resilience acknowledges the existence of multiple stable states (King 2008; Adobor and McMullen 2018; Stone and Rahimifard 2018; Hendry et al. 2019). Therefore, systems can return to their original state or change to an acceptable alternative state (Hendry et al. 2019). While engineering strategies such as efficiency aim to remove all slack, ecological resilience

maintains redundancy, that is the: “*concept of keeping some resources in reserve to be used in case of a disruption*” (Sheffi and Rice 2005, p. 44) to ensure operations can continue if one component fails (Adobor and McMullen 2018).

Both engineering and ecological resilience assume the existence of closed systems and states of equilibrium, which Stone and Rahimifard (2018) argue is not realistic in complex networks such as food SCs, where social, environmental, political, and economic factors are intertwined. A third definition of resilience, adaptive (King 2008; Stone and Rahimifard 2018; Hendry et al. 2019), has gained prominence due to the recognition of the constantly changing business environment. Rooted in constructivism, adaptive resilience emphasises that understanding is subjective, with no separation between people and nature (King 2008). It focuses on managing unstable states, with systems passing through a cycle of exploitation, conservation, release, and reorganisation (King 2008; Stone and Rahimifard 2018). From this perspective, resilience is measured and developed through a system’s continuous learning and adaption in response to disruptions (King 2008; Adobor and McMullen 2018; Hendry et al. 2019). Adaptive resilience argues that complex social-ecological systems cannot achieve a state of equilibrium (Adobor and McMullen 2018; Hendry et al. 2019). This has seen adaptive resilience presented as the most appropriate form of resilience when describing SCs, especially Agri-Food Supply Chains (AFSCs) (Stone and Rahimifard 2018), the focus of this research.

2.4.3 Defining Supply Chain Resilience

There is a lack of consensus surrounding the definition of SCRes within the SCRes literature, as illustrated in Table 4.

Table 4: Definitions of SCRes.

Definitions	Author
<i>"The ability of a system to return to its original state or move to a new, more desirable state after being disturbed"</i>	Christopher and Peck (2004, p. 2)
<i>"The ability of a supply chain system to reduce the probabilities of a disruption, to reduce the consequences of those disruptions once they occur, and to reduce the time to recover normal performance"</i>	Falasca et al. (2008, p. 596)
<i>"The adaptive capability of the supply chain to prepare for unexpected events, respond to disruption and recover from them by maintaining continuity of operations at the desired level of connectedness and control over structure and function"</i>	Ponomarov and Holcomb (2009, p. 131)
<i>"The ability to proactively plan and design the Supply Chain network for anticipating unexpected disruptive (negative) events, respond adaptively to disruptions while maintaining control over structure and function and transcending to a post-event robust state of operations, if possible, more favourable than the one prior to the event, thus gaining competitive advantage"</i>	Ponis and Koronis (2012, p. 921)

<i>"The adaptive capability of a supply chain to prepare for and/or respond to disruptions, to make a timely and cost-effective recovery, and therefore progress to a post-disruption state of operations – ideally, a better state than prior to the disruption"</i>	Tukamuhabwa et al. (2015, p. 5599)
<i>"The capability of a supply chain to prevent disruptions and to reduce the impact of disruptions through developing required level of readiness, quick response and recovery ability"</i>	Chowdhury and Quaddus (2016, p. 712)
<i>"The adaptive capability of a supply chain to reduce the probability of facing sudden disturbances, resist the spread of disturbances by maintaining control over structures and functions, and recover and respond by immediate and effective reactive plans to transcend the disturbance and restore the supply chain to a robust state of operations"</i>	Kamalahmadi and Parast (2016, p. 121)
<i>"A system with an objective to survive and maintain function even during the course of disruptions, provided with a capability to predict and assess the damage of possible disruptions, and enhanced by the strong awareness of its ever-changing environment and knowledge of the past events, thereby utilizing resilient strategies for defence against the disruptions"</i>	Wang et al. (2016, p. 412)

<i>"Supply chain resilience is a dynamic process of steering the actions so that the organisation always stays out of danger zone, and if the disruptive/uncertain event occurs, resilience implies initiating a very rapid and efficient response to minimise the consequences and maintaining or regaining a dynamically stable state, which allows it to adapt operations to the requirements of the changed environment before the competitors and succeed in the long run"</i>	Datta (2017, p. 1393)
<i>"An ability of firms in a supply chain to reconfigure tangible and intangible resources into operational capabilities and to anticipate, resist and cope with contingencies, thereby maintaining continuity of operations to the end consumers"</i>	Ali et al. (2018, p. 933)
<i>"The collective ability of AFSC stakeholders to ensure acceptable, sufficient and stable food supplies, at the required times and locations, via accurate anticipation of disruptions and the use of strategies which delay impact, aid rapid recovery and allow cumulative learning post-disruption"</i>	Stone and Rahimifard (2018, p. 232)
<i>"The adaptive capability of an organisation to prepare for, respond</i>	Scholten et al. (2019, p. 431)

<i>to and recover from any type of supply chain disruption"</i>	
<i>"The aggregate adaptive capacity of a system to become ready for, respond to and recover from disruptions without losing the system's primary state"</i>	Aboah et al. (2019, p. 272)

While a unanimous definition of SCRes is lacking, there is a consensus that SCRes involves phases of readiness, response, and recovery (Ponomarov and Holcomb 2009; Ponis and Koronis 2012; Hohenstein et al. 2015; Tukamuhabwa et al. 2015; Chowdhury and Quaddus 2016; Kamalahmadi and Parast 2016; Chowdhury and Quaddus 2017; Stone and Rahimifard 2018; Chowdhury et al. 2019; Sawyerr and Harrison 2020). When studying SCRes definitions, Hohenstein et al. (2015) proposed a fourth phase which can be reached: growth (Tukamuhabwa et al. 2015), which exceeds recovery by not returning to a prior state but instead reaching a new and enhanced state. Alternatively, Stone and Rahimifard (2018) describe this as the 'adapt' phase.

The readiness phase involves monitoring environmental changes (Stone and Rahimifard 2018), preparing for unexpected events (Ali and Golgeci 2019), and reducing the likelihood of disruptions (Chowdhury and Quaddus 2016). Hohenstein et al. (2015) suggest that this phase supports subsequent phases, aiming for growth (Hohenstein et al. 2015). In the response phase, capabilities help to reduce the impact of disruptions (Chowdhury and Quaddus 2016; Stone and Rahimifard 2018) and maintain functions (Stone and Rahimifard 2018). This is like the concept of ecological resilience mentioned earlier. The third phase, recovery, involves reducing recovery time and restoring lost functions (Stone and Rahimifard 2018). Described as the ability to "*bounce back*"

(Chowdhury and Quaddus 2016, p. 710), this phase is connected to the concept of engineering resilience (Adobor and McMullen 2018). The last phase, called growth (Hohenstein et al. 2015), or the adaptive phase (Stone and Rahimifard 2018), involves the ability to adapt and gain competitive advantage (Stone and Rahimifard 2018).

SCRes can also be divided into proactive and reactive capabilities (Tukamuhabwa et al. 2015; Ali et al. 2017a; 2017b; Chowdhury and Quaddus 2017; Tukamuhabwa et al. 2017; Hendry et al. 2019). Proactive capabilities are needed before a disruption, while reactive capabilities are required afterwards (Ali et al. 2017a), with Tukamuhabwa et al. (2015) suggesting some can be either, depending on the circumstances of their use. For example, collaboration can mitigate against disruptions (Proactive) by facilitating information sharing, e.g. of planned strikes, as well as aid recovery (Reactive), by enabling coordinated response and resource sharing (Scholten et al. 2014; Tukamuhabwa et al. 2015). This supports Adobor and McMullen's (2018) claim that SCRes consists of both pre-and-post disruption phases. Some argue for a third category called 'concurrent', which involves rapid response during or immediately after a disruption (Ali et al. 2017a; Tukamuhabwa et al. 2017; Hendry et al. 2019). However, it is debated here whether concurrent capabilities are distinct from reactive ones. Hohenstein et al. (2015) group proactive capabilities with readiness and categorise reactive capabilities under response, recovery, and growth phases.

Building on Hohenstein et al. (2015), this review further consolidates the phases of SCRes. This was done by categorising other phases of SCRes discussed throughout the literature using readiness, response, recovery, and growth (Table 5).

Table 5: Phases of SCRes.

Phases of SCRes			
Readiness	Response	Recovery	Growth
Pre-disruption (Chowdhury and Quaddus 2016; Ali et al. 2017a; Adobor and McMullen 2018)	Post-disruption (Chowdhury and Quaddus 2016; Ali et al. 2017a; Adobor and McMullen 2018)		
Anticipation (Kamalahmadi and Parast 2016; Wang et al. 2016)	Resistance (Kamalahmadi and Parast 2016; Ali and Golgeci 2019)		Adaptive (Stone and Rahimifard 2018)
Preparedness (Scholten et al. 2014; Ali and Golgeci 2019)		Rebound (Ali and Golgeci 2019)	
Proactive	Reactive		

Ponomarov and Holcomb's (2009) definition of SCRes (Table 4), which includes elements of readiness, response, recovery, and growth, has gained widespread acceptance in the literature, with Hohenstein et al. (2015, p. 96) calling it: "*the most comprehensive, theoretically grounded SCRes definition*". However, Stone and Rahimifard (2018, p. 219) argue that any resilience definition for AFSCs should emphasise "*availability, access, suitability and stability of food supply*", believing there cannot be a universal definition for SCRes. Hence, Stone and Rahimifard (2018) present a definition tailored to AFSCs (Table 4) that highlights the importance of maintaining a continuous food supply through anticipating

disruptions, implementing impact-reduction strategies, facilitating quick recovery, and promoting collective learning post-disruption (Hendry et al. 2019). Although comprehensive, current, and relevant to the research being conducted here, this study has chosen not to adopt Stone and Rahimifard's (2018) definition (Table 4), nor will it introduce its own definition. Instead, by using the definition proposed by Ponomarov and Holcomb (2009), this study can incorporate all four phases of SCRes, as discussed earlier, whilst aligning itself with other literature in the field. Therefore, here, SCRes is defined as:

the adaptive capability of the supply chain to prepare for unexpected events, respond to disruptions, and recover from them by maintaining continuity of operations at the desired level of connectedness and control over structure and function (Ponomarov and Holcomb 2009, p. 131).

2.4.4 Strategies to Develop / Build Supply Chain Resilience

From an in-depth review of the SCRes literature, four strategies for developing / building SCRes were identified; collaboration, flexibility, redundancy, and agility (Tukamuhabwa et al. 2015) (Table 6).

Table 6: Strategies for developing / building SCRes.

Strategies of SCRes	Cited By
COLLABORATION	Christopher and Peck (2004); Sheffi and Rice (2005); Pettit et al. (2010); Blackhurst et al. (2011); Juttner and Maklan (2011); Soni and Jain (2011); Ponis and Koronis (2012); Wicher and Lenort (2012); Scholten et al. (2014); Hohenstein et al. (2015); Scholten and Schilder (2015); Kamalahmadi and Parast (2016); Wang et al.

	(2016); Ali et al. (2017a; 2017b); Chowdhury and Quaddus (2017); Datta (2017); Jain et al. (2017); Ali et al. (2018); Stone and Rahimifard (2018); Aboah et al. (2019); Ali and Golgeci (2019); Chowdhury et al. (2019); Dubey et al. (2019); Polyviou et al. (2020); Sa et al. (2020); Sawyerr and Harrison (2020)
FLEXIBILITY	Sheffi (2005); Sheffi and Rice (2005); Pettit et al. (2010); Juttner and Maklan (2011); Soni and Jain (2011); Carvalho et al. (2012); Ponis and Koronis (2012); Scholten et al. (2014); Bradaschia and Pereira (2015); Hohenstein et al. (2015); Kamalahmadi and Parast (2016); Wang et al. (2016); Ali et al. (2017a; 2017b); Brusset and Teller (2017); Datta (2017); Jain et al. (2017); Stone and Rahimifard (2018); Aboah et al. (2019); Chowdhury et al. (2019); Li et al. (2020); Polyviou et al. (2020); Sa et al. (2020); Sawyerr and Harrison (2020)
REDUNDANCY	Sheffi and Rice (2005); Pettit et al. (2010); Soni and Jain (2011); Carvalho et al. (2012); Ponis and Koronis (2012); Johnson et al. (2013); Kamalahmadi and Parast (2016); Purvis et al. (2016); Wang et al. (2016); Datta (2017); Sa et al. (2020)

AGILITY	Christopher and Peck (2004); Ponis and Koronis (2012); Wicher and Lenort (2012); Scholten et al. (2014); Hohenstein et al. (2015); Kamalahmadi and Parast (2016); Purvis et al. (2016); Ali et al. (2017a; 2017b); Datta (2017); Kochan and Nowicki (2018); Stone and Rahimifard (2018); Aboah et al. (2019); Ali and Golgeci (2019); Sawyerr and Harrison (2020)
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2.4.4.1 Collaboration

Collaboration is the most widely cited antecedent of SCRes (Sawyerr and Harrison 2020). Cao et al. (2010), cited in Scholten and Schilder (2015, p. 473-474), define collaboration as “*the collaborative activities of information-sharing, goal congruence, joint decision-making, resources-sharing, incentive alignment, collaborative communication and joint knowledge creation among independent supply chain partners*”. Present within this definition, and a prominent form of collaboration, is information sharing (Table 7).

Christopher and Peck (2004, p. 9) state that “*the underlying principle of collaborative working in the supply chain is that the exchange of information can reduce uncertainty*”. Types of information that can be shared include, but are not limited to, market trends and shipping information, with the most effective forms being face-to-face, followed by telephone communication (Scholten and Schilder 2015).

Alongside information sharing, Scholten and Schilder (2015, p. 478-479) propose three other ways of collaborating to enhance SCRes: “*joint relationship effort*”, “*joint knowledge creation*” and “*mutual dependency*”

(Table 7). Joint relationship effort involves sharing resources, like workers and transport, and coordinated decision making (Ponis and Koronis 2012). Joint knowledge creation involves collaborative learning, either in response to disruptions (usually through post-disruptions reviews), or during day-to-day operations, while mutual dependency involves combined investments (Scholten and Schilder 2015).

Table 7: Forms of collaboration

Forms of Collaboration	Cited By
INFORMATION SHARING	Christopher and Peck (2004); Ponis and Koronis (2012); Wieland and Wallenburg (2013); Scholten and Schilder (2015); Tukamuhabwa et al. (2015); Kamalahmadi and Parast (2016); Ali et al. (2017a); Jain et al. (2017); Tukamuhabwa et al. (2017); Sa et al. (2020)
"JOINT RELATIONSHIP EFFORT"	Scholten and Schilder (2015, p. 478-479)
"JOINT KNOWLEDGE CREATION"	
"MUTUAL DEPENDENCY"	

Alternatively, Brusset and Teller (2017, p. 61) use 'integration' to describe *"the degree to which a manufacturer strategically collaborates with its supply chain partners and collaboratively manages intra-and-interorganisation processes"*. Integration is also used by Ponomarov and Holcomb (2009) in relation to SCRes, as a synonym for 'connectedness', to illustrate the extent to which nodes within the SC effectively synchronise processes. Ali et al. (2017b) found that vertical integration, whereby an organisation purchases another within the SC, both upwards and downwards, improved resilience. However, Wieland and Wallenburg (2013) argue that integration can hinder SCRes. They claim that while

integration helps with information and asset sharing, it creates a rigid structure that reduces flexibility and responsiveness to disruptions. They conclude that when there is communication and cooperation, integration is not required to increase SCRes (Wieland and Wallenburg 2013). This is supported by Li et al. (2020, p. 83), who rejects the hypothesis that an elevated level of external integration, that is: "*the extent to which a firm can integrate with its major customers and suppliers*", enhances SCRes. Additionally, Datta (2017) argues that inter-organisational integration can lead to a tightly connected system that is more susceptible to disruptions. While Ponomarov and Holcomb (2009) identify a positive correlation between integration and SCRes, they also share concerns about being tightly connected, emphasising that SCRes is greater when control over capabilities is maintained. This control weakens the more processes and decision making are shared (Ponomarov and Holcomb 2009). This illustrates ambiguity surrounding the term 'integration'. Ponomarov and Holcomb (2009, p. 136) seem to view integration more from a psychological perspective, referred to as: "*the behavior of people to band together during times of disaster*". Therefore, here, collaboration is seen as an antecedent of SCRes until it starts resembling a merger. This includes combining funds, diluted decision making and mutual dependency (Wieland and Wallenburg 2013). Hence, "*mutual dependency*", as presented by Scholten and Schilder (2015, p. 479), is rejected by this study as a form of collaboration that enables SCRes.

Several studies stress the importance of collaborating both vertically and horizontally to enhance SCRes (Johnson et al. 2013; Leat and Revoredo-Giha 2013; Scholten et al. 2014; Manning and Soon 2016; Hendry et al. 2019). Vertical collaboration involves nodes at different stages of the SC, such as suppliers and customers, while horizontal collaboration involves nodes at the same level of the SC, often within an organisation or through partnerships (Scholten et al. 2014). For Perishable Products Supply Chains (PPSCs), which are the focus of this research, Ali et al. (2017b;

2018) call for more vertical collaboration, both upstream with suppliers, such as farmers and packers, and downstream with buyers, such as wholesalers and retailers. This is to reduce delays to deliveries, which can be especially damaging for perishable products (Ali et al. 2018), and to improve the understanding of customer needs (Ali et al. 2017b). This is supported by Manning and Soon (2016), who state that resilience within food SCs requires engagement at all stages. Scholten et al. (2014) suggest that having a planning team consisting of intra-and-inter-organisational members of the SC can promote vertical and horizontal collaboration.

In addition to vertical and horizontal collaboration, Ali et al. (2017b; 2018) highlight the importance of collaboration between public organisations and private SMEs. This included identifying public organisations as a source of technical, financial, and legislative support (Ali et al. 2018). However, Chowdhury and Quaddus (2016) found that support from government and other institutions did not significantly contribute to the development of SCRes. Another type of collaboration is consortium support (Leat and Revoredo-Giha 2013; Ali et al. 2017b). In their study of a consortium with approximately 250 members, Ali et al. (2017b, p. 1241) found that consortium members received “*moral, technical and financial support*” through regular industry fora. Alternatively, Leat and Revoredo-Giha (2013) found that pig farmers accessed benchmarking information through a consortium called ‘Pig Hub’. Furthermore, Johnson et al. (2013), found that membership to industry associations can support information sharing and trust building. Lastly, an emerging form of collaboration is supplier certifications (Ali et al. 2017b; 2018; Vanpoucke and Ellis 2019). According to Vanpoucke and Ellis (2019), supplier certification boosts interactions between buyers and suppliers, providing greater opportunity for learning, information sharing, and supplier monitoring.

Collaboration is a multi-phase component of SCRes. Ali and Golgeci (2019) situate it within the preparedness phase which is consistent with Chowdhury and Quaddus (2017), Hendry et al. (2019) and Hohenstein et al. (2015), who categorise collaboration as proactive and readiness elements, respectively. Hendry et al. (2019) specifically highlight horizontal and vertical collaboration as crucial proactive measures, especially during times of constitutional change, like Brexit. Scholten et al. (2014) further emphasise the importance of both vertical and horizontal collaboration across the distinct phases of SCRes. During the preparedness phase, both forms of collaboration involved all parties in the SC working together to implement operational plans, including mitigation efforts. In the response phase, both vertical and horizontal collaboration were needed to put disruption-handling plans into action and assess their effectiveness. In the recovery phase, vertical and horizontal collaboration helped to create a network of resources and skills to speed up the recovery process (Scholten et al. 2014). This is consistent with Soni and Jain (2011), Hohenstein et al. (2015), Tukamuhabwa et al. (2015) and Stone and Rahimifard (2018).

2.4.4.2 Flexibility & Redundancy

Flexibility and redundancy represent the two most frequently used strategies for handling SC disruptions (Carvalho et al. 2012), with both often discussed in combination throughout the literature (Sheffi and Rice 2005; Pettit et al. 2010; Soni and Jain 2011; Carvalho et al. 2012; Ponis and Koronis 2012; Johnson et al. 2013; Kamalahmadi and Parast 2016; Purvis et al. 2016; Wang et al. 2016; Datta 2017; Sa et al. 2020). Hence, the same will be done here.

2.4.4.2.1 Flexibility

Erol et al. (2010), cited in Tukamuhabwa et al. (2015, p. 5604), define flexibility as “*the ability of an enterprise to adapt to the changing*

requirements of its environment and stakeholders with minimum time and effort". Through flexibility, SCs can reduce costs and lead times (Carvalho et al. 2012), contain disruptions (Juttner and Maklan 2011; Soni and Jain 2011) or avoid them altogether through alternative processes (Bradaschia and Pereira 2015). This has seen flexibility widely cited as a strategy for developing / building SCRes (Table 6).

Flexibility has been differentiated between operational and sourcing flexibility (Sawyerr and Harrison 2020), with both achievable in several ways (Table 8).

Table 8: Forms of flexibility.

Forms of Flexibility	Strategies	Cited By
OPERATIONAL FLEXIBILITY	Streamlined processes	Wicher and Lenort (2012); Stone and Rahimifard (2018); Polyviou et al. (2020); Sawyerr and Harrison (2020)
	Postponement	Tukamuhabwa et al. (2015); Adobor and McMullen (2018); Polyviou et al. (2020)
	Transportation flexibility	Tukamuhabwa et al. (2015); Kamalahmadi and Parast (2016); Stone and Rahimifard (2018); Polyviou et al. (2020); Sa et al. (2020)
	Flexible labour arrangements	

	Multi-skilled workforce	Kamalahmadi and Parast (2016); Tukamuhabwa et al. (2017)
	Multi-purpose machinery	
	Order fulfilment flexibility	Tukamuhabwa et al. (2015); Sa et al. (2020)
	Concurrent processes	Sheffi (2005)
	Broad job descriptions	Johnson et al. (2013)
	Prioritisation	Bradaschia and Pereira (2015)
	Conversion flexibility	
SOURCING FLEXIBILITY	Multi-sourcing	Tukamuhabwa et al. (2015); Kamalahmadi and Parast (2016); Stone and Rahimifard (2018); Sa et al. (2020); Sawyerr and Harrison (2020)
	Flexible contract arrangements	Tukamuhabwa et al. (2017); Adobor and McMullen (2018); Stone and Rahimifard (2018); Sawyerr and Harrison (2020)

Alternatively, Sheffi and Rice (2005, p. 45-47) illustrate a flexible SC through “the five facets of flexibility”; (1) “*Supply and Procurement*” (2) “*Conversion*”, (3) “*Distribution and Customer-Facing Activities*”, (4) “*Control Systems*” and (5) “*The Right Culture*”. According to Sheffi and Rice (2005, p. 45), “*supply and procurement*” flexibility are rooted in an alignment between supplier strategy and relationship. Hence, it is argued

that a strong relationship with a single supplier can be as effective as multi-sourcing. This goes against arguments that single sourcing increases SC vulnerability (Wagner and Bode 2006; Maslaric et al. 2013; Jain et al. 2017). Conversion flexibility involves migrating operations during disruptions, achievable through standardisation (Sheffi and Rice 2005; Wicher and Lenort 2012; Polyviou et al. 2020). When it comes to “*distribution and customer-facing activities*”, Sheffi and Rice (2005, p. 46) argue that SCs must choose which customers to prioritise. This can be based on profitability, importance, or vulnerability, so long as the SC appears to allocate fairly to maintain long-term relationships (Sheffi and Rice 2005). Furthermore, customer-facing activities are a key component of SCRes, with disruptions providing an opportunity to strengthen customer relations by providing support in finding alternative suppliers when unable to fulfil orders. Control systems enable early identification of disruptions and swift implementation of solutions. This is commonly achieved through SC visibility (Sheffi and Rice 2005). Finally, Sheffi and Rice (2005, p. 47) call for: “*the right culture*”, one of distributed decision making, allowing frontline workers to utilise their initiative.

In categorising elements of SCRes, Ali and Golgeci (2019) place flexibility within the preparedness phase. This is supported by Chowdhury and Quaddus (2017) and Stone and Rahimifard (2018), who categorise it as proactive and readiness elements. Alternatively, Hohenstein et al. (2015) categorise flexibility as a post-disruption element, while Ali et al. (2017a) views it as a during-response element. This illustrates a lack of consensus surrounding in which phase of resilience flexibility is demonstrated. This could be attributed to flexibility being rooted in other components of SCRes. Scholten and Schilder (2015) found that each form of collaboration mentioned earlier enhanced flexibility, except for mutual dependency, supporting its earlier rejection. This is supported by Soni and Jain (2011), who identified trust, a sub-element of collaboration (Johnson et al 2013; Kamalahmadi and Parast 2016; Jain et al. 2017; Stone and

Rahimifard 2018; Adobor 2019; Dubey et al. 2019; Sa et al. 2020; Sawyerr and Harrison 2020), as an element of flexibility. Alternatively, Scholten et al. (2014) considers visibility an antecedent of flexibility. This is supported by Johnson et al. (2013), who found that increased visibility and subsequent knowledge creation enhanced flexibility. Flexibility has been further linked to velocity (Christopher and Peck 2004; Juttner and Maklan 2011; Wicher and Lenort 2012; Kamalahmadi and Parast 2016; Polyviou et al. 2020), partly due to utilisation of standardised process (Christopher and Peck 2004; Wicher and Lenort 2012; Polyviou et al. 2020). Mandal (2012) also considers risk management an antecedent of flexibility. This is supported by both Juttner and Maklan (2011) and Bradaschia and Pereira (2015), who identify positive relationships between risk sharing and contingency planning, and flexibility, respectively. Hence, this study categorises flexibility as a multi-phase element of SCRes.

2.4.4.2.2 Redundancy

Sa et al. (2020, p. 94) state that redundancy involves “*maintaining an idle response capacity to access in case of disruptions*”. This highlights the pre-emptive nature of redundancy with the use of ‘in case’. This has led to redundancy, or “*reserve capacity*” (Chowdhury and Quaddus 2017, p. 187), being classified as a proactive, preparedness (Ali and Golgeci 2019; Chowdhury and Quaddus 2017) and readiness (Hohenstein et al. 2015; Stone and Rahimifard 2018) element. However, Hohenstein et al. (2015) also categorise redundancy as a post-disruption strategy, enabling SCs to respond to sudden changes in demand. While Ali et al. (2017a) categorise redundancy as a during-disruption element for the same reason.

Redundancy can be categorised as tangible and intangible (Juttner and Maklan 2011; Sawyerr and Harrison 2020) (Table 9).

Table 9: Forms of redundancy.

Forms of Redundancy	Strategies	Cited By
TANGIBLE	Safety / buffer stock	Christopher and Peck (2004); Sheffi (2005); Sheffi and Rice (2005); Colicchia et al. (2010); Blackhurst et al. (2011); Soni and Jain (2011); Carvalho et al. (2012); Wicher and Lenort (2012); Johnson et al. (2013); Bradaschia and Pereira (2015); Purvis et al. (2016); Stone and Rahimifard (2018); Polyviou et al. (2020); Sa et al. (2020); Sawyerr and Harrison (2020)
	Multi-sourcing	Christopher and Peck (2004); Sheffi (2005); Sheffi and Rice (2005); Colicchia et al. (2010); Soni and Jain (2011); Wicher and Lenort (2012); Purvis et al. (2016); Ali et al. (2017a; 2017b; 2018); Sa et al. (2020); Sawyerr and Harrison (2020)
	Back-up sites	Sheffi and Rice (2005); Juttner and Maklan (2011); Sa et al. (2020); Sawyerr and Harrison (2020)
	Alternative modes and routes of transport	Sawyerr and Harrison (2020)
	Low-capacity utilisation	Sheffi (2005); Sheffi and Rice (2005); Ponis and Koronis (2012);

		Wicher and Lenort (2012); Johnson et al. (2013); Purvis et al. (2016); Chowdhury and Quaddus (2017); Sawyerr and Harrison (2020)
	Multi-skilled workforce	Juttner and Maklan (2011); Sawyerr and Harrison (2020)
	Multi-process	
INTANGIBLE	Supplier relationships	Sheffi (2005); Juttner and Maklan (2011); Purvis et al. (2016); Sawyerr and Harrison (2020)
	Broad job descriptions	Johnson et al. (2013)

Numerous authors emphasize the need for strategic implementation of additional resources to act as a buffer against disruptions, with excessive buffer stock throughout the SC being viewed as detrimental to SCRes (Christopher and Peck 2004; Blackhurst et al. 2011; Tukamuhabwa et al. 2015; Purvis et al. 2016; Adobor and McMullen 2018; Sawyerr and Harrison 2020). Purvis et al. (2016) suggest placing redundant resources along the critical path, while Sawyerr and Harrison (2020), in their study of HROs, found that redundant stock was reserved for critical components.

Christopher and Peck (2004) argue that, while beneficial from a cost and quality management perspective, it is counterintuitive from a resilience standpoint. Instead, they call for alternative suppliers to be sourced when possible (Christopher and Peck 2004).

In examining the resilience of perishable goods SMEs, Ali et al. (2017b) identified three drivers for using a multi-sourcing strategy. These were: (1) due to the primary supplier failing to meet quality conditions, (2) the

occurrence of natural disasters, and (3) when domestic goods become unavailable during off-seasons (Ali et al. 2017b).

2.4.4.2.3 Flexibility or Redundancy?

While both flexibility and redundancy are cited as strategies for developing SCRes (Table 6), there is no agreement on which strategy is better, and how this choice is influenced by contextual factors (Kamalahmadi and Parast 2016).

Adding redundancy into a SC is seen as straightforward but expensive (Wicher and Lenort 2012; Tukamuhabwa et al. 2015; Purvis et al. 2016; Wang et al. 2016; Adobor and McMullen 2018) and is referred to as an “*insurance premium*” (Sheffi and Rice 2005, p. 44). Alternatively, creating flexibility is considered challenging but cost-effective (Carvalho et al. 2012). Sheffi and Rice (2005, p. 45) distinguish the two, seeing flexibility as a quality built into day-to-day operations, while redundant resources are used only during disruptions, concluding that “*there is significantly more leverage in making supply chains flexible than there is in adding redundancy*”. In a study by Vanpoucke and Ellis (2019) comparing buffer (redundancy) and process-orientated strategies, redundancy strategies were favoured when SC disruptions were unlikely, while process-orientated strategies were chosen when disruptions were more likely. This was because when disruptions were probable, SCs were motivated to address the root causes to prevent reoccurrence. The study also revealed that individuals' risk propensity (ranging from risk-averse to risk-seeking) significantly affected the adoption of both buffer and process-oriented strategies. Specifically, higher risk propensity led to a lower likelihood of adopting either strategy. However, there was no significant difference in preference between these two strategies based on risk propensity (Vanpoucke and Ellis 2019). Rice and Caniato (2003) suggest using both redundancy and flexibility based on factors like the type of business, industry, cost, and services features.

However, many authors argue that flexibility and redundancy are connected (Juttner and Maklan 2011; Wicher and Lenort 2012; Bradaschia and Pereira 2015; Tukamuhabwa et al. 2015; Purvis et al. 2016; Adobor and McMullen 2018; Polyviou et al. 2020; Sa et al. 2020). Redundancy is often viewed as a way of achieving flexibility (Juttner and Maklan 2011; Saenz and Revilla 2014; Tukamuhabwa et al. 2015; Purvis et al. 2016; Adobor and McMullen 2018; Sa et al. 2020). For example, multi-sourcing, a form of redundancy, helped companies like Cable Co (Juttner and Maklan 2011) and Cisco (Saenz and Revilla 2014) become more flexible. Wicher and Lenort (2012) also support this, arguing that spare capacity makes SC efficient and flexible.

Here, redundancy is seen as a means to achieve flexibility. Therefore, as per Christopher and Peck (2004), redundancy is considered a sub-element of SCRes. However, unlike Christopher and Peck (2004), this research aligns with the wider literature (Pettit et al. 2010; Ponis and Koronis 2012; Hohenstein et al. 2015; Kamalahmadi and Parast 2016; Kochan and Nowicki 2018; Stone and Rahimifard 2018) which views flexibility as a fundamental component of SCRes.

2.4.4.3 Agility

Widely cited as a strategy for developing / building SCRes (Table 6), agility enables quick response to unforeseen events (Kamalahmadi and Parast 2016; Purvis et al. 2016). This has led to it being categorised as a resistance phase element by Ali and Golgeci (2019), as supported by Hohenstein et al. (2015), who categorise agility as a post-disruption element. Alternatively, Ali et al. (2017a) categorise agility as a during-disruption element, while Stone and Rahimifard (2018) view it as a recovery element. Common among each of these categorisations is the notion that agility comes into play once a disruption has been initiated. Therefore, this study considers agility a resist, response, and recovery phase element of SCRes. Hence, in line with the literature (Table 6),

agility becomes a key strategy in creating SCRes. Wieland and Wallenburg (2013) cite collaboration as an antecedent of agility. This is in line with Mandal (2012), who states that agility is synonymous with high market orientation and a customer focus, both aspects of collaboration (Juttner and Maklan 2011; Scholten and Schilder 2015). Furthermore, flexibility has been cited as an antecedent of agility (Ponis and Koronis 2012; Purvis et al. 2016; Kochan and Nowicki 2018; Sawyerr and Harrison 2020), suggesting that these strategies for developing / building SCRes are not mutually exclusive.

2.4.5 Elements of Supply Chain Resilience Strategies

In examining the strategies for developing / building SCRes, several elements of SCRes were identified. The discussion of these strategies has been elaborated to include these elements, how they are interconnected and how they relate to the strategies. Table 10 lists these elements while Figure 4 provides an illustration of how these strategies and elements interconnect in developing / building SCRes.

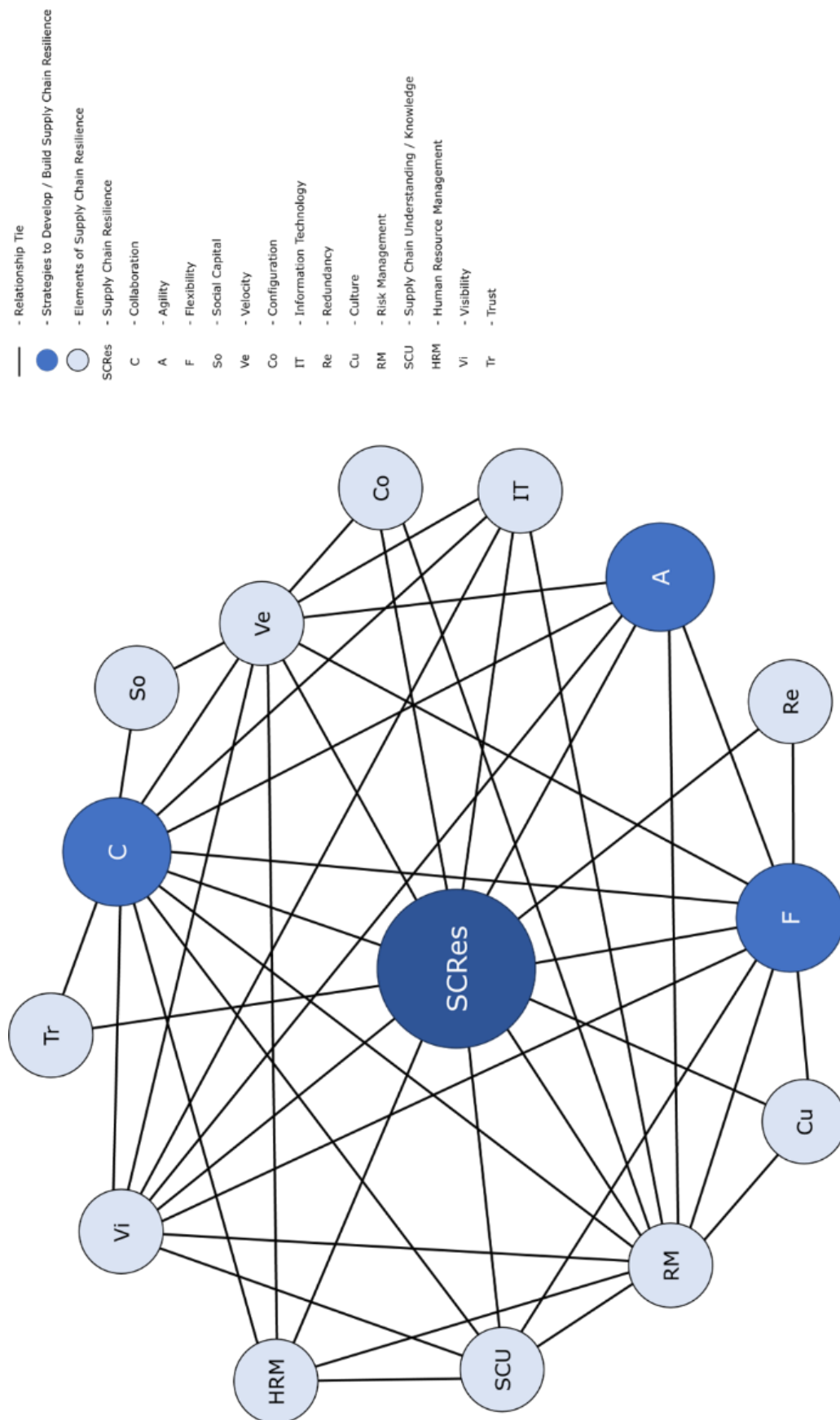
Table 10: Elements of SCRes.

Elements of SCRes	Cited By
CONFIGURATION	Christopher and Peck (2004); Blackhurst et al. (2011); Ponis and Koronis (2012); Saenz and Revilla (2014); Scholten et al. (2014); Ambulkar et al. (2015); Kamalahmadi and Parast (2016); Wang et al. (2016); Brusset and Teller (2017)
TRUST	Johnson et al (2013); Kamalahmadi and Parast (2016); Jain et al. (2017); Adobor and McMullen (2018); Stone and Rahimifard (2018); Adobor

	(2019); Dubey et al. (2019); Sa et al. (2020); Sawyerr and Harrison (2020)
SOCIAL CAPITAL	Johnson et al. (2013); Tukamuhabwa et al. (2015); Ali et al. (2017a); Adobor (2019); Golgeci and Kuivalainen (2020); Polyviou et al. (2020)
VISIBILITY	Pettit et al. (2010); Blackhurst et al. (2011); Juttner and Maklan (2011); Soni and Jain (2011); Ponis and Koronis (2012); Scholten et al. (2014); Hohenstein et al. (2015); Kamalahmadi and Parast (2016); Ali et al. (2017a; 2017b); Jain et al. (2017); Stone and Rahimifard (2018); Aboah et al. (2019); Ali and Golgeci (2019); Chowdhury et al. (2019); Dubey et al. (2019); Sa et al. (2020)
VELOCITY	Christopher and Peck (2004); Juttner and Maklan (2011); Carvalho et al. (2012); Ponis and Koronis (2012); Kamalahmadi and Parast (2016); Ali et al. (2017a); Jain et al. (2017); Adobor and McMullen (2018); Kochan and Nowicki (2018); Ali and Golgeci (2019); Sa et al. (2020)
RISK MANAGEMENT	Christopher and Peck (2004); Blackhurst et al. (2011); Mandal (2012); Scholten et al. (2014); Ambulkar et al. (2015); Chowdhury and Quaddus (2016); Kamalahmadi and Parast (2016); Wang et al.

	(2016); Ali et al. (2017a); Datta (2017); Jain et al. (2017); Saenz et al. (2018); Stone and Rahimifard (2018); Adobor (2019); Ali and Golgeci (2019); Li et al. (2020); Polyviou et al. (2020); Sawyerr and Harrison (2020)
HUMAN RESOURCE MANAGEMENT (HRM)	Blackhurst et al. (2011); Chowdhury and Quaddus (2016); Ali et al. (2017a; 2018); Adobor (2019); Sawyerr and Harrison (2020)
CULTURE	Christopher and Peck (2004); Sheffi and Rice (2005); Mandal (2012); Chowdhury and Quaddus (2016); Datta (2017); Jain et al. (2017); Stone and Rahimifard (2018); Adobor (2019); Ali and Golgeci (2019); Li et al. (2020); Polyviou et al. (2020); Sawyerr and Harrison (2020)
SC UNDERSTANDING / KNOWLEDGE	Christopher and Peck (2004); Ponis and Koronis (2012); Scholten et al. (2014); Kamalahmadi and Parast (2016); Datta (2017); Jain et al. (2017)
INFORMATION TECHNOLOGY	Tukamuhabwa et al. (2015); Ali et al. (2017b); Ali and Golgeci (2019); Dubey et al. (2019)

Figure 4: Map of interconnections between SCRes strategies and elements.



2.4.5.1 Configuration

Traditionally, SCs, especially food SCs (Stone and Rahimifard 2018), are designed to prioritise cost and / or customer service, as opposed to resilience (Christopher and Peck 2004). Hence, reconfiguration is widely cited as an element of SCRes (Table 10). Here, reconfiguration is seen as a strategy for achieving greater SCRes, while configuration is the determinant of SCRes. Therefore, this LR frames discussions around reconfiguration as configuration. Consequently, while Ali and Golgeci (2019) locate reconfiguration within the rebound phase, that is, a capability that enables a SC to recover from disruption and continue operations at a previous or enhanced level, here, configuration is also categorised as a proactive element.

Understanding the structure and resilience of SCs can be aided by an analysis of them as a form of network, taking into consideration node density, complexity, and criticality (Craighead et al. 2007; Falasca et al. 2008; Chowdhury and Quaddus 2017). Nodes are broadly defined as “a set of objects” (Kadushin 2004, p. 3) and / or “individuals or collective actors” (Gamper 2022, p. 88). Examples of nodes within a SC include manufacturers and distributors.

2.4.5.1.1 Node Density

Falasca et al. (2008, p. 598) define SC node density as “*the quantity and geographical spacing of nodes within a supply chain*”, measured by dividing the number of nodes within a SC by the average distance between them. Node density is particularly concerning for food organisations because they often rely on raw materials from specific geographic regions (Aboah et al. 2019). Density is high when many nodes are clustered within a limited geographical space (Craighead et al. 2007; Falasca et al. 2008; Chowdhury and Quaddus 2017). Falasca et al. (2008) illustrates the relationship between SC density and SCRes using the 1999

earthquake in Taiwan. Due to the concentration of computer component manufacturers in Hsinchu, Taiwan, the resulting damage caused substantial disruption to the global computer SC. Thus, highlighting how local incidents can have global consequences when a substantial part of the SC is concentrated in the affected area (Falasca et al. 2008). SCRes can be increased in a densely populated SC by redistributing nodes. However, Falasca et al. (2008) explains that there may be cost and / or efficiency benefits to the concentration of nodes. In such case, it is better to maintain density level and focus on implementing mitigating measures in that area (Falasca et al. 2008). This is supported by Sheffi (2005), cited in Purvis et al. (2016), who argue that when nodes are far apart (low SC density), the chance of disruptions increases, along with transportation costs and delivery times (Wicher and Lenort 2012).

2.4.5.1.2 Node Complexity

Node complexity concerns the number of nodes in a SC and the flows between them (Craighead et al. 2007; Falasca et al. 2008; Chowdhury and Quaddus 2017). It is measured by adding up the total number of nodes and flows, including forward, backward, and within-tier flows, within a SC (Falasca et al. 2008). Less complex SCs have fewer nodes and / or flows between them (Craighead et al. 2007; Falasca et al. 2008; Chowdhury and Quaddus 2017). With fewer nodes and / or flows one might expect disruptions to have less impact on the SC. However, both Falasca et al. (2008) and Chowdhury and Quaddus (2017) explain that adding extra nodes can be beneficial, even if it increases complexity. Extra nodes, such as additional suppliers, can act as a buffer (Christopher and Peck 2004; Sheffi 2005; Sheffi and Rice 2005; Colicchia et al. 2010; Soni and Jain 2011; Wicher and Lenort 2012; Purvis et al. 2016; Ali et al. 2017a; 2018; Sa et al. 2020; Sawyerr and Harrison 2020). However, Chowdhury et al. (2019) argue that high node complexity can compromise inter-organisational trust, commitment, and cooperation.

2.4.5.1.3 Node Criticality

Node criticality concerns the importance of a node, or group of nodes, within a SC (Craighead et al. 2007; Falasca et al. 2008; Chowdhury and Quaddus 2017). A SC with critical nodes is highly dependent on the continuity of those nodes, if they become compromised, so could the whole SC (Falasca et al. 2008). Node criticality is measured using three sub-measures in combination: (1) the relative importance placed on a specific node, (2) the number of non-redundant inward flows, and (3) the number of non-redundant outward flows (Falasca et al. 2008). If a SC has multiple critical nodes, adding additional nodes can reduce criticality, at the cost of increased density and complexity (Falasca et al. 2008).

2.4.5.2 Trust

Collaboration requires trust within the SC (Table 10). Trust is defined as a *“willingness to rely on an exchange partner in whom one has confidence”* (Moorman, Deshpande, and Zaltman 1993, cited in Jain et al. (2017, p. 6781). With trust comes an expectation that firms will not act opportunistically (Adobor 2019). Johnson et al. (2013) found that continued collaboration fosters greater trust and a willingness to work together without formal agreements. This suggests that the relationship between trust and collaboration is circular and self-reinforcing. Here, trust is considered a prerequisite for collaboration. This is supported by Datta (2017), who classifies trust as a sub-element of SCRes.

2.4.5.3 Social Capital

Social capital is defined as *“the sum of the actual and potential resources embedded within, available through, and derived from the relationships possessed by an individual or social unit”* (Nahapiet and Ghoshal 1998, cited in Golgeci and Kuivalainen 2020, p. 64). Therefore, in addition to being an antecedent of collaboration (Tukamuhabwa et al. 2015; Ali et al. 2017a; Adobor 2019; Golgeci and Kuivalainen 2020; Polyviou et al.

2020), here, social capital is also seen as an outcome of collaboration. Social capital comprises three dimensions; (1) structural, (2) cognitive, and (3) relational capital (Johnson et al. 2013; Golgeci and Kuivalainen 2020; Polyviou et al. 2020).

2.4.5.3.1 Structural Capital

Structural capital involves the connections between nodes within the SC (Johnson et al. 2013; Golgeci and Kuivalainen 2020), including size, density, connectivity, and hierarchy (Polyviou et al. 2020). It can be created through small network sizes, geographical proximity between decision makers and low hierarchy (Polyviou et al. 2020). Network size refers to “*the number of individuals represented by a collective*” (Polyviou et al. 2020, p. 78). Within an organisation, small management teams facilitate collective action, enabling firms to organise and respond quickly, thus improving their ability to avoid and recover from disruptions (Polyviou et al. 2020). Geographical proximity is the physical distance between parties. Polyviou et al. (2020) found that medium-sized organisations are often geographically concentrated with shorter distance between decision makers. This improved communication and knowledge exchange by enabling face-to-face meetings. Organisation hierarchy concerns the number of levels within a chain of command. Medium-sized organisations typically have flatter structures, which enhances SCRes by enabling quicker responses to environmental changes and swifter decision making (Polyviou et al. 2020).

2.4.5.3.2 Cognitive Capital

Cognitive capital refers to “*the resources providing shared representations, interpretations, and systems of meaning among a network’s actors*” (Nahapiet and Ghoshal 1998, cited in Polyviou et al. 2020, p. 72), including shared meaning, understanding (Johnson et al. 2013; Golgeci and Kuivalainen 2020) vision and objectives (Johnson et al.

2013; Polyviou et al. 2020). Polyviou et al. (2020) found that medium-sized organisations generated cognitive capital through long employee tenure. Long tenure creates closer relationships between employees, accumulated knowledge, and experience, and promotes knowledge sharing, all aiding avoidance and recovery from disruptions (Polyviou et al. 2020). Therefore, high turnover creates an unstable skill base within the organisation and hinders the development of interpersonal relationships between and within firms (Polyviou et al. 2020). Alternatively, Johnson et al. (2013) found that cognitive capital can be generated through membership to an industry association.

2.4.5.3.3 Relational Capital

Relational capital refers to resources gained through interpersonal relationships (Golgeci and Kuivalainen 2020), and can be generated through close relationships, commitment, and respect (Polyviou et al. 2020). This facilitates the acquisition of tacit knowledge and resources, as well as a willingness to collaborate and share information (Golgeci and Kuivalainen 2020; Polyviou et al. 2020). Johnson et al. (2013) found that Network Rail generated relational capital through a supplier development program. This allowed Network Rail to access materials out of hours to successfully complete an ongoing project.

2.4.5.4 Visibility

Visibility involves knowledge of the SC and the assets within it (Tukamuhabwa et al. 2015; Adobor and McMullen 2018; Stone and Rahimifard 2018). SC visibility facilitates SCRes (Table 10) through enabling real-time monitoring of inventory along the SC (Blackhurst et al. 2011; Ali et al. 2017a; Jain et al. 2017; Stone and Rahimifard 2018; Aboah et al. 2019). This helps detect both potential and impending disruptions, along with learning about how they spread (Blackhurst et al. 2011; Tukamuhabwa et al. 2015; Ali et al. 2017a; Jain et al. 2017).

Furthermore, “*visibility ensures confidence in the supply chain, preventing overreaction, unnecessary interventions and ineffective decisions in a risk event situation*” (Christopher and Lee 2004, cited in Scholten et al 2014, p. 215; Juttner and Maklan 2011; Soni and Jain 2011; Tukamuhabwa et al. 2015). This is because:

Making an informed decision on the status of a disrupted supply chain and the courses of action to be taken is only possible when the decision makers have the complete knowledge of the status of their system, and they can easily navigate how their decision can affect different entities of the chain (Kamalahmadi and Parast 2016, p. 127).

Visibility is said to be rooted in collaboration, especially information sharing (Scholten and Schilder 2015; Kamalahmadi and Parast 2016; Jain et al. 2017; Dubey et al. 2019), with greater visibility being generated when both upstream and downstream collaboration occurs. Visibility is widely cited as an antecedent of agility (Christopher and Peck 2004; Wieland and Wallenburg 2013; Saenz and Revilla 2014; Tukamuhabwa et al. 2015; Kamalahmadi and Parast 2016; Purvis et al. 2016; Ali et al. 2017a; Adobor and McMullen 2018; Kochan and Nowicki 2018; Sawyerr and Harrison 2020). Saenz and Revilla (2014) found that visibility enhanced the agility, and subsequently, the resilience of Cisco following 2011’s Japanese earthquake and Tsunami.

Visibility has been categorised as a readiness element by Hohenstein et al. (2015), a resistance element by Ali and Golgeci (2019), and a recovery phase element by Stone and Rahimifard (2018), suggesting that visibility is a multi-phased element. In conclusion, in contrast to Christopher and Peck (2004), here, visibility is considered a core element of SCRes (Pettit et al. 2010; Ponis and Koronis 2012; Hohenstein et al. 2015; Kamalahmadi and Parast 2016; Stone and Rahimifard 2018).

2.4.5.5 Velocity

Velocity concerns how quickly a SC can respond to sudden changes (Christopher and Peck 2004), thus, improving resilience (Table 10). Hence, Ali and Golgeci (2019) categorise velocity as a resistance phase element, enabling SCs to resist disruptions.

Christopher and Peck (2004) identify three ways of enhancing SC velocity; (1) streamlined processes, (2) reduced in-bound times, and (3) reduction of non-value adding time. Streamlined processes involve simplifying and reducing the number of stages while performing tasks in parallel, opposed to sequentially (Christopher and Peck 2004). Reduced in-bound times can be achieved by selecting suppliers who can respond quickly to changes in delivery and synchronised scheduling via information sharing (Christopher and Peck 2004). This supports the idea that collaboration enhances velocity (Blackhurst et al. 2011; Wieland and Wallenburg 2013; Scholten and Schilder 2015; Polyviou et al. 2020). Blackhurst et al. (2011) found collaboration to further enhance velocity with predefined lines of communication eliminating confusion and speeding up the implementation of mitigation actions. Moreover, Scholten and Schilder (2015) found information sharing to increase velocity by reducing cycle times.

Finally, Christopher and Peck (2004) argues that most of the time spent within the SC adds no value from a customer perspective. Hence, the reduction of non-value adding time within the SC, such as the time inventory is left idle, increases velocity (Christopher and Peck 2004). The importance of velocity among food SCs will depend on the type of food they are working with. For example, velocity is going to be of more importance for PPSCs, compared to those working with tinned goods.

Alternatively, Sawyerr and Harrison (2020) found that a decentralised management structure increased velocity, resulting in quicker decision-

making during disruptions. This suggests a relationship between (re)configuration, structural capital (Polyviou et al. 2020) and velocity. Juttner and Maklan (2011) discovered that visibility enhances velocity by enabling timely interventions. This is supported by Johnson et al. (2013), who identified how, through increased visibility, Network Rail were able to build rapid response capabilities into the SC.

Like visibility, velocity is widely cited as an antecedent of agility (Christopher and Peck 2004; Ponis and Koronis 2012; Wieland and Wallenburg 2013; Tukamuhabwa et al. 2015; Kamalahmadi and Parast 2016; Purvis et al. 2016; Ali et al. 2017a; Adobor and McMullen 2018; Kochan and Nowicki 2018; Stone and Rahimifard 2018; Sawyerr and Harrison 2020). In general, agility is thought to depend on both visibility and velocity. This is explained by Kamalahmadi and Parast (2016), who state decision makers need a complete understanding of the SC (visibility) and the ability to navigate it quickly (velocity) to make timely, well-informed decisions.

Along with visibility and velocity, Purvis et al. (2016), Kochan and Nowicki (2018) and Sawyerr and Harrison (2020) include flexibility as an antecedent of agility. Flexibility as an antecedent of agility can be explained by the overlap between strategies for creating flexibility and velocity. Streamlined processes and flexible supplier and order fulfilment arrangements are both cited as strategies for creating flexibility (Table 8). Both strategies are also presented as methods for increasing velocity by Christopher and Peck (2004).

2.4.5.6 Risk Management

Christopher et al. (2002), cited in Datta (2017, p. 1399) define SC risk management as:

the identification of potential sources of risk and implementation of appropriate strategies through a coordinated approach among supply chain members, to reduce supply chain vulnerability.

Risk management facilitates SCRes (Table 10) by enabling the anticipation, identification, mitigation, and prevention of risks (Chowdhury and Quaddus 2016; Adobor 2019; Sawyerr and Harrison 2020). It is crucial that risk management is not conducted sporadically (Ponomarov and Holcomb 2009; Pettit et al. 2010; Juttner and Maklan 2011; Scholten et al. 2014), rather, it should form “*a continuous cycle of identification of hazards, assessment of risks, analysis of controls, choosing controls, implementing controls and review*” (Pettit et al. 2010, p. 4). Juttner and Maklan (2011) observed this continuous nature of risk management in the three firms they studied. Continuous risk management both pre-and-post-disruption facilitates disruption understanding. This includes the cause of disruptions, how they spread and how they can be handled, therefore, enhancing future pre-disruption risk management (Blackhurst et al. 2011).

Before a disruption occurs, risk management involves assessing vulnerabilities (Sheffi and Rice 2005), during which, managers typically answer three questions:

1. What can go wrong?
2. What is the likelihood of it occurring?
3. What are the consequences if it does happen?

Disruptions can be categorised as; (1) random events (e.g., natural disasters), (2) accidents, and (3) intentional disruptions (e.g., sabotage and terrorism) (Sheffi and Rice 2005). Estimating the likelihood of disruptions varies by type. For random events, historical data is used. Accidents are predicted using industry data and past accident reports.

Estimating the likelihood of intentional disruptions is challenging due to the lack of historical data and the involvement of specific parties' decision making and actions (Sheffi and Rice 2005).

Organisations can then generate an "*enterprise vulnerability map*" (Sheffi and Rice 2005, p. 44), categorising disruptions by probability (high – low) and consequences (light – severe). Vulnerability is highest when probability is high, and consequences severe (Soni and Jain 2011). Again, continuousness is crucial to capture emerging threats (Sheffi and Rice 2005). After assessing vulnerabilities, risk management strategies can be implemented (Colicchia et al. 2010).

Colicchia et al. (2010) present three approaches to risk management. The first approach is to implement buffers along the SC, including surplus inventory and multiple suppliers, which aims to absorb disruptions. The other two, mitigation strategies and contingency plans, look to reduce the probability and impact of risks (Colicchia et al. 2010). Mitigation strategies are implemented before the unforeseeable occurrence of an event to reduce its chance of occurring. Alternatively, contingency plans are activated following a disruption to confront and reduce its impact (Colicchia et al. 2010). Mitigation strategies involve secure flows of information and risk sharing between SC nodes (Jain et al. 2017). This supports the idea that collaboration is an enabler of risk management (Christopher and Peck 2004; Blackhurst et al. 2011; Soni and Jain 2011; Leat and Revoredo-Giha 2013; Tukamuhabwa et al. 2015; Wang et al. 2016; Datta 2017; Jain et al. 2017; Tukamuhabwa et al. 2017; Ali and Golgeci 2019; Sawyerr and Harrison 2020). Risk sharing requires risk analysis and assessment, again, on a continuous basis, which Ponomarov and Holcomb (2009) state can only be achieved with management support. Contingency plans reduce reaction time (Blackhurst et al. 2011; Hohenstein et al. 2015), especially in the case of self-executing plans,

which trigger automatically following a disruption (Blackhurst et al. 2011; Scholten et al. 2014).

Colicchia et al. (2010) explore the impact of mitigation strategies and contingency plans on supply lead time (SLT) variability, a prominent vulnerability within inbound logistics, particularly in a global context where distance, loading and unloading, and custom clearances play a role. They found that when using a single strategy, contingency plans proved more effective, reducing SLT variability by 35.1%, compared to a 16% reduction using mitigation strategies. By implementing both, SLT variability was further reduced to 40.4% (Colicchia et al. 2010).

Saenz et al. (2018) call for an alignment between SC design and risk management to generate SCRes, considering the competitive priority of the SC (cost-reduction vs responsiveness) (Saenz and Revilla 2014), coupled with its scope (local vs global). This suggests a relationship between risk management and (re)configuration. Prioritising cost-reduction means placing the minimising of SC costs above all other objectives and is often found within markets with stable demand (Saenz et al. 2018). Alternatively, businesses that prioritise responsiveness often compete through customisation, operating in markets with unpredictable demand and short lead times (Saenz et al. 2018). Saenz et al. (2018) state that a SC does not necessarily fall into a single category, rather, there is a spectrum with each competitive priority at opposite ends. Resulting in a continuous trade-off between cost-reduction and responsiveness strategies, as with each comes a distinctively different looking SC (Saenz et al. 2018).

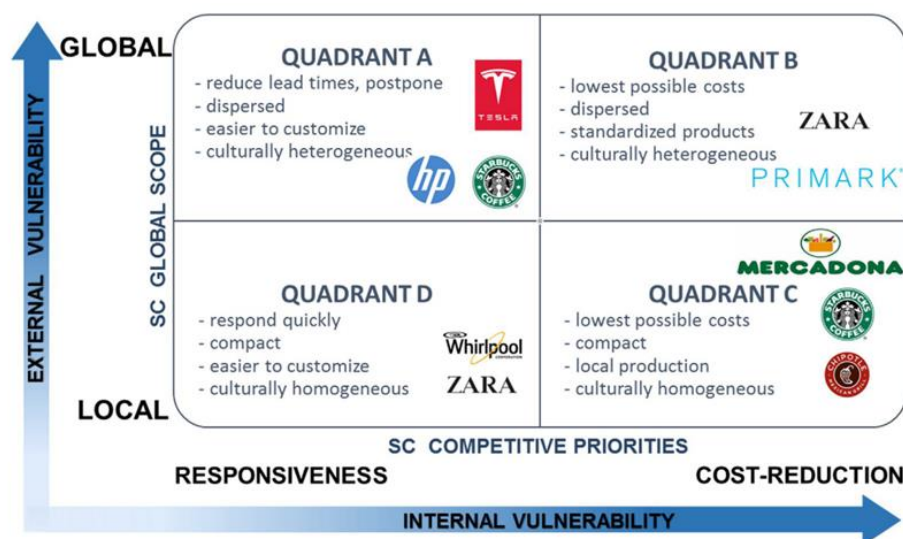
By recognising competitive priorities, a SCs can identify its internal vulnerabilities, as internal vulnerabilities relate to the tightness of nodes within the SC. Again, illustrating a relationship between (re)configuration and risk management. With cost-reduction strategies comes an

increasingly rigid and tightly linked system, increasing internal vulnerability. Alternatively, by prioritising responsiveness, reaction times are improved, reducing internal vulnerability (Saenz et al. 2018). This supports the existence of a relationship between (re)configuration and velocity.

The scope of an SC also influences its risk. Having agreements in place with local suppliers creates a faster, smoother SC. Increased market complexity means global SCs are more susceptible to larger disruptions, because as operations expand, the scope in which disruptions can occur expands with it (Saenz et al. 2018). External vulnerabilities are largely out of the control of SC managers and therefore difficult to manage. Hence, it is important to take into consideration the scope of a global organisation (Saenz et al. 2018).

Having determined the scope and competitive priority of the SC, managers can identify the appropriate design for their SC using the matrix below (Figure 5). Each cell represents one of four combinations of scope and competitive priority.

Figure 5: SC vulnerability matrix.

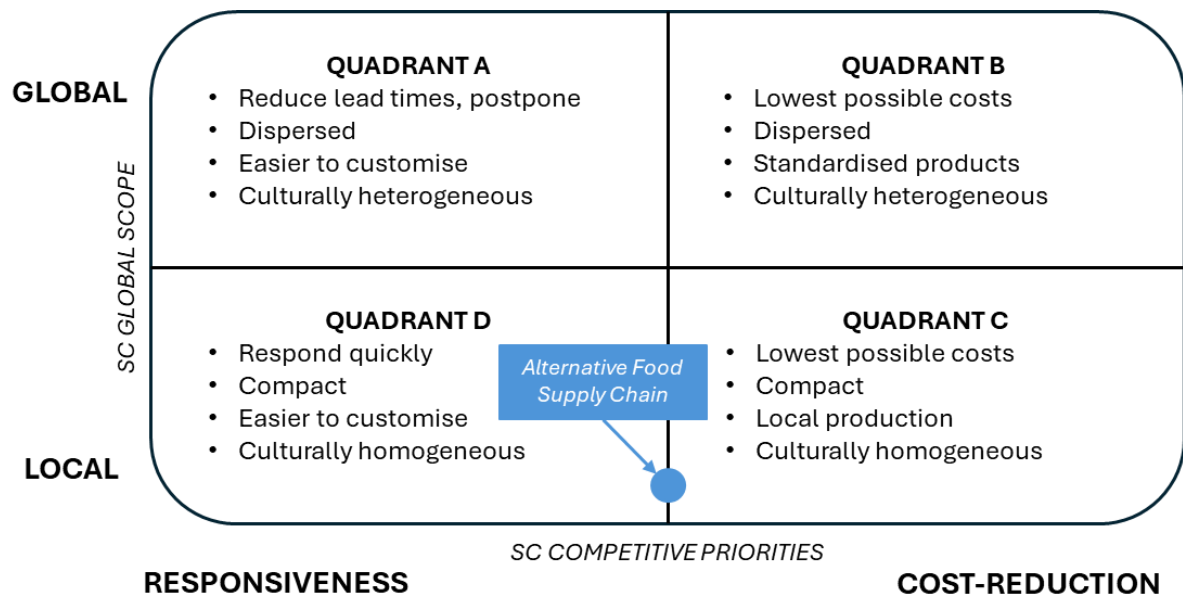


Source: Saenz et al. (2018).

In the 'Responsive – Global' cell, SCs are designed for high-value items and responsiveness, e.g. Tesla. These global firms mitigate internal vulnerabilities through flexible inventory and responsiveness (Saenz et al. 2018). 'Cost-reduction – Global' SCs emphasise standardisation, using low-cost factories to minimise costs. An example being Primark. This strategy involves a tight, global network and extreme vulnerability, such as the case when a fire broke out at one of Primark's Bangladesh factories in 2013 (Saenz et al. 2018). An example of a 'Cost-reduction – Local' is Spanish retailer Mercadona, who uses local bakeries due to an appreciation for local produce among customers, minimising internal vulnerabilities. Finally, 'Responsive – Local' SCs are synonymous with velocity and lower vulnerability due to storing inventory close to the target market (Saenz et al. 2018). Due to the complex environments SCs operate in, many organisations do not fit into a single category (Saenz et al. 2018).

Figure 6, below, depicts an alternative food SC's vulnerability matrix within a food poverty context. Alternative food SC provision prioritises both cost-reduction and responsiveness in its pursuit of tackling food poverty. This is because it must ensure both the accessibility and affordability of food necessary to sustain a healthy diet. With an emphasis on accessibility, alternative food SCs are also argued to be local in scope. This is supported by the existence of food deserts, a prominent cause of food poverty. Wang et al. (2018) argues that only when mobility issues are addressed can food deserts be eliminated. However, given that access to cars and public transport is typically lacking among disadvantaged groups (Lang and Caraher 1998, cited in Wrigley 2002), there is a need for alternative food SCs to be located close to those they aim to lift out of food poverty. Therefore, within a food poverty context, alternative food SCs do not fall into a single quadrant with the vulnerability matrix, rather it falls between quadrants C and D (Figure 6), involving a constant trade-off between cost-reduction and responsiveness strategies.

Figure 6: Alternative food SC vulnerability matrix



Source: Authors; Saenz et al. (2018).

AFSCs (Stone and Rahimifard 2018) and / or PPSCs (Ali et al. 2018), which involve food production and distribution, and are the focus of this research, face unique challenges due to short product shelf-life and inconsistency in the availability and quality of raw materials (Stone and Rahimifard 2018). Inconsistencies in the availability and quality of raw materials is particularly challenging for AFSCs / PPSCs within a food poverty context due to a reliance on 'Surplus Food Redistribution' (SFR). SFR is a commonly adopted approach to the tackling of food poverty among food aid organisations (Caplan 2017; Papargyropoulou et al. 2022), involving the collection and redistribution of food deemed 'surplus' to those in need. Food may be considered 'surplus' for a variety of reasons, including seasonal demand variations, approaching 'use by' / 'best before' dates, and damaged packaging (Caplan 2017). Papargyropoulou et al. (2022, p. 5) attributes the popularity of SFR among organisations to "a moral and ethical standpoint of it being 'wrong' that food was being wasted whilst people could not afford to eat, meaning that SFR was simply the 'right' thing to do". Consequently, SFR has been viewed as a way of bringing together the issues of food poverty and food

waste in a 'Win-win' situation (Caplan 2017; Lee et al. 2017; Papargyropoulou et al. 2022). However, Papargyropoulou et al. (2022) found that there is typically a mismatch between the food donated and the food needed by food aid providers, with the surplus food provided often of no use. AFSCs are also particularly vulnerable to upstream disruptions, which can cause failures at the midstream and retail level (Aboah et al. 2019).

Due to shorter life cycles, perishable goods require Cold Chain Logistics (CCL) that is, the continuous storage and transportation of fresh food under controlled temperature (Ali et al. 2018). This is to maintain or extend shelf life, with failure to do so causing increased wastage, food shortage and economic loss (Ali et al. 2018). Four risks specific to the CCL of PPSCs are (1) temperature breakdown, (2) substandard packaging, (3) natural disaster, and (4) deterioration in product quality due to delays in delivery. CCL requires careful monitoring and adjustment of temperature throughout the transportation process, especially when passing through differing climates. Hence, a critical risk is temperature breakdown, occurring due to negligence or a lack of training (Ali et al. 2018). High quality packaging is essential to maintaining food quality during cold chain transportation, with low temperatures and high humidity levels capable of causing decay (Ali et al. 2017b). Therefore, sub-standard packaging poses a risk to PPSCs (Ali et al. 2018). While natural disasters pose a risk to all SCs, they are particularly detrimental to PPSCs given their ability to destroy infrastructure and the short shelf life of products (Ali et al. 2018). Finally, Ali et al. (2018) found that products were rarely transported immediately after harvest, negatively impacting their quality and shelf-life. This deterioration is particularly impactful as customers become increasingly demanding (Soni and Jain 2011) with lower tolerances to declines in food quality and food safety (Stone and Rahimifard 2018). This risk can be mitigated by quality management systems such as pre-delivery quality tests (Ali et al. 2018). Finally, traditional strategies of

made-to-order and the holding of surplus stock are not applicable for perishable products. Thus, AFSCs / PPSCs face unique supply-demand mismatch risks (Ali et al. 2017b). Hence, producers require early forecasts from packers, who, in turn, need information from retailers and wholesalers (Ali et al. 2017b).

Risk management is not confined to assessing vulnerabilities and implementing preventive measures. It is also important to train employees, suppliers and customers about SC risks, the significance of vulnerability, and their roles in them (Rice and Caniato 2003; Blackhurst et al. 2011; Scholten et al. 2014).

Tukamuhabwa et al. (2017, p. 501) state that, to properly understand the threats faced by a SC, a deep understanding of "*the political, cultural and territorial context in which a supply network is embedded*" is integral. This suggests that risk management is linked to SC understanding. The UK finds itself amid a high-impact political situation in the form of Brexit repercussions (Saenz et al. 2018). Brexit holds highly probable and significant consequences for UK SCs due to the likelihood of impacting availability, cost, supply, and demand (Hendry et al. 2019). Hendry et al. (2019) explains how building resilience during constitutional changes like Brexit differs from that during other disruptions. Attributed to the event being known and deliberate with a long horizon and high certainty of disruption, albeit, not intentional. This extended build up places increased emphasis on the preparedness phase (Hendry et al. 2019).

Many authors have found that collaboration supports risk management (Christopher and Peck 2004; Blackhurst et al. 2011; Soni and Jain 2011; Leat and Revoredo-Giha 2013; Tukamuhabwa et al. 2015; Wang et al. 2016; Datta 2017; Jain et al. 2017; Tukamuhabwa et al. 2017; Ali and Golgeci 2019; Sawyerr and Harrison 2020). According to Christopher and Peck (2004), a high level of collaboration is required within the SC to

identify and manage risks. Information sharing reduces uncertainty by improving transparency (Tukamuhabwa et al. 2015) and enabling risk-sharing (Jain et al. 2017). Soni and Jain (2011) argue that collaboration, especially synchronised decision-making and aligned incentives, prevents opportunistic behaviour which could harm the entire SC. With any collaboration, there is a positive relationship between its length and its ability to handle disruptions (Johnson et al. 2013). Moreover, trust, a sub-element of collaboration, reduces risk (Adobor 2019) and the concealing of problems (Wicher and Lenort 2012), and promotes risk sharing (Jain et al. 2017; Adobor 2019). Finally, Sawyerr and Harrison (2020) found that decision making during times of crisis required information sharing, with information used to identify the required resources and expertise to handle the crisis. Jain et al. (2017) found that greater knowledge of nodes throughout the SC enabled more accurately targeted risk management and risk sharing. This suggests that visibility is an enabler of risk management. This is supported by both Blackhurst et al. (2011) and Juttner and Maklan (2011) who found real-time use of SC monitoring systems enabled firms to receive regular updates surrounding a wide range of SC components, from transportation to security, in turn, aiding strategic decision making and the avoidance of imminent disruptions. Christopher and Peck (2004) emphasise, when using monitoring systems, the importance of looking out for longer lead times, single sourcing of supplies and nodes between which there is little-to-no information sharing.

Risk management could also be identified as an antecedent of agility (Blackhurst et al. 2011; Ambulkar et al. 2015; Jain et al. 2017; Stone and Rahimifard 2018; Sawyerr and Harrison 2020). Ambulkar et al. (2015) state that risk management facilitates timely reaction to disruptions. This is supported by Jain et al. (2017), who emphasises the positive effect of risk management on responsiveness. Furthermore, Sawyerr and Harrison (2020) state that agility can be enhanced by using tested contingency

plans. This is supported by Blackhurst et al. (2011) who mention that these strategies can reduce response time.

The literature depicts risk management as a multi-phase element of SCRes. Ali and Golgeci (2019) categorise risk management as a rebound phase element, enabling SCs to recover from disruptions and continue operating at a previous or enhanced level. Hohenstein et al. (2015) categorise contingency planning, an integral part of risk management, as a readiness element. Alternatively, Ali et al. (2017a) argue that contingency planning enhances a firm's ability to recover, while Stone and Rahimifard (2018) categorise risk management as an adaptive phase element. Hence, this research considers risk management as both a proactive and reactive element of SCRes.

Here, in line with the literature (Christopher and Peck 2004; Kamalahmadi and Parast 2016; Datta 2017; Kochan and Nowicki 2018; Stone and Rahimifard 2018), risk management is considered a core element of SCRes. However, contrary to Kamalahmadi and Parast (2016), who consider contingency plans a core component of SCRes, here it is considered a sub-element of risk management (Stone and Rahimifard 2018; Polyviou et al. 2020).

2.4.5.7 Human Resource Management

In terms of SCRes, HRM involves educating and training employees to handle disruptions (Hohenstein et al. 2015). Blackhurst et al. (2011) found equipping employees with an understanding of cost / benefit trade-offs and the ability to conduct post-disruption analysis were critical to handling SC risks. Education and training enable managers to respond effectively during disruptions, minimising wasted effort and helping to stabilise the SC quicker during disruptions (Blackhurst et al. 2011). Furthermore, Ali et al. (2018) found that a multi-skilled workforce minimised the occurrence of disruptions and enabled SCs to rebound

quicker following them. This suggests that HRM is an integral component of both risk management and velocity. However, Scholten et al. (2014) emphasises the importance of training not only employees, but also suppliers and customers about SC risks.

Scholten et al. (2019) highlight six learning mechanisms, across 3 phases, for improving SCRes (Table 11).

Table 11: Learning mechanisms for SCRes.

	Phases of SCRes		
	Preparation	Response	Recovery
Learning Mechanism	Processual	Situational	Experiential
	Anticipative	Collaborative	Vicarious

Processual and anticipative learning occur during the preparation phase. Processual learning results in unintentional changes in operations, while anticipative learning, usually occurring through formal training and collaboration, results in intentional changes to operations (Scholten et al. 2019). Situational and collaborative learning both occur during the response phase. Situation learning, often occurring unintentionally following a disruption, highlights previously unidentified gaps in operations. Collaborative learning occurs through knowledge transfer in response to a disruption due to the lack of a contingency plan (Scholten et al. 2019). Finally, there can be experiential and vicarious learning. Experiential learning comes from experience, occurring through reflection during formal reviews, and improves future decision-making. Vicarious learning addresses shortcomings in collaboration, particularly information sharing, which led to a disruption (Scholten et al. 2019). Therefore, here, HRM is considered both a proactive (Hohenstein et al. 2015; Ali et al. 2017a; Ali and Golgeci 2019) and reactive element (Hohenstein et al. 2015) of SCRes.

2.4.5.8 Culture

Kamalahmadi and Parast (2016) state that resilience is embedded in the culture of a system. Culture is primarily discussed throughout the SCRes literature in relation to risk management (Christopher and Peck 2004; Mandal 2012; Scholten et al. 2014; Chowdhury and Quaddus 2016; Kamalahmadi and Parast 2016; Ali et al. 2017a; Datta 2017; Stone and Rahimifard 2018; Adobor 2019; Ali and Golgeci 2019; Li et al. 2020; Polyviou et al. 2020; Sawyerr and Harrison 2020). An RMC is defined as a *“General awareness and consciousness of, concern about, seriousness toward, and recognition of opportunity to learn from supply chain disruptions”* (Bode et al. 2011. Cited in Polyviou et al. 2020, p. 71). To establish an RMC, it is essential to integrate risk management into the decision-making process at all organisational levels (Christopher and Peck 2004; Adobor 2019; Polyviou et al. 2020). For high-reliability organisations, that is, organisations capable of avoiding failure whilst operating under complex and precarious conditions (Linnenluecke 2017, cited in Sawyerr and Harrison 2020), an RMC was implemented through a *“preoccupation with failure”* (Sawyerr and Harrison 2020, p. 85).

2.4.5.9 Supply Chain Understanding / Knowledge

According to Christopher and Peck (2004), identifying ‘pinch points’ and ‘critical paths’ is key to understanding the SC. Pinch points refer to bottlenecks within the SC where capacity is limited, and alternative options are lacking. Alternatively, critical paths can be identified by the presence of one or more of the following: (1) extended lead times, (2) one supplier with no short-term alternative, (3) absence of information sharing, and (4) high levels of identifiable risk (Christopher and Peck 2004).

Collaboration, visibility, HRM and risk management all contribute to generating SC understanding / knowledge. Through collaboration,

particularly information sharing, SC understanding / knowledge can be broadened in relation to: the physical structure of the SC, along with the location of members within it (Ponis and Koronis 2012; Johnson et al. 2013; Scholten et al. 2014); organisational processes (Scholten and Schilder 2015); current inventory levels and alternative suppliers (Scholten et al. 2014); the presence and generation of expertise (Scholten et al. 2014), with the latter through access to education and training (Blackhurst et al. 2011); historical disruptions (Ponomarov and Holcomb 2009); and sales statistics, forecasts and trends (Johnson et al. 2013; Scholten et al. 2014; Brusset and Teller 2017).

Visibility, and subsequent transparency (Scholten and Schilder 2015), enhances SC understanding / knowledge through the accumulation of "*strategic*", "*tactical*" and "*operational*" knowledge (Christopher and Peck 2004, p. 9). Strategic knowledge concerns trends and emerging issues that may compromise the SC in the future, often generated through a PEST (Political, Economic, Social, and Technological) analysis. Tactical knowledge refers to the assessment of operational risks, supply, and demand, while operational knowledge relates to the day-to-day management of the organisation (Christopher and Peck 2004). Furthermore, Johnson et al. (2013) state that visibility, emanating from previous projects, enhances knowledge.

Finally, it is argued that risk management is integral to generating SC understanding / knowledge (Christopher and Peck 2004; Blackhurst et al. 2011; Scholten et al. 2014; Ambulkar et al. 2015), with Ambulkar et al. (2015) stating that risk management facilitates knowledge creation through reducing process ambiguity, while Blackhurst et al. (2011) state that post-disruption analysis enhances knowledge surrounding disruption creation and resolution.

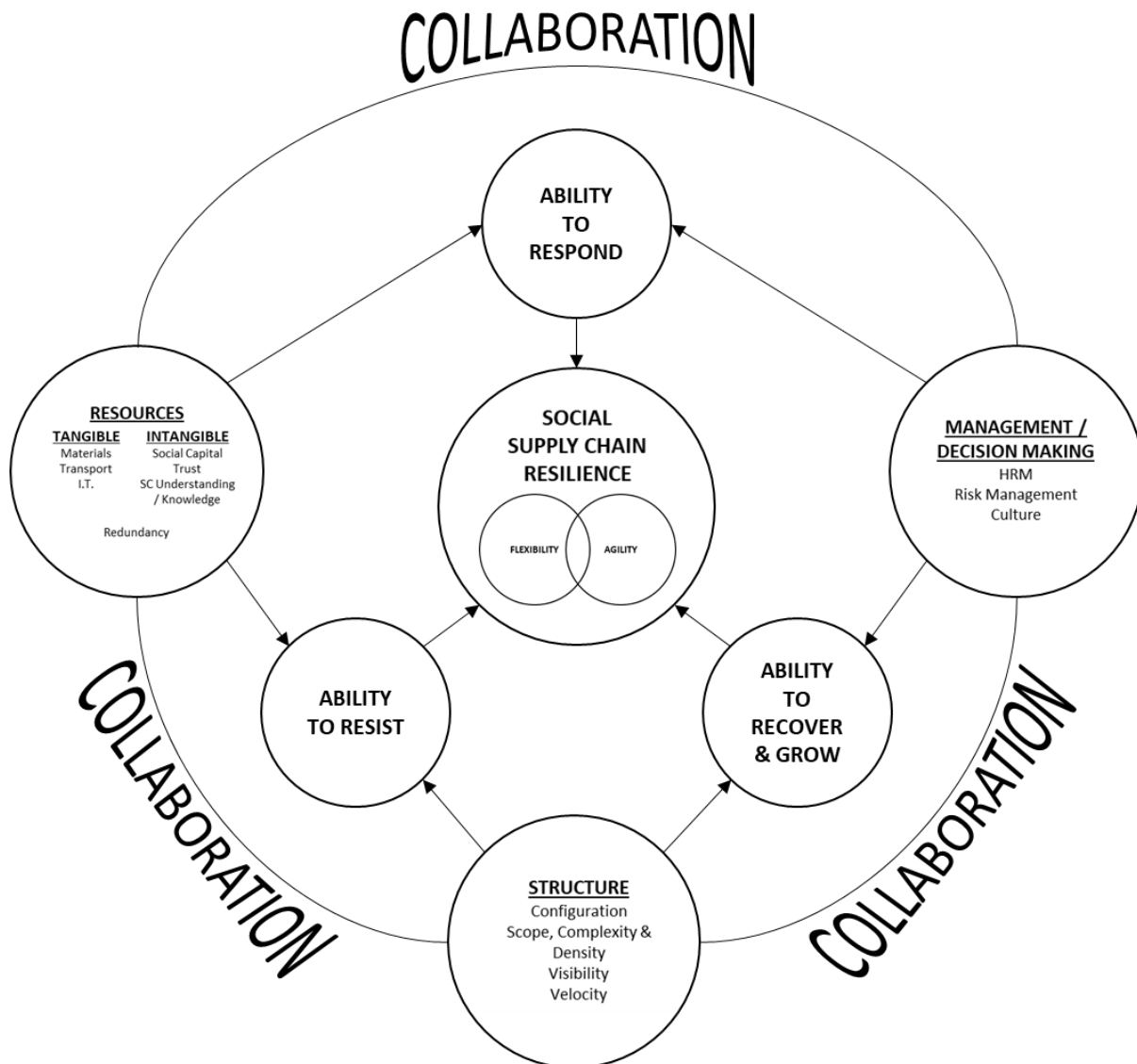
2.4.5.10 Information Technology

Tukamuhabwa et al. (2015) claim that information technology (I.T.) is a crucial component of most resilience strategies. Jain et al. (2017) state that I.T. aids collaboration, a view supported by Adobor and McMullen (2018) and Dubey et al. (2019), who both identified that I.T. supported information sharing. Jain et al. (2017) also identifies a positive relationship between I.T. and risk sharing, a sub-element of risk management. Furthermore, I.T. improves visibility (Gunasekaran et al. 2015, cited in Tukamuhabwa et al. 2017; Adobor and McMullen 2018). This is again supported by Dubey et al. (2019), who state that 'connectivity', synonymous with I.T., enhances visibility. Additionally, I.T.'s instant messaging capabilities, including email, could be considered supportive of velocity. This culminates in supporting Ali et al.'s (2017b) claim that the absence of I.T. acts as a barrier to SCRes among SMEs. Hence, here, I.T. is considered a core component of SCRes.

2.4.6 Supply Chain Resilience – Conceptual Framework

From the preceding LR, the following conceptual framework for SCRes was developed (Figure 7).

Figure 7: Conceptual framework for SCRes.



To be resilient, it is argued that a SC must be both agile and flexible. Agility supports SCRes through enabling SCs to respond quickly to unforeseen events (Kamalahmadi and Parast 2016; Purvis et al. 2016), while operational and sourcing flexibility (Stone and Rahimifard 2018; Sawyerr and Harrison 2020) supports SCRes through enabling the avoidance (Bradaschia and Pereira 2015) and containment (Juttner and Maklan 2011; Soni and Jain 2011) of disruptions. Consequently, Figure 7

hypotheses that, in being agile and flexible, a SC can resist, respond, recover & grow. This is supported by both being characterised as resistance, response, and recovery phase elements within the literature. The ability to grow has been grouped together with the ability to recover for two reasons. Firstly, to achieve growth insinuates that recovery has taken place. Secondly, while growth is identified as a phase of SCRes, it is not viewed as a mandatory phase of SCRes like recovery, instead being something to aspire to achieve. It is hypothesized that to be able resist, respond, recover & grow, requires a combination of elements relating to resources, structure and management / decision making.

2.4.6.1 Ability to Resist, Respond, Recover & Grow

2.4.6.1.1 *Ability to Resist*

To be able resist disruptions, it is believed that a SC must leverage a combination of elements relating to resources and structure. Perishable products represent a necessary material for PPSCs, thus, access to fresh food is critical. These materials bring with them their own challenges due to their perishable nature (Ali et al. 2018; Stone and Rahimifard 2018), such as short shelf-lives and inconsistencies in availability due to seasonality (Stone and Rahimifard 2018). To be able to resist disruptions because of these challenges (e.g. wastage, food shortage and economic loss (Ali et al. 2018)), SCs must maintain CCL and enhance velocity. To maintain CCL, a SC requires appropriate storage facilities, including transport capable of moving food under controlled temperature (Ali et al. 2018). A SC can enhance its velocity through its configuration. Here, configuring a SC for SCRes is believed to revolve around node density, complexity, and criticality.

This includes streamlining processes through reducing the number of stages within the SC (Christopher and Peck 2004) as well as having distributed decision-making (Sawyerr and Harrison 2020). High node

density can also increase velocity through limited geographical scope and local sourcing (Saenz et al. 2018), resulting in reduced lead times (Christopher and Peck 2004; Wicher and Lenort 2012). Velocity is also aided by I.T., through its instant messaging services, such as email.

SC Visibility enables real-time monitoring of this inventory along the SC (Blackhurst et al. 2011; Ali et al. 2017a; Jain et al. 2017; Stone and Rahimifard 2018; Aboah et al. 2019). In doing so, SC visibility supports the ability to resist disruptions by aiding in the detection of potential and impending disruptions (Blackhurst et al. 2011; Tukamuhabwa et al. 2015; Ali et al. 2017a; Jain et al. 2017). Like velocity, SC visibility is also believed to be enhanced by I.T. (Adobor and McMullen 2018).

SC visibility also contributes to the development of SC understanding / knowledge through the accumulation of “*strategic*”, “*tactical*” and “*operational*” knowledge (Christopher and Peck 2004, p. 9), coupled with an understanding of “*the political, cultural and territorial context in which a supply network is embedded*” (Tukamuhabwa et al. 2017, p. 501). This knowledge can enhance a SC’s ability to resist disruption by informing on emerging issues that may compromise the future. In developing SC understanding / knowledge, ‘pinch points’ and ‘critical paths’ can be identified. This knowledge should inform the strategic implementation of redundancy along the SC, with excessive redundancy being viewed as detrimental to SCRes (Christopher and Peck 2004; Blackhurst et al. 2011; Tukamuhabwa et al. 2015; Purvis et al. 2016; Adobor and McMullen 2018; Sawyerr and Harrison 2020). Here, SCRes is argued to utilise both tangible and intangible redundancy (Juttner and Maklan 2011; Sawyerr and Harrison 2020) in the pursuit of flexibility. Most commonly, redundancy takes the form of safety stock and multi-sourcing (Table 9). This redundancy enhances a SC’s ability to resist by acting as a buffer against disruptions. While it is argued that node complexity should be minimised to preserve inter-organisational trust, commitment, and

cooperation (Chowdhury et al. 2019), greater node complexity through redundancy, specifically multi-sourcing, is permitted under this framework.

Social capital is believed to further enhance the ability to resist disruptions, with structural, cognitive, and relational capital each supporting disruption avoidance (Polyviou et al. 2020). This is done through improved communication and response time (structural capital), the accumulation of knowledge, experience and resources (cognitive capital; relational capital) and the creation of a stable skill base (cognitive capital) (Polyviou et al. 2020). This is again aided by configuration and the presence of close geographical proximity (high node density) through enabling face-to-face meetings (Polyviou et al. 2020).

2.4.6.1.2 Ability to Respond

It is hypothesised that through a combination of elements relating to resources and management / decision making, a SC can respond to disruptions. HRM, specifically the education and training of employees, enhances a SC's ability to respond to disruptions by supporting post-disruption analysis (Blackhurst et al. 2011) and disruption handling (Blackhurst et al. 2011; Hohenstein et al. 2015). The educating of employees also represents a key component of risk management (Rice and Caniato 2003; Blackhurst et al. 2011; Scholten et al. 2014). Risk management, specifically the implementation of buffers, and contingency planning (Colicchia et al. 2010), enhances a SC's ability to respond to disruptions by facilitating effective and timely responsiveness (Blackhurst et al. 2011; Ambulkar et al. 2015; Jain et al. 2017). The implementation of buffers along the SC requires redundancy, such as surplus inventory and multiple suppliers, which then absorb disruptions, while contingency plans activate following a disruption to confront and reduce its impact (Colicchia et al. 2010).

In addition to facilitating risk management, social capital is believed to directly enhance a SC's ability to respond to disruption. For example, collective action, facilitated by small management teams and flat organisational hierarchies (structural capital) can enable a SC to organise and respond quickly to disruptions (Polyviou et al. 2020). SC understanding / knowledge is also believed to support risk management, with greater knowledge of nodes throughout the SC enabling more accurate risk management, as well as risk sharing (Jain et al. 2017). The relationship between risk management and SC understanding / knowledge is believed to be mutually beneficial with risk management reducing process ambiguity (Ambulkar et al. 2015) and post-disruption analysis enhancing SC knowledge around the creation and resolution of disruptions (Blackhurst et al. 2011). By integrating risk management into the decision-making process at all levels of the SC, an RMC can be generated (Christopher and Peck 2004; Adobor 2019; Polyviou et al. 2020). With this "*preoccupation with failure*" (Sawyerr and Harrison 2020, p. 85) comes an awareness of the importance of learning from disruptions when they occur (Polyviou et al. 2020). Thus, enhancing the SCs future ability to respond to disruptions.

2.4.6.1.3 Ability to Recover & Grow

It is argued that through a combination of elements relating to structure and management / decision making, a SC can develop the ability to recover (and potentially grow) following a disruption. HRM is believed to aid recovery and growth with the educating and training of managers, coupled with the presence of a multi-skilled workforce, enabling SCs to rebound quicker (Blackhurst et al. 2011; Ali et al. 2018). Thus, also enhancing velocity. Risk management, specifically contingency planning, is also believed to aid a SC in recovering following a disruption (Ali et al. 2017a). This is attributed to the reduction in response time because of contingency planning (Blackhurst et al. 2011; Scholten et al. 2014; Hohenstein et al. 2015). By reducing reaction time, contingency plans,

and therefore risk management, also enhances velocity (Blackhurst et al. 2011; Scholten et al. 2014; Hohenstein et al. 2015), especially when using self-executing contingency plans.

Risk management further enhances a SC's ability to recover through post-disruption learning. This learning supports the SC in understanding how disruptions spread and how they can be handled, thus supporting recovery, along with future pre-disruption risk management (Blackhurst et al. 2011) and responses. Risk management is believed to be heavily influenced by the configuration of the SC, with Saenz et al. (2018) calling for an alignment between the two. With high node density, the scope for disruptions to occur decreases (Sheffi 2005; Purvis et al. 2016; Saenz et al. 2018). Reducing the scope for disruptions to occur is deemed critical to SCRes because external vulnerabilities are mostly outside the control of managers, and therefore difficult to manage (Saenz et al. 2018). Furthermore, through a decentralised management structure, configuration can both aid risk management and directly enhance a SC's ability to recover by facilitating quick decision-making during disruptions (Sawyer and Harrison 2020). Again, by incorporating risk management into the decision-making process at all levels of the SC, an RMC can be generated (Christopher and Peck 2004; Adobor 2019; Polyviou et al. 2020). It is argued here that an RMC also enhances a SC's ability to recover from disruptions, with post-disruption learning informing the SC of how to overcome similar disruptions in the future.

In enabling the real-time monitoring of inventory (Blackhurst et al. 2011; Ali et al. 2017a; Jain et al. 2017; Stone and Rahimifard 2018; Aboah et al. 2019), SC visibility is also believed to enhance a SC's ability to recover and grow by facilitating disruption learning (Blackhurst et al. 2011; Tukamuhabwa et al. 2015; Ali et al. 2017a; Jain et al. 2017) and informed decision-making (Juttner and Maklan 2011; Soni and Jain 2011; Scholten et al. 2014; Tukamuhabwa et al. 2015; Kamalahmadi and Parast 2016).

This is because it is believed only when managers have complete knowledge of the SC can they make informed decisions and take the correct actions to address disruptions (Kamalahmadi and Parast 2016). This also suggests that SC visibility contributes to risk management.

2.4.6.1.4 Collaboration

In line with a SNT lens, collaboration is viewed as something of a 'golden thread' which runs throughout the development of SCRes, influencing resources, structure and management / decision making, and therefore the ability to resist, respond, recover and grow. Occurring through information sharing, joint relationship effort and joint knowledge creation (Table 7), collaboration is believed to primarily occur between private organisations within the SC, both vertically and horizontally (Johnson et al. 2013; Leat and Revoredo-Giha 2013; Scholten et al. 2014; Manning and Soon 2016; Hendry et al. 2019). However, collaboration with public organisations is also believed to occur.

For collaboration to support the resource, structure and management / decision making elements discussed here, there needs to be trust and social capital across the SC. Here, the relationship between both trust and social capital and collaboration is believed to be circular in nature, once trust is built and collaboration takes place, trust can be reinforced (Johnson et al. 2013), while continued collaboration leads to greater social capital. For example, long tenure (cognitive capital) promotes knowledge exchange (collaboration), which facilitates the acquisition of tacit knowledge (relational capital) as well as a willingness to further collaborate through information sharing. Both trust and social capital, and subsequently collaboration, can be built through configuration. Node complexity should be kept to a minimum to not hinder inter-organisational trust, commitment, and cooperation (Chowdhury et al. 2019). Furthermore, I.T. is believed to play a vital role in the development of SCRes as an enabler of collaboration (Jain et al. 2017) through

facilitating information sharing (Adobor and McMullen 2018; Dubey et al. 2019). Hence, like Ali et al. (2017b), the absence of I.T. is viewed as a barrier to SCRes.

Collaboration, particularly information sharing, can significantly broaden SC understanding / knowledge in a variety of areas, including, but not limited to, structure (Ponis and Koronis 2012; Johnson et al. 2013; Scholten et al. 2014), processes (Scholten and Schilder 2015) and resources (Blackhurst et al. 2011; Scholten et al. 2014).

When it comes to structure, visibility is believed to be rooted in collaboration, especially information sharing (Scholten and Schilder 2015; Kamalahmadi and Parast 2016; Jain et al. 2017; Dubey et al. 2019), with SC visibility at its greatest when there is vertical collaboration both upstream and downstream. The relationship between collaboration and SC visibility is also believed to be circular in nature with visibility facilitating further collaboration (Kamalahmadi and Parast 2016; Jain et al. 2017; Dubey et al. 2019).

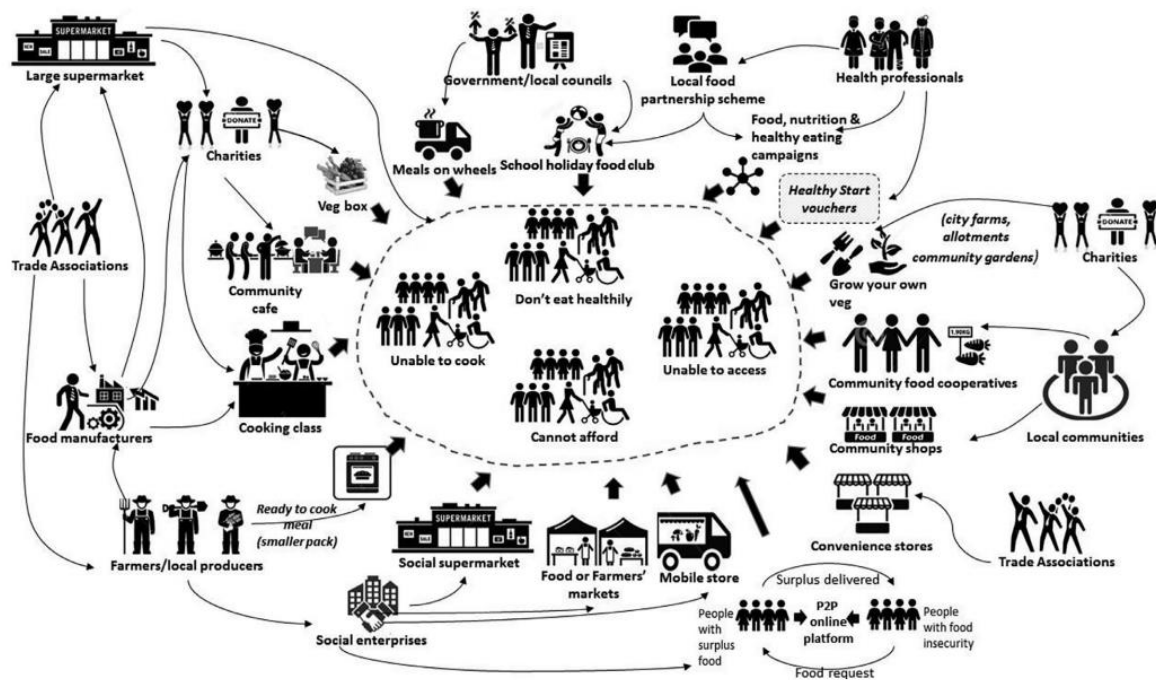
Like visibility, velocity is also believed to be enhanced by collaboration. For example, collaboration, specifically information sharing, can enhance velocity by reducing in-bound times through synchronised scheduling (Christopher and Peck 2004), as well as by reducing cycle times (Scholten and Schilder 2015). Furthermore, collaboration can enhance velocity through establishing predefined lines of communication, thus eliminating confusion (Blackhurst et al. 2011). Configuration, specifically high node density, is believed to positively influence collaboration by enabling face-to-face exchange (Polyviou et al. 2020). This, in turn, improves communication as the most effective form of information sharing (Scholten and Schilder 2015) and knowledge exchange (Polyviou et al. 2020).

Regarding management / decision making, collaboration can contribute to HRM through both anticipative and collaborative learning (Scholten et al. 2019). Collaboration also represents an integral part of risk management, with high levels of collaboration believed to be necessary to identify and manage risks (Christopher and Peck 2004). Furthermore, information sharing reduces uncertainty (Tukamuhabwa et al. 2015) as well as supporting decision-making during disruptions (Sawyerr and Harrison 2020). Moreover, information sharing enables risk sharing (Jain et al. 2017). Information, and subsequent risk sharing, are both involved in the implementation of mitigation strategies (Jain et al. 2017). The longer a collaboration takes place, the greater it is believed to support disruption handling (Johnson et al. 2013).

2.5 The Rise of Social Impact Supply Chains

Europe faces a food poverty crisis that affects millions of people, with innovative solutions required to combat it (Galli et al. 2019). Throughout the United Kingdom, food poverty impacts more than 9 million people (The Food Foundation 2023). Defined as “*the inability to afford, or to have access to, food to make up a healthy diet*” (Department of Health, cited in Sustain 2016, para. 9), food poverty (also referred to as ‘food insecurity’), does not appear to discriminate, having been found to effect children, the elderly, and even those in employment (Sustain 2016; End Hunger UK 2019; The Trussell Trust 2019; The Food Foundation 2023). Food poverty can lead to a myriad of diet-related health problems, and even social exclusion (Wrigley 2002; Food Research & Action Center 2017). This has resulted in the establishment of an extensive network of food provision initiatives throughout the UK (Figure 8).

Figure 8: Food provision initiatives.



Source: Wang et al. (2018)

These initiatives are largely provided by SEs (Figure 8), with the SE sector having grown both in prominence and importance as a vehicle for tackling societal issues (Peattie and Morley 2008a), including food poverty (Wang et al. 2018). The importance of, and challenges involved in managing the types of 'social impact supply chains' that such organisations must develop and operate to meet their goals is increasingly being recognised (Pullman et al. 2018).

While initial explorations of these SCs tend to focus on how SEs can establish and manage them (Pullman et al. 2018; Longoni et al. 2019), the question of how to make them resilient remains under-explored. The relative infancy of the SE sector, coupled with the positive correlation between the age of an SE and its ability to turn a profit (Social Enterprise UK 2019; 2021; 2023a), suggests that it is necessary for research to be undertaken to explore how SE-led SCs can become resilient, thus supporting their long-term survival as well as the long-term combating of food poverty.

Despite there being much literature and well-established theories relating to SCRes, these are predominately grounded within for-profit contexts. This is problematic given that it is becoming increasingly recognised that “*conventional models of enterprise are not well suited to explaining social enterprise*” (Diochon and Anderson 2011, p. 109). While SEs play a critical role in addressing the food poverty problem, they typically face resource disparities compared to their commercial counterparts (Doherty et al. 2014), along with unique challenges related to their unconventional nature as ‘hybrid organisations’ (Pache and Santos 2013; Pullman et al. 2018; White et al. 2022). These challenges include the perceived complications created by their dual mission (Pache and Santos 2013; Pullman et al. 2018; White et al. 2022), and the management challenges posed by their frequent reliance on volunteers (Royce 2007; Doherty et al. 2014). Therefore, for effective social food supply chain management there is a need to reconceptualise SCRes within a SE context, referred to here as ‘Social Supply Chain Resilience’ (SOSCRes). This was done by engaging with the SE literature, as discussed below.

2.6 Social Enterprise

SE research is relatively underdeveloped (Nicholls and Cho 2006; Sharir and Lerner 2006; Peattie and Morley 2008b; Desa 2010; Zainon et al. 2014) despite an upsurge in research emerging in the early 2000s (Hand 2016). Although SEs are widely represented across economies and business practice, research on them has struggled to be represented within mainstream management journals (Desa 2010). For instance, in a search of the seven highest-ranked business and management journals, Desa (2007), cited in Peattie and Morley (2008b), found no articles on SE or social entrepreneurship. While SE and social entrepreneurship have been used interchangeably throughout the literature (Galera and Borzaga

2009), here, SE refers to the organisation, and social entrepreneurship to the activities of the organisation or the social entrepreneur.

2.6.1 Defining Social Enterprise

Like SCRes, defining SE is a contentious subject (Shaw and Carter 2007; Peattie and Morley 2008a; Seanor and Meaton 2008; Galera and Borzaga 2009; Spear et al. 2009; Teasdale 2011; Doherty et al. 2014; Young and Lecy 2014; Granados and Rivera 2018; Lyon et al. 2019). A lack of consensus in defining SE is problematic for measuring the size and characteristics of the SE sector (Shaw and Carter 2007; Teasdale 2011). Shaw and Carter (2007) cite significant inconsistencies between reports by the UK's Department for Environment, Transport, and the Regions (DETR) and 'Community Enterprise in Strathclyde'. While the DETR estimated 450 SEs in the UK in 1998, Community Enterprise in Strathclyde reported 3,700 SEs just in Scotland in 1997 (Shaw and Carter 2007). However, Seanor and Meaton (2008) argue this lack of consensus reflects the reality of SEs, which cannot be defined by a single construct (Young and Lecy 2014; Bull 2016), and to focus on commonalities overlooks their inherent differences (Bull 2016). However, Peattie and Morley (2008b) argue that having clear definitions is important to distinguish SEs from public and private organisations. Hence, this LR starts by defining the concept of SE.

Throughout the literature there is diversity among SEs in relation to their sector, organisational form, legal structure, size, location, activities, target beneficiaries and scope (Table 12).

Table 12: Diversity of SE

Characteristic of SE	Form(s)	Cited By
SECTOR	Multi-sector	Doherty et al. (2014); Social Enterprise UK

		(2019; 2021; 2023a); CWMPAS (2023)
	Third sector	Shaw and Carter (2007); Peattie and Morley (2008b)
ORGANISATIONAL FORM	Co-operatives	Shaw and Carter (2007); Spear et al. (2009); Teasdale (2011); Young and Lecy (2014)
	Trading Charities	Shaw and Carter (2007); Spear et al. (2009); Teasdale (2011); Bull (2016)
	Community Businesses	Shaw and Carter (2007); Spear et al. (2009)
	Non-Profit Organisations (NPOs)	Young and Lecy (2014)
	Corporate social responsibility (CSR) programs of for-profit organisations	
	Fair-trade Organisations	Spear et al. (2009)
	Housing Associations	
	Credit Unions	
	Societies	Shaw and Carter (2007)

	Trusts	
	Employee-Owned Organisations	Teasdale (2011)
LEGAL STRUCTURE	Community Interest Companies	Spear et al. (2009); Rykaszewski et al. (2013)
	Companies Limited by Guarantee	Spear et al. (2009)
	Society	
	Trading Projects within Larger Organisations (e.g. Charities)	Peattie and Morley (2008a)
SIZE	All sizes	Social Enterprise UK (2019; 2021; 2023a); CWMPAS (2023)
LOCATION	Affluent areas	IFF Research (2005); Sharir and Lerner (2006); Social Enterprise UK (2019; 2021; 2023a)
	Areas of deprivation	IFF Research (2005); Harding (2007); Seanor and Meaton (2008); Social Enterprise UK (2019; 2021; 2023a); CWMPAS (2023)
	Rural areas	Harding (2007)

	Urban areas	
OBJECTIVES	<i>"Supporting vulnerable people"</i>	Harding (2007); Spear et al. (2009); Doherty et al. (2014); Social Enterprise UK (2019; 2021; 2023a, p. 12)
	<i>"Addressing social exclusion"</i>	Spear et al. (2009); Social Enterprise UK (2019; 2021; 2023a, p. 12)
	<i>"Creating employment opportunities"</i>	IFF Research (2005); Doherty et al. (2014); Social Enterprise UK (2019; 2021; 2023a, p. 12)
	<i>"Providing affordable housing/addressing homelessness"</i>	IFF Research (2005); Doherty et al. (2014); Social Enterprise UK (2019; 2021; 2023a, p. 12)
	<i>"Benefiting a particular community"</i>	Social Enterprise UK (2019; 2021; 2023a, p. 12)
	<i>"Improving physical health and wellbeing"</i>	
	<i>"Improving mental health and wellbeing"</i>	
	<i>"Supporting other social enterprises/organisations"</i>	

	<i>"Promoting education and literacy"</i>	
	<i>"Addressing financial exclusion"</i>	
	<i>"Supporting vulnerable children and young people"</i>	
	<i>"Supporting women and girls"</i>	
	<i>"Supporting disabled people"</i>	Social Enterprise UK (2021; 2023a, p. 12)
	<i>"Supporting individuals who experience discrimination due to their race/ethnicity (BAME groups)"</i>	
	<i>"Providing or supporting access to arts, leisure, heritage and sports"</i>	
	<i>"Addressing the climate emergency"</i>	Social Enterprise UK (2023a, p. 12)
	<i>"Supporting LGBTQ+ people"</i>	
	<i>"Protecting the environment"</i>	Doherty et al. (2014); Social Enterprise UK (2019, p. 35)

	"Other"	Social Enterprise UK (2019; 2023a, p. 12)
TARGET BENEFICIARIES	Children and / or young people	IFF Research (2005); Peattie and Morley (2008a); Social Enterprise UK (2019; 2021)
	The elderly	
	People on low income	
	People with disabilities	IFF Research (2005); Peattie and Morley (2008a); Spear et al. (2009); Social Enterprise UK (2019; 2021)
	The long-term unemployed	Spear et al. (2009); Doherty et al. (2014); Social Enterprise UK (2019; 2021)
	Communities	IFF Research (2005); Social Enterprise UK (2019; 2021)
	The socially excluded	Doherty et al. (2014)
SCOPE	Local	IFF Research (2005); Shaw and Carter (2007); Peattie and Morley (2008a; 2008b); Social Enterprise UK (2019; 2021; 2023a)
	National	

	International	Peattie and Morley (2008a; 2008b); Social Enterprise UK (2019; 2021; 2023a)
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Firstly, regarding sector, both Doherty et al. (2014) and Social Enterprise UK (2019; 2021; 2023a) assert that SEs cannot be confined to a single sector. Meanwhile, Shaw and Carter (2007) and Peattie and Morley (2008b) situate SEs within the third sector. Secondly, SEs take a variety of organisational forms (Table 12). Interestingly, here, Young and Lecy (2014) include CSR programs of for-profit organisations. However, as Defourny and Nyssens (2010) argue, this perspective could lead to any social initiatives being considered a form of social entrepreneurship along a spectrum, even if it is only a small part of an organisation's overall strategy.

Like organisational form, SEs are not confined to a single legal structure (Table 12). SEs vary in size (Social Enterprise UK 2019; 2021; 2023a; CWMPAS 2023) but are commonly small businesses (Seanor and Meaton 2008), with Social Enterprise UK (2019; 2021) claiming that approximately one third of the UK sector has a turnover of £50,000 or less. However, it is important to note that cooperatives, who have been long associated with food supply as a model for shortening SCs through the aggregation of agricultural producers (International Cooperative Alliance 2016) can be large, even global corporations. One example is the Mondragon Corporation. Consisting of 95 individual, self-governing cooperatives, the Mondragon Corporation has commercial businesses in 53 countries, with sales in over 150 (Mondragon Corporation 2023). While some SEs operate in affluent areas (IFF Research 2005; Sharir and Lerner 2006; Social Enterprise UK 2019; 2021; 2023a), they are more likely to be in areas of deprivation (IFF Research 2005; Harding 2007; Seanor and

Meaton 2008; Social Enterprise UK 2019; 2021; 2023a), especially in Wales (Social Enterprise UK 2019; CWMPAS 2023). They are also more commonplace in rural areas (Harding 2007). Of the objectives undertaken by SEs (Table 12), Social Enterprise UK (2019; 2021; 2023a) found the most prevalent to be: (1) benefiting / improving a particular community, (2) supporting vulnerable people, and (3) improving mental health and wellbeing (Social Enterprise UK 2019; 2021; 2023a). This is also representative of the SE sector in Wales (CWMPAS 2023). Consequently, the main target beneficiaries for SEs tend to be people across a range of demographics (Table 12), although some SEs primarily aim to deliver environmental benefits (IFF Research 2005). In Wales, communities represent the most common target beneficiary among SEs (Social Enterprise UK 2019; CWMPAS 2023). Regarding the scope of their activities, Shaw and Carter (2007) claim that social entrepreneurship is locally bound. However, only 25% of those surveyed by IFF Research (2005) solely focused on their local community. Social Enterprise UK (2019) found that in Wales, 31% of SEs operated locally, 22% nationally, and 32% internationally. While Wales-specific figures were not available, Social Enterprise (2023a) did report similar statistics among the devolved nations, with 28% of respondents from Wales, Scotland and Northern Ireland operating locally. These figures illustrate the diverse scope of social entrepreneurship, as suggested by Peattie and Morley (2008a; 2008b).

This diversity among SEs is attributed to variations in country and context (Spear et al. 2009; Defourny and Nyssens 2010; Teasdale 2011; Doherty et al. 2014; Young and Lecy 2014), with Defourny and Nyssens (2010, p. 49) stating *"social enterprise and social entrepreneurship are deeply rooted in the social, economic, political and cultural contexts in which these organizations emerge"*.

In the US, social entrepreneurship refers to the adoption of commercial activities by NPOs in the pursuit of a social mission (Kerlin 2006, cited in Peattie and Morley 2008a; 2008b; Defourny and Nyssens 2010; Teasdale 2011; Doherty et al. 2014; Young and Lecy 2014). This is distinct from (Peattie and Morley 2008a), but complimentary to, their commercial counterparts (Kerlin 2006, cited in Peattie and Morley 2008b; Teasdale 2011). These commercial activities do not have to be aligned with social aims, instead being seen as a means of funding a social initiative (Galera and Borzaga 2009). This supports Teasdale's (2011) claim that the US approach to SE emphasises external impact over internal dynamics. Furthermore, in the US, SE is more usually individualistic in nature, established by a single social entrepreneur, then governed hierarchically (Teasdale 2011).

In Europe, SEs are typically established to achieve a specific social objective through the trading of goods and services (Galera and Borzaga 2009). Situated in the third sector (Defourny and Nyssens 2010), SEs are seen as collaborators and challengers to commercial businesses (Peattie and Morley 2008a) through disruptive and unconventional methods (Borzaga and Defourny 2001, cited in Peattie and Morley 2008b). While European SEs engage in various activities, work integration programs were particularly prominent during the 1990s. These programs aimed to reintegrate under-qualified, unemployed individuals and others at risk of labour market exclusion, back into work (Defourny and Nyssens 2010). The European concept of SE is rooted in collectivism (Galera and Borzaga 2009; Teasdale 2011; Doherty et al. 2014), associated with greater democracy (Defourny and Nyssens 2010) and often taking the form of cooperatives (Teasdale 2011; Doherty et al. 2014) with an emphasis on democratic ownership (Nyssens 2006, cited in Seanor and Meaton 2008; Teasdale 2011). In the UK, SE is situated between the US and European concepts, but leans more towards the European perspective (Peattie and Morley 2008b; Doherty et al. 2014). Social Enterprise UK (2023a, p. 37)

defines a SE as a business that has “*primarily social objectives whose surpluses are principally reinvested for that purpose in the business or community, rather than being driven by the need to maximise profit for shareholders and owners*”.

Teasdale (2011) presents several contextual explanations for the emergence of SE. Firstly, SEs can emerge in response to market and state failures. Market failure is emphasised in Europe, where SEs aim to address inequalities caused by globalisation. In the US, state failure is seen to be the catalyst, with SEs addressing issues neglected by government (Teasdale 2011). The second explanation is resource theory, where organisations depend on their external environment for resources, but eventually look to shape the environment to suit their agenda. This provides explanation for the adoption of commercial activities by NPOs when government funding and philanthropy decreases (Teasdale 2011). Thirdly, institutional theory suggests that organisations adopt the dominant practices within their field. Hence, Teasdale (2011) argues that NPOs adopt commercial practices because it is the norm.

Although the literature includes a range of approaches to the categorisation and definition of SE, Defourny and Nyssens (2010) present three schools of thought:

1. Earned Income

This school of thought concerns the adoption of commercial activities by NPOs in the pursuit of funding a social mission. To qualify as a SE, at least 50% of your income should be generated from commercial activities (Spear et al. 2009; Defourny and Nyssens 2010). Defourny and Nyssens (2010, p. 41) differentiate between early perspectives which focus on NPOs, labelled the “*commercial non-profit approach*”, and later approaches which embrace all organisational forms, referred to as the “*mission-driven business approach*”.

2. Social Innovation

The social innovation perspective, as discussed by Anderson and Dees (2006), cited in Defourny and Nyssens (2010), focuses on Schumpeterian social entrepreneurs. These entrepreneurs use a combination of commercial and non-commercial activities to achieve financial and social objectives by implementing new and disruptive processes (Defourny and Nyssens 2010; Young and Lecy 2014). The innovativeness of these entrepreneurs could be attributed to their comparative lack of resources, thus forcing them to be resourceful. According to Young and Lecy (2014), these entrepreneurs are impartial when choosing organisational form, opting for whichever they perceive to work best. Hence, this perspective proposes that SE can adopt a range of organisational forms based on context (Young and Lecy 2014).

3. L'EMergence de l'Entreprise Sociale en Europe / The emergence of social enterprises in Europe (EMES) (EMES – International Research Network 2023)

The EMES perspective involves an assembly of scholars conducting research into the third sector, drawing from a range of disciplines including sociology and economics, as well as varying contexts across 15 countries throughout the EU. This school of thought presents a list of indicators for an ideal SE (Table 13), as opposed to a set of criteria that must be met to be classed a SE (Defourny and Nyssens 2010; Young and Lecy 2014).

Table 13: EMES dimensions of SE

Dimension(s)	Indicators
ECONOMIC & ENTREPRENEURIAL	(1) The selling of goods and services
	(2) Autonomy

	(3) Economic risk
	(4) Minimal paid work
SOCIAL	(5) An explicit community objective
	(6) Established by members of the public
	(7) A governance structure outside of capital ownership
	(8) The involvement of a range of stakeholders
	(9) Constraint on the distribution of profit

Subsequently, SEs are defined as “*organisations with an explicit aim to benefit the community, initiated by a group of citizens and in which the material interest of capital investors is subject to limits*” (EMES website, cited in Young and Lecy 2014, p. 1312). However, Young and Lecy (2014) argue that it is not clear if this definition can accommodate social businesses without democratic governance or constraints on profit distribution, the CSR activities of profit-driven organisations or partnerships between NPOs, traditional businesses and the government, with a primary social purpose (Young and Lecy 2014). Alternatively, Defourny and Nyssens (2010, p. 43) summarises the EMES perspective of SEs, stating:

Social enterprises are not-for-profit private organizations providing goods or services directly related to their explicit aim to benefit the community. They generally rely on a collective dynamic involving various types of stakeholders in their governing bodies, they place a high value on their autonomy, and they bear economic risks related to their activity.

Young and Lecy (2014) are critical of each of the schools of thought. They argue that the EMES and spectrum schools fail to clearly differentiate between SEs and non-SEs. They also question the innovation dimension of the social innovation school of thought, and the lack of clarity surrounding what can be considered innovative. This is coupled with querying why those that successfully balance commercial and social goals, while adopting traditional business models, should not be considered SEs. Furthermore, Young and Lecy (2014) state that a common weakness among these schools is the assumption that SE is a single construct, when it can take several forms. This led Young and Lecy (2014) to present their own zoo metaphor for SE. In this metaphor, the SE sector is like a modern zoo where there are open spaces for animals (SEs) to interact and share, and there are enclosures for those that may be hostile to one another. The zoo walls represent the boundaries separating SEs from the public and private organisations, while each section of the zoo represents a form of SEs, as defined by law. The behaviours and goals of animals (SEs) differ across these sections. Young and Lecy (2014) propose six main species (types) of animals (SEs) within their zoo (SE sector):

1. For-Profit Business Corporations

For-profit business corporations are those which engage in CSR or become environmentally sustainable. This is done to enhance public relations, in turn, increasing long-term profits for owners (Young and Lecy 2014).

2. Social Businesses

Social businesses aim to balance achieving a social mission with profit-seeking activities. This includes profit-driven organisations that openly commit to balance profit generation with social objectives and newer legal forms like “*flexible benefit corporations*” (Young and Lecy 2014, p. 1320).

3. Social Cooperatives

Popular throughout Europe, social cooperatives, like traditional cooperatives have an explicit public mission coupled with providing benefits to its members.

4. Commercial NPOs

Commercial NPOs are established to achieve an explicit social mission, with commercial activities being key to their success. Examples include trading charities, hospitals, and schools (Young and Lecy 2014).

5. Public-Private Partnerships (PPPs)

PPPs are contractual arrangements between for-profit, non-profit and government organisations to tackle a social issue. While each partner has its own objectives, e.g. profit generation for the business partner and public welfare for government agents, the PPP combines social and commercial objectives (Young and Lecy 2014).

6. Hybrids

While all SEs can be considered hybrid organisations (Seanor and Meaton 2008; Von der Weppen and Cochrane 2012; Doherty et al. 2014; Ebrahim et al. 2014; Zainon et al. 2014), that is, an organisation which looks to achieve both social and / or environmental goals coupled with commercial ones (Ebrahim et al. 2014), these hybrids differ by mixing organisational form. This can be by establishing subsidiaries or through a hybrid legal status (Young and Lecy 2014).

The advantage of the zoo metaphor is that it considers the geographical contexts of SEs. Like traditional zoos, animals (SEs) are grouped based on their place of origin and evolutionary stage, reflecting their natural habitats. Thus, variations represent the contextual differences between SEs (Young and Lecy 2014).

Shaw and Carter (2007) highlight four commonly shared, though not necessarily definitive (Peattie and Morley 2008a), characteristics of SEs. Firstly, SEs commonly operate in “*multi-agency environments*” consisting of diverse stakeholders and clientele (Shaw and Carter 2007, p. 421; Peattie and Morley 2008a, p. 7). However, this setting can also apply to profit-driven organisations (Peattie and Morley 2008a). Second is an “*enterprise orientation*”, whereby SEs aim to generate social impact while engaging in activities synonymous with the private sector (Shaw and Carter 2007, p. 421; Peattie and Morley 2008a, p. 7). In the UK, the level of income generated through these activities is used to differentiate SEs. Established SEs generate over 50% of their income through such activities, while emerging SEs generate 25-49% (Peattie and Morley 2008a). The third characteristic is the explicit pursuit of a primary social or environmental objective, with trading activities serving to achieving this objective (Shaw and Carter 2007; Peattie and Morley 2008a). This final characteristic is social ownership (Shaw and Carter 2007; Peattie and Morley 2008a). SEs often have looser governance and ownership structures involving various stakeholders, such as customers and local representatives. Profits are typically reinvested into the community, as opposed to individual shareholders (Peattie and Morley 2008a). These characteristics are captured in the UK Government’s definition of SE:

A business with primarily social objectives whose surpluses are principally reinvested for that purpose in the business or in the community, rather than being driven by the need to maximise profit for shareholders and owners (Peattie and Morley 2008a).

Similarly, Social Enterprise Coalition (SEC) (NO DATE) cited in Spear et al. (2009), propose three criteria for identifying SE; (1) a primary social aim, (2) an enterprise orientation, and (3) social ownership. Spear et al. (2009), like Shaw and Carter (2007), state that profits can be shared with stakeholders or reinvested into the community as opposed to going to

shareholders. Thus, the only discrepancy between the two attempts to define SE illustrated so far is operating within multi-stakeholder environments. Hence, in line with Peattie and Morley (2008a), here, operating within multi-agency environments is dismissed as a definitive characteristic of SEs. This is supported by Galera and Borzaga (2009), who define SE by three features; (1) the pursuit of an explicit social mission which is achieved through the trading of goods and / or services, (2) total or partial constraint of the distribution of profits as a protection mechanism, discouraging undesirable behaviour and enhancing trustworthiness, and (3) the presence of an open governance structure, along with ownership rights and control in the hands of stakeholders, either single, or multiple, depending on organisational form.

Alternatively, Nicholls and Cho (2006, p. 213-214) propose three dimensions of social entrepreneurship; (1) sociality, that is, *"the extent to which an organization intentionally and effectively pursues the advancement of 'social' objectives"*, like a primary social objective, above, (2) market orientation, and (3) innovation. Unlike previous definitions, here, a constraint on profit distribution is absent as a defining characteristic of SE. This is supported by Stanford University's Social Entrepreneurship Initiative (SEI), cited in Shaw and Carter (2007), who, in classifying SEs, include (1) for-profit organisations which mobilise resources for addressing social problems, (2) NPOs which support beneficiaries to establish their own NPOs, and (3) NPOs which generate revenue to facilitate their own projects.

Common among the approaches to defining SE above, and throughout the literature, is the presence of a primary social goal and the adoption of commercial activities to achieve it (IFF Research 2005; Harding 2007; Shaw and Carter 2007; Peattie and Morley 2008a; 2008b; Rykaszewski et al. 2013; Doherty et al. 2014; Ebrahim et al. 2014; Young and Lecy 2014; Bull 2016; Social Enterprise UK 2019; CWMPAS 2023). This supports

claims that these are the only two defining characteristics of SE (Peattie and Morley 2008a; 2008b; Young and Lecy 2014). Young and Lecy (2014), in their zoo metaphor, state that only in pursuing both financial and social goals can an organisation be located within the zoo walls.

Therefore, in line with the literature, SEs are defined in this study as organisations whose primary purpose is to pursue social (IFF Research 2005; Harding 2007; Shaw and Carter 2007; Spear et al. 2009; Von der Weppen and Cochrane 2012; Rykaszewski et al. 2013; Ebrahim et al. 2014; Bull 2016; Social Enterprise UK 2019; 2021; 2023a; CWMPAS 2023) and / or environmental (Spear et al. 2009; Von der Weppen and Cochrane 2012) objectives. They use commercial activities to generate income in support of these objectives (Shaw and Carter 2007; Rykaszewski et al. 2013; Ebrahim et al. 2014; Bull 2016; Social Enterprise UK 2019; 2021; 2023a). The extent an organisation must carry out commercial activities to be classed as a SE range from minimal to total (Doherty et al. 2014). However, this study accepts the consensus that an organisation should generate more than 50% of its income through trading activities to be classified as a SE (Spear et al. 2009; Defourny and Nyssens 2010). Furthermore, this study considers constraints on profit distribution as a defining characteristic of SE (Shaw and Carter 2007; Galera and Borzaga 2009; Spear et al. 2009). SEs reinvest revenue back into the organisation to advance its mission, instead of benefiting shareholders (IFF Research 2005; Harding 2007; Social Enterprise UK 2019; 2021; 2023a). Social Enterprise UK (2019) found that 90% of those surveyed used most of their profits this way, with two-thirds reinvesting all profits to achieve their mission. Social Enterprise UK (2023a) found that, on average, 88% of profits were reinvested by SE. For SEs situated in the most deprived areas of the UK, this equated to more than £290m (Social Enterprise UK 2023a). In this context, Harding (2007, p. 74) defines SE as an organisation where “*the profit is invested in the activity or venture itself rather than returned to*

investors". The Central Government's Department of Trade and Industry (DTI) (2007), cited in Seanor and Meaton (2008, p. 25) defines SEs as businesses:

With primarily social objectives whose surpluses are principally reinvested for that purpose in the business or in the community, rather than being driven by the need to maximise profit for shareholders and owners.

By committing to achieving both financial and social and / or environmental goals (Von der Weppen and Cochrane 2012; Doherty et al. 2014), SEs serve a double or even triple, bottom line (Harding 2007; Spear et al. 2009; Patel and Mehta 2011; Von der Weppen and Cochrane 2012; Social Enterprise UK 2019). Therefore, SEs have been identified as hybrid organisations (Doherty et al. 2014; Ebrahim et al. 2014; Bull 2016), which do not fit into traditional organisational categories due to the "*coexistence of values and artefacts from two or more categories*" (Doherty et al. 2014, p. 418). Traditional categorisation groups organisations into three types (Billis 2010, cited in Doherty et al. 2014). Public sector organisations, owned by the state, act in the public's interest, and are funded through taxes. Alternatively, private sector organisations (PSOs) aim to maximise financial returns for shareholders and are funded through sales and / or service fees. NPOs pursue social and / or environmental goals, are owned by their members, and are governed by an elected board of representatives (Billis 2010, cited in Doherty et al. 2014).

Doherty et al. (2014, p. 421) differentiates between "*organic*" and "*enacted*" hybrids. Organic hybrids are SEs that have evolved from NPOs and voluntary organisations, while enacted hybrids are organisations established as SEs. Alternatively, Ebrahim et al. (2014) differentiates between integrated and differentiated hybrids. For integrated hybrids,

customers and target beneficiaries are the same. Alternatively, for differentiated hybrids, customers and target beneficiaries are separate, with commercial activities distinct from social ones, generating profit from these commercial activities to fund social initiatives (Ebrahim et al. 2014).

2.6.2 Social Enterprise Landscape

For the purposes of this thesis, the discussion of SEs largely focuses on the factors relevant to a UK context. The SE landscape in the UK appears to be made up of a core of well-established SEs, accompanied by a growing number of start-ups. Social Enterprise UK (2019) found that almost a quarter (24%) of those surveyed were 21+ years old, while 3 in 10 were 3 years old or less. In 2023, the proportion of UK SEs that were 21+ years old fell to 11% in 2023, despite being above 20% from 2011 to 2019, while the number of SEs that were 3 years old or less remained around a third (Social Enterprise UK 2023a). This could be attributed to the COVID-19 pandemic, which likely destabilised SEs, both young and old, as well as triggering the start-up of many newer SEs in response to the effects of the pandemic. However, in Wales, the SE sector is more reflective of that found by Social Enterprise UK (2019), with 24% of those surveyed in 2022 being more than 20 years old, while 28% were 3 years old or less (CWMPAS 2023).

Nearly two thirds of SEs surveyed by Social Enterprise UK (2023) reported an increase in their turnover compared to the previous year. This is up from 52% in 2019 (pre-COVID) (Social Enterprise UK 2019), and 42% in 2021 (COVID-affected) (Social Enterprise UK 2021). In Wales, 57% percent of SEs surveyed by CWMPAS (2023) reported an increase in their turnover between 2020 and 2022, with 69% anticipating a growth in their turnover over the next 3 years. According to Social Enterprise UK (2023a), there are approximately 131,000 SEs across the UK. In Wales, the number of SEs has grown consistently, from 2,022 in 2019 (a 19%

increase on 2017) (Social Enterprise UK 2019), to 2,828 in 2022 (a 19% increase on 2020) (CWMPAS 2023). These statistics support claims the SE sector is growing across the UK (Shaw and Carter 2007; Peattie and Morley 2008b; Social Enterprise UK 2019; 2021; 2023a). The UK SE sector is now worth approximately £78 billion, equal to 3.4% of GDP (Social Enterprise UK 2023a). In Wales, the SE sector is estimated to be worth £3.1-£4.8 billion, making a significant contribution to the Welsh economy (CWMPAS 2023). If conservative estimates are to be believed, this would be approximately a 30% increase on 2017 (Social Enterprise 2019).

2.6.3 Elements of Social Enterprise

In conducting an in-depth review of the SE literature, several elements of SE were identified. These are illustrated in Figure 9. Despite their contrasting contexts, there was notable overlap between the SE and SCRes literature, with collaboration, flexibility, HRM, trust, social capital and culture representing mutual themes of discussion (Table 14).

Figure 9: Elements of SE.

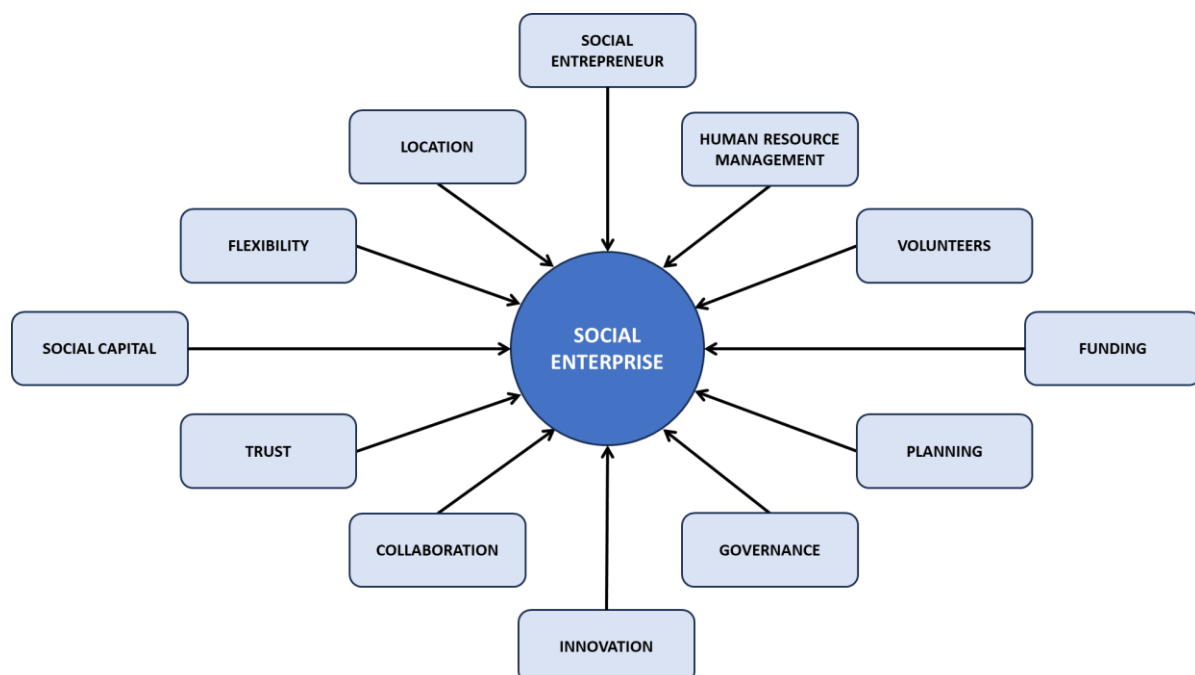


Table 14: Commonalities between the SCRes and SE literature

	Relevant Authors	
Literature Theme(s)	SCRes	SE
Collaboration	Christopher and Peck (2004); Sheffi and Rice (2005); Pettit et al. (2010); Blackhurst et al. (2011); Juttner and Maklan (2011); Soni and Jain (2011); Ponis and Koronis (2012); Wicher and Lenort (2012); Scholten et al. (2014); Hohenstein et al. (2015); Scholten and Schilder (2015); Kamalahmadi and Parast (2016); Wang et al. (2016); Ali et al. (2017a; 2017b); Chowdhury and Quaddus (2017); Datta (2017); Jain et al. (2017); Ali et al. (2018); Stone and Rahimifard (2018); Aboah et al. (2019); Ali and Golgeci (2019); Chowdhury et al. (2019); Dubey et al. (2019); Polyviou et al. (2020); Sa et al. (2020); Sawyerr and Harrison (2020)	BRASS (2004); GHK (2005); Litalien (2006); Sharir and Lerner (2006); Spear (2006); Islam (2007); Shaw and Carter (2007); Royce (2007); Peattie and Morley (2008a; 2008b); Seanor and Meaton (2008); Desa (2010); Patel and Mehta (2011); Sodhi and Tang (2011); Von der Weppen and Cochrane (2012); Doherty et al. (2014)
Flexibility	Sheffi (2005); Sheffi and Rice (2005); Pettit et al.	Royce (2007); Patel and Mehta (2011); Von der

	(2010); Juttner and Maklan (2011); Soni and Jain (2011); Carvalho et al. (2012); Ponis and Koronis (2012); Scholten et al. (2014); Bradaschia and Pereira (2015); Hohenstein et al. (2015); Kamalahmadi and Parast (2016); Wang et al. (2016); Ali et al. (2017a; 2017b); Brusset and Teller (2017); Datta (2017); Jain et al. (2017); Stone and Rahimifard (2018); Aboah et al. (2019); Chowdhury et al. (2019); Li et al. (2020); Polyviou et al (2020); Sa et al. (2020); Sawyerr and Harrison (2020)	Weppen and Cochrane (2012); Doherty et al. (2014)
Human Resource Management	Blackhurst et al. (2011); Chowdhury and Quaddus (2016); Ali et al. (2017a; 2018); Adobor (2019); Sawyerr and Harrison (2020)	BRASS (2004); Fraser (2006); Royce (2007; Peattie and Morley (2008a; 2008b); Desa (2010); Sodhi and Tang (2011); Patel and Mehta (2011); Von der Weppen and Cochrane (2012); Doherty et al. (2014); Social Enterprise UK (2019; 2021)

Trust	Johnson et al (2013); Kamalahmadi and Parast (2016); Jain et al. (2017); Adobor and McMullen (2018); Stone and Rahimifard (2018); Adobor (2019); Dubey et al. (2019); Sa et al. (2020); Sawyerr and Harrison (2020)	Royce (2007); Seanor and Meaton (2008)
Social Capital	Johnson et al. (2013); Tukamuhabwa et al. (2015); Ali et al. (2017a); Adobor (2019); Golgeci and Kuivalainen (2020); Polyviou et al. (2020)	Fraser (2006); Nicholls and Cho (2006); Sharir and Lerner (2006); Spear (2006); Shaw and Carter (2007); Seanor and Meaton (2008); Spear et al. (2009); Desa (2010); Patel and Mehta (2011); Von der Weppen and Cochrane (2012); Rykaszewski et al. (2013); Doherty et al. (2014)
Culture	Christopher and Peck (2004); Sheffi and Rice (2005); Mandal (2012); Chowdhury and Quaddus (2016); Datta (2017); Jain et al. (2017); Stone and Rahimifard (2018); Adobor (2019); Ali and Golgeci (2019); Li et al. (2020); Polyviou et al. (2020);	Sharir and Lerner (2006); Spear (2006); Shaw and Carter (2007); Royce (2007); Patel and Mehta (2011); Von der Weppen and Cochrane (2012); Rykaszewski et al. (2013); Social Enterprise UK (2019)

	Sawyer and Harrison (2020)	
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2.6.3.1 The Social Entrepreneur

Widely cited throughout the literature as a prominent component of many SEs is the social entrepreneur (BRASS 2004; Sharir and Lerner 2006; Spear 2006; Harding 2007; Shaw and Carter 2007; Vega and Kidwell 2007; Peattie and Morley 2008a; 2008b; Galera and Borzaga 2009; Desa 2010; Levie and Hart 2011; Von der Weppen and Cochrane 2012; Rykaszewski et al. 2013; Young and Lecy 2014; Hockerts 2017). Like the term SE, confusion exists around what defines a social entrepreneur, with Galera and Borzaga (2009) citing disagreements surrounding whether such entrepreneurs are found exclusively in the non-profit sector, or their existence spans multiple sectors.

Commonly, the term 'entrepreneur' refers to an individual who establishes a business or owns and runs a business which they did not establish (Young and Lecy 2014). However, throughout social and traditional entrepreneurship literature, the entrepreneur is perceived as someone who undertakes a significant project (Dees 1998, cited in Young and Lecy 2014), identifying new and improved ways of doing things (Young and Lecy 2014).

Both differences and similarities exist between traditional and social entrepreneurs (Shaw and Carter 2007). Traditional entrepreneurs are profit-driven, while social entrepreneurs are guided by "*the recognition of a gap in the provision of services or an unmet social need*" (Shaw and Carter 2007, p. 426) and a desire to address this need (Sharir and Lerner 2006; Shaw and Carter 2007; Vega and Kidwell 2007). Accountable to their beneficiaries (Harding 2007), among others, opposed to just shareholders (Shaw and Carter 2007). This has seen social entrepreneurs

defined as “*change agents in the social sector*” (Harding 2007, p. 74; Vega and Kidwell 2007, p. 16). For these individuals, personal benefit comes from addressing a social issue rather than financial gains (Gupta et al. 2020). Most respondents studied by Shaw and Carter (2007) reported negative impacts on their financial security in both the short and long term. However, unlike traditional business entrepreneurs, Shaw and Carter (2007) identified that social entrepreneurs experienced significantly less personal financial risk, with only 2% of respondents using their own finances. Instead, risk came in the form of lost credibility and damage to reputation and personal relationships (Shaw and Carter 2007). Lastly, social entrepreneurs are said to be more positive and tenacious, yet less confident than their commercial counterparts (Harding 2007). Along with positivity and tenacity, these individuals are synonymous with passion (Von der Weppen and Cochrane 2012) and commitment (BRASS 2004; Sharir and Lerner 2006; Desa 2010), as well as being charismatic, natural leaders, able to see the bigger picture (Sharir and Lerner 2006; Shaw and Carter 2007; Desa 2010; Von der Weppen and Cochrane 2012). Furthermore, social entrepreneurs are often highly independent (Desa 2010), believing they are central to establishing and sustaining the SE (Shaw and Carter 2007). However, this independence can lead social entrepreneurs to become overly invested in the organisation, creating bottlenecks and delays in decision making (Rykaszewski et al. 2013).

Social entrepreneurs are often well-educated (Shaw and Carter 2007; Levie and Hart 2011), with 88% of those analysed by Shaw and Carter (2007) holding qualifications. Irrespective of qualifications, most of these social entrepreneurs emphasised the importance of life skills and experience (Shaw and Carter 2007). Experience is a commonly discussed characteristic of social entrepreneurs throughout the literature (Sharir and Lerner 2006; Spear 2006; Shaw and Carter 2007; Desa 2010; Von der Weppen and Cochrane 2012; Hockert 2017; Allen 2020). Social

entrepreneurs are often experienced in tackling social problems (Spear 2006; Shaw and Carter 2007; Peattie and Morley 2008b; Desa 2010; Von der Weppen and Cochrane 2012; Hockerts 2017; Allen 2020). In a study by Shaw and Carter (2007), the experience of social entrepreneurs was commonly in the third sector, with 32% and 33% of respondents having worked in or established a SE, respectively. While approximately half of the social entrepreneurs studied by Von der Weppen and Cochrane (2012) had applicable experience. Occasionally, social entrepreneurs can also emerge from a commercial background, using their skills to contribute to society after achieving their own financial and / or career goals (Peattie and Morley 2008b). Managerial experience has also been linked to the success of SEs (Sharir and Lerner 2006), as it improves resource acquisition (Desa 2010). Alternatively, a lack of managerial experience can cause problems, particularly during the startup phase (Sharir and Lerner 2006). Spear (2006) found substantial small business experience among the SEs studied. All of this supports Shaw and Carter's (2007) claim that social entrepreneurs often establish SEs later in life, after accumulating qualifications and life experience.

Social entrepreneurs are widely cited as being innovative (Nicholls and Cho 2006; Sharir and Lerner 2006; Harding 2007; Shaw and Carter 2007; Vega and Kidwell 2007; Von der Weppen and Cochrane 2012; Rykaszewski et al. 2013), with Vega and Kidwell (2007, p. 16) defining them as:

an individual who addresses a serious societal problem with innovative ideas and approaches that have not been tried successfully by private, public, or non-profit sector entities.

These "*social innovators*" (Nicholls and Cho 2006, p. 101) are said to "*identify under-utilised resources – people, buildings, equipment – and find ways of putting them to use to satisfy unmet social needs*"

(Leadbeater 1997, cited in Shaw and Carter 2007, p. 422). This creates a competitive advantage for the SE (Gordon Institute of Business Science, cited in Rykaszewski et al. 2013). This represents a Schumpeterian view of the social entrepreneur, disrupting the economic system through innovation (Young and Lecy 2014), either through the creation of new goods and / or services, markets, or advances in technology (Young and Lecy 2014). However, Young and Lecy (2014) argue that Schumpeterian entrepreneurs represent the minority. Instead of driving market innovation, most social entrepreneurs provide existing services to a target market with minimal risk and no desire to grow (Young and Lecy 2014). One example of this is social enterprise spinouts (SESOs). Sepulveda et al. (2018) found that a number of UK SEs are spinouts from the public sector, particularly from the health sector. The decision to leave the public sector was instigated by a combination of top-down and bottom-up triggers, such as the threat of closure of public services and a desire to be more responsive to public needs (Sepulveda et al. 2018). This saw senior managers and staff members preserving existing services through an independent business model as 'institutional entrepreneurs' (Sepulveda et al. 2018). Young and Lecy (2014), in their zoo metaphor, to present two types of social entrepreneurs, or 'zookeepers'. Schumpeterian entrepreneurs are pioneers, "*out in the world discovering and capturing new species*" through establishing new SEs (Young and Lecy 2014, p. 1326), growing the zoo in numbers and variety. Once part of the zoo, another type of entrepreneur is responsible for sustaining its population through "*cultivation of habitat and breeding programs*" (Young and Lecy 2014, p. 1326). These entrepreneurs act as replicators, applying existing models to different contexts. Alternatively, Vega and Kidwell (2007) differentiate between 'deeds' and 'dollars' social entrepreneurs. The "*deeds social entrepreneur*" is primarily driven by a desire to tackle societal issues, focused on delivering social impact opposed to personal or organisational financial gain (Vega and Kidwell 2007, p. 21). Alternatively, the "*dollars social entrepreneur*" focuses on achieving social objectives

effectively, recognising the need to generate income. They run the SE as a business to achieve its social objective (Vega and Kidwell 2007).

Despite the significant role social entrepreneurs play in success of SEs, Peattie and Morley (2008a, p. 29) cite difficulties “*finding the correct combination of skills and motivations appropriate for both an entrepreneurial venture and the pursuit of a social cause within a single individual*”. To address this challenge, SEs often use management teams / committee boards (Sharir and Lerner 2006; Islam 2007; Royce 2007; Shaw and Carter 2007; Peattie and Morley 2008a; Von der Weppen and Cochrane 2012; Rykaszewski et al. 2013; Cornforth 2014). Typically, these management teams consist of 6 members (Social Enterprise UK 2019).

Having a management board with clearly defined roles (Von der Weppen and Cochrane 2012) enables delegation of responsibility, thus alleviating bottlenecks caused by the commonplace social entrepreneur’s “*do it all*” approach, and subsequent over-investment in day-to-day operations (Rykaszewski et al. 2013, p. 23). This also reduces both institutional and financial uncertainty should the social entrepreneur leave the organisation (Von der Weppen and Cochrane 2012).

2.6.3.2 Human Resource Management

Several authors cite staffing problems beyond the social entrepreneur (BRASS 2004; Royce 2007; Von der Weppen and Cochrane 2012; Social Enterprise UK 2019; Roumpi et al. 2020; White et al. 2022), especially in remote (Von der Weppen and Cochrane 2012) and deprived areas (Social Enterprise UK 2019).

Fraser (2006) found no differences in the staffing problems experienced by SEs and for-profit organisations. However, Chartered Institute of Personnel and Development (CIPD) (2005), cited in Royce (2007), claim

that 90% of voluntary, community and NPOs experience problems with filling vacancies, attributed to difficulties finding candidates with the necessary skills and values (Royce 2007; Von der Weppen and Cochrane 2012). This led CIPD (2005), cited in Royce (2007) to state there is an imbalance in the supply and demand of skills throughout the 3rd sector. Royce (2007, p. 17) attributes the scarcity of skills and SE sector experience to heightened job insecurity, claiming that individuals are:

discouraged from working in the sector because of short-term employment options and a lack of other security indicators such as pensions.

Doherty et al. (2014) attributes the lack of access to skilled workers to the financial constraints SEs regularly operate under (Gupta et al. 2020; Roumpi et al. 2020). Resulting in an inability to pay the market rate for employees (Doherty et al. 2014).

This has led to a lack of “*in-house expertise*” among SEs (BRASS 2004, p. 39), particularly in business (BRASS 2004; Allen 2020), marketing (Peattie and Morley 2008a; Sodhi and Tang 2011; White et al. 2018; Social Enterprise UK 2019), sales (Sodhi and Tang 2011), I.T. (Peattie and Morley 2008a) and planning (BRASS 2004; Peattie and Morley 2008a). It has been said that SEs often have a poor understanding of pricing dynamics, leading to products being underpriced, inadequate packaging, and limited communication with customers (Peattie and Morley 2008a; White et al. 2018). Instead, marketing relies on personal promotion by the social entrepreneur (Peattie and Morley 2008a; 2008b), leveraging its SE status (Social Enterprise UK 2019). SEs also leverage their social mission to attract and retain staff (Desa 2010; Von der Weppen and Cochrane 2012; Doherty et al. 2014), with Von der Weppen and Cochrane (2012) illustrating how organisations looked to attract and retain high-quality workers through matching the intrinsic values of candidates with

that of the enterprise. This capitalises on people's desire for their working life to be part of something bigger (Patel and Mehta 2011) and can facilitate loyalty and enthusiasm among the worker cohort (Von der Weppen and Cochrane 2012). Royce (2007) found similar methods for selecting candidates among SEs to that found in the public and private sectors. However, they also tend to appoint candidates based on the broadness of their skills (Royce 2007). SEs have also been found to rely on the hiring and training up inexperienced individuals, often locals, into multi-skilled workers (BRASS 2004; Royce 2007; Von der Weppen and Cochrane 2012). Among SEs surveyed by Social Enterprise UK (2019) three quarters claimed to invest heavily in staff development and training with 85% sourcing more than half of their workforce locally, and two-thirds recruiting their entire workforce locally.

2.6.3.3 Volunteers

A reliance on unpaid labour is well-cited throughout the SE literature (IFF Research 2005; Sharir and Lerner 2006; Royce 2007; Doherty et al. 2014; Lyon et al. 2019; Roumpi et al. 2020), with two thirds of SEs surveyed by IFF Research (2005) using volunteers. This equates to 40% of the sector's entire workforce (IFF Research 2005).

Managing a workforce consisting of both paid and unpaid labour represents a significant challenge for SEs (Royce 2007; Roumpi et al. 2020; White et al. 2022). SEs that use both forms of labour tend to experience higher staff turnover (Liu and Ko 2012, cited in Doherty et al. 2014). Doherty et al. (2014) emphasise the importance of managing the needs of both paid employees and volunteers. Unlike paid employees, who can be expected to follow instructions to prevent negative impacts on pay, volunteers cannot be controlled through pay (Molyneaux 2004). This is because they are "*free to withdraw their labour*" should they become dissatisfied (Doherty et al. 2014, p. 426). Thus, in being financially independent of the organisation, volunteers can behave in damaging ways

(Molyneaux 2004). Molyneaux (2004) further explains that although volunteers are not paid, they are not without ambition. Consequently, Molyneaux (2004) and Doherty et al. (2014) suggest implementing mitigation processes, including evaluating volunteers' motivations before relying on their services (Doherty et al. 2014). Molyneaux (2004) suggests establishing a set of informally negotiated arrangements. These agreements are based upon five propositions proposed by Harris (1998), cited in Molyneaux (2004, p. 16):

1. *"Associations have to find a balance between meeting the individual needs of their members and maintaining a vision of their longer-term goals".*

For the first proposition, Molyneaux (2004) highlights the uncertainty of voluntary labour. With the absence of pay, volunteers cannot be made to comply with demands, only contributing in-exchange for satisfying their wants, often psychological benefits. Otherwise, organisations run the risk of their withdrawal (Molyneaux 2004). Therefore, Molyneaux (2004) calls for volunteers to ask themselves whether the organisation's stance should be maintained regarding those it is seeking to support.

2. *"Associations have to find a balance between member-benefit and public benefit goals and activities".*

According to Molyneaux (2004), as organisations grow, members become more inclined to pursue collective goals. In this event, Molyneaux (2004) emphasises the importance of considering the needs of the wider population and a willingness to act in the interest of those beyond the business's scope.

3. *"Setting priorities in associations is constrained by the presence of competing internal interests and factions".*

Thirdly, Molyneaux (2004) suggests that internal changes to an organisation can lead some volunteers to becoming estranged. Therefore, Molyneaux (2004) suggests nurturing creativity through a mutual search for opportunities, interdependence, and a continued search for justice.

4. *"The fact that members participate in associations as volunteers limits the extent to which members can be directed or managed".*

Often drawn by autonomy and self-fulfilment, volunteers may not expect to be managed by traditional hierarchical bureaucratic norms and may withdraw should that happen (Molyneaux 2004). Hence, Molyneaux (2004, p. 22) suggests volunteers clarify in advance *"the level of expertise, competence and diligence"* they are willing to provide.

5. *"Where paid staffs are employed by associations, their status and role may be contentious".*

Finally, because volunteers and employees having distinct relationships with the organisation, they can sometimes undermine one another's legitimacy (Pearce 1993, cited in Molyneaux 2004). Hence, Molyneux (2004) suggests evaluating how interconnected the two should be, considering their purpose and nature, to establish clear boundaries and prevent disputes.

2.6.3.4 Finance

SEs utilise various sources of finance (BRASS 2004; IFF Research 2005; Shaw and Carter 2007; Lyon et al. 2019; Social Enterprise UK 2019) and, therefore, need to handle different income streams (Lyon et al. 2019). IFF Research (2005) categorises these as; (1) 'grants and donations', (2) 'earned income' and (3) 'other income'. Grants (BRASS 2004; Harding 2007; Shaw and Carter 2007; Rykaszewski et al. 2013; Doherty et al.

2014; Social Enterprise UK 2019) and donations (Sharir and Lerner 2006; Sodhi and Tang 2011; Doherty et al. 2014), as sources of funding, do not involve the direct exchange of goods and / or services. While not given in return for goods and / or services, there may be expectations for specific use (Islam 2007), which may require documentation (IFF Research 2005). Grant funding can be sourced from Central Government (Harding 2007; Shaw and Carter 2007; Sodhi and Tang 2011), local authorities (BRASS 2004; Shaw and Carter 2007) and lottery organisations (BRASS 2004). Earned income is generated through the sale of goods and / or services, mirroring the commercial activities of for-profit businesses (IFF Research 2005; Doherty et al. 2014). Lastly, 'other income' is neither earned or given freely, such as memberships (Rykaszewski et al. 2013; Social Enterprise UK 2019) and returns on investments, like property (IFF Research 2005). While not explicitly listed by IFF Research (2005), here, funding via bank loans (BRASS 2004; GHK 2005; Harding 2007; Rykaszewski et al. 2013; Doherty et al. 2014; Social Enterprise UK 2019) and overdrafts (GHK 2005; Harding 2007; Social Enterprise UK 2019) also constitute 'other income'.

The ability to leverage multiple income streams is attributed to SE's hybrid identity. Seanor and Meaton (2008) and Doherty et al. (2014) highlight that by transcending categorical boundaries, SEs can access a broader range of funding. Having both social and economic objectives legitimises the use of both commercial and philanthropic funds (Doherty et al. 2014). This has been supported by legal reforms which have removed constraints on capital acquisition by SEs. For example, the introduction of the Community Interest Company (CIC) eliminated the need for dual legal structures to accommodate their dual mission (Doherty et al. 2014). Peattie and Morley (2008a) note that SEs capitalise on their flexible identities by adopting structures based on their perceived tax benefits and grant funding opportunities. However, it is important to note that the hybrid nature of SEs can create ambiguous identities, thus

hindering access to funding (Seanor and Meaton 2008; Doherty et al. 2014). This ambiguity can damage the perceived legitimacy of SEs, while a primary social objective can make them less attractive to outside investors (Doherty et al. 2014). This is supported by Harding (2007), who found that most SEs believed their funding applications were rejected due to the nature of their organisation. A further challenge associated with hybridity is mission drift (Spear et al. 2009; Doherty et al. 2014; Ebrahim et al. 2014), whereby increased focus on the generation of revenue results in a loss of sight of the enterprise's social mission (Ebrahim et al. 2014). While mission drift is not specific to SEs, they are particularly prone to its occurrence given their dependency on commercially generated income to achieving their social objective (Ebrahim et al. 2014), coupled with external market pressure to commercialise (Spear et al. 2009) which can see their perceived legitimacy among stakeholders called into question (Doherty et al. 2014). While Ebrahim et al. (2014) argue that the dual objectives of SEs are inherently contradictory, Seanor and Meaton (2008) alludes to the presence of propositions that there exists no tension in the balancing of social and economic goals. Such a proposition is presented by White et al. (2022), who, in challenging the widely accepted view that SEs are inherently contradictory, reframes the idea of SE's 'dual mission' as a "*means/ends divide*" (2022, p. 507) akin to any business.

Funding sources used by SEs tend to change as the organisation evolves. During initial stages, Harding (2007) found that bank overdrafts were prevalent, but as SEs matured, they became more commercial, relying on income generated via trading activities (Harding 2007). Alternatively, GHK (2005) found that SEs became more likely to target external funding as they matured, as they felt more confident about making repayments. So, do established SEs increasingly rely on commercial revenue or external funding? The answer is both. Rykaszewski et al. (2013) argue that external funding helps SEs transition to sustainable revenue streams.

Therefore, it can be argued that increased reliance on trading activities, as identified by Harding (2007), is facilitated by the greater external funding sought by SEs, as identified by GHK (2005). This is supported by Peattie and Morley (2008a), who identified that external funding is often sought for purchasing and / or developing assets.

While grant funding remains commonly used among SEs (BRASS 2004; GHK 2005; IFF Research 2005; Peattie and Morley 2008a; Desa 2010; Social Enterprise UK 2019), especially in deprived areas (IFF Research 2005), there is a noticeable shift away from its reliance (GHK 2005; Zainon et al. 2014). This is attributed to an expected reduction in grant support (Peattie and Morley 2008a; Rykaszewski et al. 2013; Zainon et al. 2014) and cuts to sector funding at both local and national levels (Zainon et al. 2014). This shift away from grant funding is illustrated by Social Enterprise UK (2019), who found that 28% of SEs generated income through public sector grants, down from 37% in 2017. This shift is further apparent when considering that IFF Research (2005) and GHK (2005) found that 53% and 54% of SEs had received some form of grant funding, respectively. While Social Enterprise UK (2019) found that 92% of respondents had applied for grant funding in the last year, this could be attributed to the benefits of the application process, such as access to free business advice workshops (Rykaszewski et al. 2013). This shift away from grant funding is also reflected in donations, with 19% of SEs generating income via donations, down from 27% in 2017 (Social Enterprise UK 2019).

With this shift, SEs have increasingly relied on commercial activities to achieve their social objectives (GHK 2005; Sharir and Lerner 2006; Shaw and Carter 2007; Peattie and Morley 2008a; Seanor and Meaton 2008; Von der Weppen and Cochrane 2012; Ebrahim et al. 2014). IFF Research (2005) found that 88% of SEs generated 50% or more of their income through trading activities. However, for Social Enterprise UK (2019), this

was 92%, with 77% of which earning more than 75% of their income via trading activities. IFF Research (2005) categorises trading activities into five groups: (1) Health and Social Care, (2) Community, Social and Personal Services, (3) Estate / Renting, (4) Education and (5) Wholesale and Retail. The primary recipient of these trading activities is the public (55%) (63% for SEs in Wales) (Social Enterprise UK 2019). Additionally, 47% of SEs trade with public and PSOs, respectively. For the public sector, this increases to 66% among large SEs, defined as those turning over £1-5m (Social Enterprise UK 2019). Furthermore, 36% of SEs trade with other SEs, while 12% trade internationally (Social Enterprise UK 2019). For each of the 11 SEs studied by Von Der Weppen and Cochrane (2012), the target market for commercial activities was separate from that of their social mission. This separation allowed the SEs to capitalise on high-earning opportunities. For this reason, Von der Weppen and Cochrane (2012) claim that such a separation is critical to the success of SEs. The SE funding landscape is highly uncertain (BRASS 2004; Sodhi and Tang 2011) and riddled with "*short-termism*" (BRASS 2004, p. 54); and while reduced grant funding represents a prominent threat to SEs (Peattie and Morley 2008a), its reliance can be counterproductive and often accompanied by cash flow problems (BRASS 2004). Especially as the rate of failure is highest among government grants, coupled with bank loans (Harding 2007), with such failures creating funding gaps (Rykaczewski et al. 2013). Sufficient funding at the startup phase is crucial to the long-term success of SEs (BRASS 2004; Sharir and Lerner 2006; Peattie and Morley 2008a). Sharir and Lerner (2006) found that the ability to pay full-and-part time staff during the startup phase was an indicator of both employee retention and the enterprise's success. While regular payments support the on-going management of SEs, lump-sum payments upfront are necessary to cover start-up costs (Sharir and Lerner 2006; Peattie and Morley 2008a), especially acquiring premises. However, funding bodies are reluctant to support such acquisitions over fears of gifting unfair advantages (BRASS 2004; Sharir and Lerner 2006). Patel and

Mehta (2011) claim that SEs can optimise through resource reuse. This is evident in their choice of premises, with SEs often inhabiting old or dilapidated buildings due to their affordability and lack of competition (BRASS 2004).

Relying on grant funding can hinder the marketing efforts of SEs. They may avoid marketing for fear of appearing too successful, which could jeopardise future grant funding opportunities (BRASS 2004; Peattie and Morley 2008a; 2008b). Furthermore, "*the grant funding landscape has become an increasingly competitive and demanding marketplace*" (Nicholls and Cho 2006, p. 102), with success increasingly dependent on performance and performance measurement (BRASS 2004; Nicholls and Cho 2006; Royce 2007; Peattie and Morley 2008a; Desa 2010; Rykaszewski et al. 2013). This is a straightforward process for commercial organisations where there are standardised approaches (Peattie and Morley 2008a; Rykaszewski et al. 2013; Ebrahim et al. 2014), such as Financial Return on Investment (FROI) (Zainon et al. 2014). However, for SEs, quantifying and measuring social impact can prove difficult (Rykaszewski et al. 2013; Samuel et al. 2018; Gupta et al. 2020; White et al. 2022) and is worsened by the ambiguity around defining SEs (Shaw and Carter 2007; Granados and Rivera 2018; Lyon et al. 2019). While several tools for measuring social impact exist, including Social Return on Investment (SROI), adaptations of the Balanced Scorecard and Best-Practice Benchmarking (Vega and Kidwell 2007; Peattie and Morley 2008a; Desa 2010), a universal method does not (Rykaszewski et al. 2013; Ebrahim et al. 2014). This was observed in the tourism sector by Von der Weppen and Cochrane (2012). They found that SEs used various indicators to track progress towards social objectives, including informal assessments based on anecdotal feedback from volunteers. The lack of a universal approach to measuring social impact can result in SEs struggling to benchmark themselves against competitors, placing them at a disadvantage when competing for funding (Rykaszewski et al. 2013).

Furthermore, as competition for grant funding has increased (BRASS 2004), SEs have become preoccupied with trying to secure said funding, to the detriment of other organisational activities. This provides an explanation for why SEs experience greater financial difficulty compared to for-profit organisations, as reported by Fraser (2006). However, SEs were also found to face fewer problems with red tape compared to commercial organisations (Fraser 2006), which could be attributed to the hybrid nature of SEs.

Beyond grants, donations and earned income, IFF Research (2005) found that 11% of SEs generated revenue from other income sources. At the time, this accounted for 5% of the sector's total turnover, equalling £0.8bn. However, Social Enterprise UK (2019) found that a fifth of SEs generated income through memberships alone, suggesting that SEs have become increasingly innovative in their approaches to income generation. Therefore, in line with Peattie and Morley (2008a) and Von der Weppen and Cochrane (2012), it is argued here that the long-term success of SEs is dependent on leveraging multiple income streams, both commercial and non-commercial. This is further supported by Adamson (2003), cited in Peattie and Morley (2008a), who identified a combination of seed and core funding as a success factor for SEs.

2.6.3.5 Planning

Islam (2007, p. 5) states that *"simply setting up a social enterprise does not necessarily equate to lifting people out of poverty"*. Success requires careful planning and regular reviews (Von der Weppen and Cochrane 2012) to reduce the possibility of being established with insufficient initial capital (BRASS 2004; Rykaszewski et al. 2013), or without a sustainable revenue stream. Yet, Royce (2007) found that only 5% of SEs conducted regular formal planning, while Sharir and Lerner (2006) identified that most social entrepreneurs did not conduct pre-planning. Furthermore, while 48% of SEs conducted succession planning on an ad hoc basis, 46%

conducted none (Royce 2007). This lack of medium-and-long-term planning among SEs could be attributed to the absence of an established roadmap for the organisational development of SEs (Peattie and Morley 2008a).

Market research is a crucial part of the planning process for successful SEs (Sharir and Lerner 2006; Islam 2007; Von der Weppen and Cochrane 2012; Rykaszewski et al. 2013). Rykaszewski et al. (2013) calls for SEs to go beyond simple surveys when conducting market research. Instead, establishing demand using thorough interviews, taking particular care with perceived demand, which may be false as respondents often feign interest and provide positive feedback, especially when conversing with someone who feels positive about the subject in question (Rykaszewski et al. 2013).

Sharir and Lerner (2006) found testing the market through the provision of a select number of goods or services to be critical to creating a sustainable customer base. Islam (2007) also highlights the importance of market testing, explaining how a feasibility test enabled the SE 'HELP' to recognise a lack of viability in relation to the establishment of a sewing and stitching business. This was due to an abundance of competitors, thus preventing wasted time and costs (Islam 2007). Thorough market research allows SEs to mitigate funding problems, as a deep understanding of their target market and an accurate idea of current demand make funding applications more convincing from a funder's perspective (Rykaszewski et al. 2013), by identifying a sustainable clientele base, and alleviating dependency on future grants (Sharir and Lerner 2006).

Patel and Mehta (2011) suggest that a significant challenge in relation to planning for SEs is scaling up operations for greater impact without losing sight of their primary social objective. However, Peattie and Morley

(2008a) argue that SEs may be averse to growth, like some traditional small businesses, due to a fear of losing control and / or identity (Peattie and Morley 2008a). This may have long-term benefits for the SE sector with Seanor and Meaton (2008) calling into question a desire to grow among SEs, believing that such growth may lead to larger SEs competing against one another as opposed to a network of smaller SEs working together.

2.6.3.6 Governance

SEs tend to be democratic (Social Enterprise UK 2019), synonymous with terms such as “*community*” and “*collective*” (Shaw and Carter 2007, p. 430), commonly adopting multi-stakeholder governance structures (Spear et al. 2009).

Beneficiaries represent a prominent presence in the governance of SEs (Shaw and Carter 2007; Von der Weppen and Cochrane 2012; Social Enterprise UK 2019), with two-thirds of those surveyed by Social Enterprise UK (2019) reporting their active involvement in decision making, while a quarter of respondents stated having beneficiaries present on their management board. In addition to this, almost half of those surveyed by Social Enterprise UK (2019) had local community-based management board representatives (Shaw and Carter 2007), while three-fifths reported the active involvement of community representatives in decision making (Social Enterprise UK 2019). Furthermore, while Aiken (2006), cited in Peattie and Morley (2008b), identified low involvement by employees in the governance of SEs, 86% of SEs surveyed by Social Enterprise UK (2019) stated that their staff were involved in the decision-making process, with a third having at least one employee present on their management board. Staff involvement in decision-making was achieved through several channels, including open-door policies between employees and managers, staff forums, employee surveys and staff voting (Social Enterprise UK 2019).

Multi-stakeholder governance structures can facilitate greater accountability to staff and beneficiaries (Doherty et al. 2014), boost stakeholder credibility (Von der Weppen and Cochrane 2012) and increase social capital (Spear et al. 2009).

Spear et al. (2009) highlight prominent governance challenges among different forms of SE:

1. Mutual Organisations

Mutual organisations such as co-operatives and credit unions commonly experience problems associated with membership organisations. Specifically, recruiting board members with the necessary skills and experience, and maintaining commitment and involvement among members (Spear et al. 2009). The former is particularly problematic among small organisations and those in disadvantaged areas, with business and financial expertise particularly lacking (Spear et al. 2009). Furthermore, membership commonly declines overtime, or becomes inactive, especially as the organisation grows (Spear et al. 2009). An active membership base is a source of strength for an organisation by providing support and resources. Alternatively, inactivity risks the organisation becoming run by a few dominant board members akin to that of the 'iron law of oligarchy' presented by Michels (1949), cited in (Spear et al. 2009).

2. Trading Charities

Charity law requires charities that wish to trade to establish a trading subsidiary, thus, requiring a multi-level governance structure and coordination with clear roles and responsibilities to avoid overlaps (Spear et al. 2009). Furthermore, there is a need for adaption in culture from

one synonymous with charities to one of entrepreneurship. This can be problematic due to a lack of business knowledge and being risk averse (Spear et al. 2009).

3. Public Sector Spin-offs

For such organisations, choosing appropriate legal and governance structures are a significant challenge (Spear et al. 2009), due to the range of options available. This makes selection complex, requiring specialist advice, while the wrong decision can prove time-consuming and costly (Spear et al. 2009). Furthermore, organisations must manage the challenges of moving employees from public sector employment, such as pensions and employment terms (Spear et al. 2009). This is coupled with installing a management board capable of managing this transition (Spear et al. 2009).

4. New-start SEs with Small Business Origins

Along with facing similar challenges to traditional small businesses, Spear et al. (2009) argue that by prioritising the successful establishment of the venture and the achievement of social objectives, social entrepreneurs often neglect its governance structure, thus facing issues of accountability and transparency.

As hybrid organisations, SEs face unique governance challenges around managing the perceived trade-off between social and commercial aims (Spear et al. 2009; Doherty et al. 2014; Ebrahim et al. 2014). Ebrahim et al. (2014) propose several strategies for avoiding mission drift, including having managers monitor the relationship between the two objectives. However, it is important to acknowledge that challenges in acquiring the necessary skills, cited above, stretches to those at the board level and the ability to manage such a trade-off (Royce 2007; Peattie and Morley

2008a; Patel and Mehta 2011; Von der Weppen and Cochrane 2012; Ebrahim et al. 2014; Zainon et al. 2014). Furthermore, as opposed to the private sector, where shareholders represent the dominant stakeholder, SEs are likely to have a variety of stakeholders including, but not limited to; funders, beneficiaries, and customers (in the event they are a separate demographic to beneficiaries) (Spear et al. 2009). This, coupled with a tendency among SEs to adopt a multi-stakeholder governance structure, can result in managers needing to manage the needs and demands of a variety of stakeholders (Spear et al. 2009; Doherty et al. 2014; Roumpi et al. 2020).

Finally, a perceived lack of professionalism and long-term sustainability among SEs can create an unwillingness among mainstream organisations to purchase from SEs (White et al. 2018) as they “*did not take them seriously*” (BRASS 2004, p. 38). Hence, SEs must manage external pressure to become more ‘professional’ and ‘business-like’ (Peattie and Morley 2008a; 2008b; Seanor and Meaton 2008), which many SEs are reluctant to do due to concerns of being seen as “selling out” (Peattie and Morley 2008a) and less trustworthy (Fenton et al. 1999, cited in Seanor and Meaton 2008).

2.6.3.7 Innovation

Several authors propose innovation as a defining characteristic of social entrepreneurship (Nicholls and Cho 2006; Shaw and Carter 2007; Peattie and Morley 2008a; Desa 2010; Rykaszewski et al. 2013; Doherty et al. 2014). Desa (2010) argue that SEs innovate by leveraging the current assets of disadvantaged groups, while Shaw and Carter (2007) argue it is demonstrated by applying unique solutions to prominent social problems. However, Peattie and Morley (2008b) cite debates surrounding the extent SEs can be considered innovative despite not engaging in R&D (Jones et

al. 2007, cited in Peattie and Morley 2008b). Spear (2006) also found limited innovation among those studied.

The Government's Small Business Survey (2018), cited in Social Enterprise UK (2019), uses the percentage of businesses introducing new or improved products and / or services over the last year as an innovation indicator. Among the SEs surveyed, 56% demonstrated such innovation, a 6% increase from 2017. This percentage of innovative SEs is higher than that of traditional SMEs (36%). However, this still leaves a substantial percentage of SEs (44%) that, by the Government's Small Business Survey (2018), cited in Social Enterprise UK (2019) definition, did not demonstrate innovation. This indicates that while SEs are more innovative than conventional SMEs, innovation is not a defining characteristic. Alternatively, Doherty et al. (2014) attributes the innovative nature of SEs to their ability to manage the demands of a variety of stakeholders while using unique combinations of resources to achieve social objectives despite resource constraints. This perspective strengthens the case for innovation as a defining characteristic of SE. However, given the emergence of social franchising (Litalien 2006; Doherty et al. 2014; Cumberland and Litalien 2018; Naatu and Alon 2019) and the concept of replicator entrepreneurs proposed by Young and Lecy (2014), here, SEs are not considered inherently innovative.

2.6.3.8 Collaboration

Like the SCRes literature, collaboration was the most prominently discussed factor throughout the SE literature, as a determinant of success among SEs (Sharir and Lerner 2006; Spear 2006; Islam 2007; Shaw and Carter 2007; Peattie and Morley 2008a; Seanor and Meaton 2008; Desa 2010; Von der Weppen and Cochrane 2012; Doherty et al. 2014). The collaborative efforts of SEs involve various parties (Table 15), both formally and informally, with longer collaborations making a greater contribution to SE success (Sharir and Lerner 2006).

Table 15: SE collaborators

Collaborators	Cited By
OTHER ORGANISATIONS	Spear (2006); Sharir and Lerner (2006); Peattie and Morley (2008a); Sodhi and Tang (2011)
FELLOW SEs	Peattie and Morley (2008a); Sodhi and Tang (2011)
GOVERNMENT AGENCIES	Spear (2006); Desa (2010)
CUSTOMER	Spear (2006); Seanor and Meaton (2008); Doherty et al. (2014)
TARGET BENEFICIARIES	Von der Weppen and Cochrane (2012)
FAMILY MEMBERS	Spear (2006)
LOCAL COMMUNITY MEMBERS	Islam (2007)

Davies and Ryals (2010), cited in Doherty et al. (2014) found who SEs collaborate with changes as the organisation evolves, initially relying on family, then collaborating increasingly further afield as the organisation grows.

Formal networking includes partnerships with government agencies and profit-seeking organisations (Spear 2006; Peattie and Morley 2008a; Desa 2010). Desa (2010) states that government agencies support social entrepreneurs by; (1) generating increased awareness of social issues, (2) acquiring resources, (3) coordinating between organisations and (4) implementing programs. Doherty et al. (2014) stress the importance of collaborating with organisations both within and across sectors to achieve the venture's dual mission. Such collaborations allow SEs to acquire a variety of resources (Spear 2006; Peattie and Morley 2008a; Desa 2010;

Patel and Mehta 2011) and increase their legitimacy (Patel and Mehta 2011; Granados and Rosli 2020). Furthermore, through such relationships, both the SE and PSO can reap reputational benefits (Peattie and Morley 2008a). For SEs, collaborating with PSOs helps alleviate concerns of a perceived lack of reliability, professionalism, and business skills. Alternatively, for PSOs, collaboration with SEs enriches the company's CSR, as well as worker morale through work links to social causes (Herlin 2015). However, these partnerships are not without risk. For SEs, associating with commercial ideologies can cause reputational damage (Herlin 2015), especially when a collaborative effort fails, as well as the possible loss of independence and control due to a power imbalance (Herlin 2015). Further challenges include incompatibility of size and scale between organisations, obtaining acceptance within the PSO and the differences in language used, which can result in communication issues (Community Action Network 2005, cited in Peattie and Morley 2008a). To combat these risks and challenges, Litalien (2006, p. 78) calls for the relationship to be publicised, thus creating what is referred to as a "*halo effect of good will*", ensuring ongoing engagement and accountability of partners.

Despite this, there may still be a reluctance among SEs to collaborate with private organisations, attributed to an unwillingness to be associated with business ideologies for risk of losing legitimacy and independence (Herlin 2015). Instead, especially in the UK (Peattie and Morley 2008a), SEs have shown a preference for informal networking (BRASS 2004; GHK 2005), seeking support from NPOs (BRASS 2004; GHK 2005; Peattie and Morley 2008a), personal contacts (BRASS 2004; Peattie and Morley 2008a), and the local community (GHK 2005; Shaw and Carter 2007; Royce 2007; Patel and Mehta 2011). A reluctance to collaborate with private organisations may be particularly prominent within a food poverty context as supermarkets and other large food retailers have been largely blamed for the creation of food deserts (Reisig and Hobbiss 2000; Wright

et al. 2016; Wang et al. 2018). This is because it has been argued that by situating themselves on the edge of cities (Wrigley 2002), as well as offering lower prices, more variety, more parking and longer hours (Wright et al. 2016), supermarkets and other large food retailers have stripped away access to food provision within UK cities (Wrigley 2002; Wright et al. 2016).

Collaboration among SEs encourages trading and co-development, as illustrated by 'Community Action Network', a network of approximately 700 members (GHK 2005). Sharir and Lerner (2006) state that social entrepreneurs depend on resources sourced through their local networks. Moreover, by collaborating with members of the local community, SEs can gain resources and legitimacy (White et al. 2022), which itself facilitates the acquisition of further resources (Desa 2010). The importance of collaborating with the local community is reiterated by Patel and Mehta (2011, p. 226), who call for SEs to be "*locally tuned and responsive*" to understand their environment, using local feedback loops, leveraging local materials, and abiding by local customs. This allows SEs to learn, adapt, and co-create, while the use of local resources creates shorter, more efficient SCs (Patel and Mehta 2011).

Despite this preference for informal networking, here, it is argued that SEs can and should utilise and benefit from both formal and informal channels, which can both help in securing political support (Sharir and Lerner 2006; Spear 2006; Shaw and Carter 2007; Patel and Mehta 2011), expertise (Spear 2006) and funding (Shaw and Carter 2007).

A lack of skills among SEs (BRASS 2004; Peattie and Morley 2008a; Spear et al. 2009; Sodhi and Tang 2011; White et al. 2018; Social Enterprise UK 2019; Allen 2020) has seen access to external support services become critical to success (GHK 2005; Peattie and Morley 2008a). Despite this, the uptake of such support can be limited due to a reluctance to be

associated with profit-driven ideologies (Herlin 2015), coupled with a poor perception of the support services and a perceived lack of applicability and usefulness (BRASS 2004; GHK 2005; Royce 2007; Granados and Rivera 2018). BRASS (2004, p. 54) argue much of the support provided is:

lacking in focus for the social enterprise sector, too general, too basic, too short-term and demonstrating a basic lack of understanding of what the sector was about or the principles by which it operated.

This has resulted in calls for an improved understanding of the SE sector among support providers (GHK 2005; Royce 2007), considering how needs change as they evolve (GHK 2005). During the formulation stage, SEs require support in capacity building and community development. As it grows, specialist support in areas such as finance and law are needed. Once the organisation matures, adopting more traditional business operations, the more traditional business support required (Welsh Assembly 2003, cited in GHK 2005). Alternatively, BRASS (2004) claims SEs require customised legal, financial, planning and management support, while Co-operatives UK (2004), cited in GHK (2005), identified that cooperatives had four business needs; (1) generic business support, (2) sector / activity specific, (3) SE specific and (4) managing cultural change.

BRASS (2004) calls for SEs to no longer perceive business support services negatively. While they may not currently offer the support required, BRASS (2004) argued that pressure from the social sector, coupled with the government's interest in the sector, can bring the necessary change to the support provided. However, given the uncertainty of support services and their dependency on funding, relying on such

services may be precarious, with Royce (2007) identifying cases where training and support services were removed almost overnight.

2.6.3.9 Trust

As with the SCRes literature, trust is discussed as key component of both collaboration and social capital within the social entrepreneurship literature (Royce 2007; Seanor and Meaton 2008). Seanor and Meaton (2008) argue that, without trust, SEs are reduced to working in isolation.

2.6.3.10 Social Capital

Seanor and Meaton (2008) attribute the strength of the SE sector to its social capital, identifiable as expertise, contacts, advice, and even political support. These can come from a range of sources, including family members, customers, local businesses, and support agencies (Spear 2006).

Through extensive experience, both within and across various sectors, social entrepreneurs build substantial personal credibility and dense networks, from which they can access significant resources of social capital (Sharir and Lerner 2006; Desa 2010; Von der Weppen and Cochrane 2012). The local community represents a source of credibility for SEs (Shaw and Carter 2007; Patel and Mehta 2011; Von der Weppen and Cochrane 2012; Granados and Rivera 2018), providing the enterprise with a “*real face*” (Von der Weppen and Cochrane 2012, p. 506).

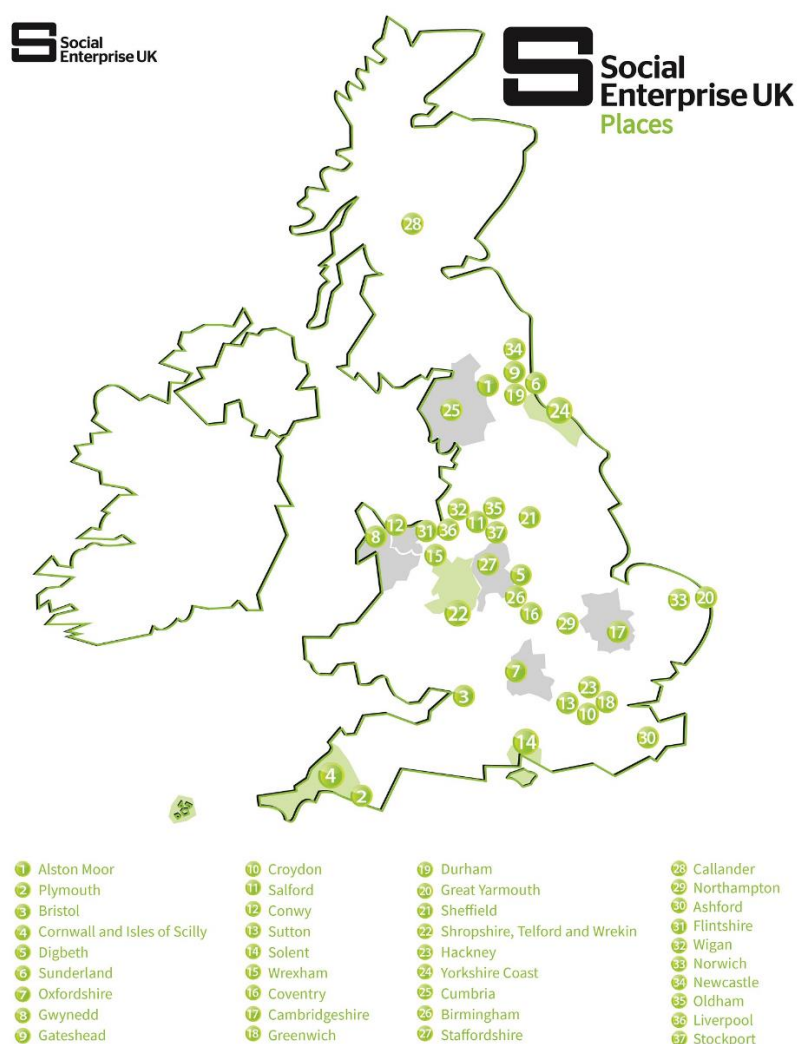
Furthermore, both customers and the local community are cited as sources of innovation (Nicholls and Cho 2006; Desa 2010; Rykaszewski et al. 2013), with Nicholls and Cho (2006, p. 104) stating “*innovation is also a socially embedded phenomenon, in that it both influences and is influenced by the environment*”.

The local community also represents a source of employees and volunteers (Von der Weppen and Cochrane 2012; White et al. 2018; Social Enterprise UK 2019; White et al. 2022), with beneficiaries also being employees in five of the ten cases studied by Von der Weppen and Cochrane (2012). The utilisation of employees and volunteers from the local community also aids in preventing mission drift (Von der Weppen and Cochrane 2012) through holding management accountable (Spear et al. 2009). Alternatively, Ebrahim et al. (2014) propose that mission drift can be avoided by instilling downward accountability to beneficiaries.

Through strong relationships with key stakeholders, such as customers, volunteers and the local community, SEs have been able to identify and access sources of capital (Shaw and Carter 2007; Seanor and Meaton 2008; Doherty et al. 2014). Rykaszewski et al. (2013) found that support from external parties including funding bodies, industry leaders, fellow SEs, and academics, reduced the possibility of funding application rejections, and the risk of funding gaps. This is supported by Shaw and Carter (2007), who found that SEs could source customer and market data through networking, thereby strengthening grant applications (Rykaszewski et al. 2013). Furthermore, SEs can overcome challenges associated with premises through clustering and sharing space within the local community (Pinch and Sunley 2016). The benefits of such cohabitation include shared utility costs (GHK 2005; Peattie and Morley 2008a) and the promotion of inter-trading, co-development (GHK 2005; Peattie and Morley 2008a; Pinch and Sunley 2016) and knowledge sharing (Pinch and Sunley 2016). This also provides further evidence of optimising via recycling to achieve both economic and environmental goals, as suggested by Patel and Mehta (2011). To promote such benefits the SE Places programme looks to encourage clustering across the sector. Launched by Social Enterprise UK in 2014, the SE Places programme *“aims to promote, raise awareness, increase validity, and build markets for SE at a local (geographically bound) level”* (Samuel et al. 2022, p. 52;

Social Enterprise UK 2023b). Defined as “*hotspots of social enterprise activity*” (Social Enterprise UK 2023b, para. 2), as of 2023, there are 37 ‘SE Places’ across the UK (Figure 10). To become a SE Place, applicants must be a geographical area, such as a village, town, city, or borough, with substantial SE activity and a SE Places stakeholder committee responsible for representing that area (Samuel et al. 2022; Social Enterprise UK 2023c). The applicant must also be committed to growing and supporting SE in that area, coupled with knowledge sharing with other SE Places (Samuel et al. 2022; Social Enterprise UK 2023c).

Figure 10: UK SE Places.



Source: Social Enterprise UK (2023b).

Social entrepreneurs rarely invest their personal finances into the organisation (Shaw and Carter 2007), raising concerns about the possible mismanagement, or precarious handling of funding obtained by the entrepreneur. However, Peattie and Morley (2008a) argue that SE managers are typically risk averse. This aversity to risk could be attributed to local community involvement, which puts increased pressure on the social entrepreneur's personal credibility (Islam 2007; Shaw and Carter 2007; Sodhi and Tang 2011; Banerjee and Jackson 2017).

Seanor and Meaton (2008) state that support agencies represent gatekeepers to financial advice and funding opportunities among SEs. Fraser (2006) found that, like traditional businesses, the main source of financial advice among SEs was accountants. However, a similar percentage of SEs (30%) did not source any professional financial advice, even during times of serious financial difficulty; instead, relying on the advice of board members and trustees (Fraser 2006). This could again be attributed to a lack of fit, with advice given to SEs considered less effective at reducing the probability of serious financial problems compared to that provided to mainstream businesses (Fraser 2006). Alternatively, Seanor and Meaton (2008) found a reluctance to divulge problems amongst SEs, fearing that salary subsidies would be withdrawn if problems were disclosed. This further explains SEs' dependence on informal networks. Becoming aware of the funding opportunities available across an ever-changing funding landscape requires considerable time spent searching, to the detriment of social objectives (BRASS 2004). Thus, it is crucial SEs use support agencies to aid in this search (BRASS 2004). For example, SEC (2004), cited in GHK (2005), published a guide illustrating various funding options available to the social enterprise sector.

The role of social capital highlighted here supports the claim that, despite emphasis throughout social entrepreneurship literature being on the

individual (Spear 2006), “*within a social context, entrepreneurship may be a collective rather than individual activity*” (Shaw and Carter 2007, p. 430). This is supported by Spear (2006, p. 408), who found that success was grounded in both “*distributed entrepreneurship*” and “*circles of entrepreneurial activity*”, involving several stakeholders, both internally and externally. Concluding that “*entrepreneurship was not of the 'heroic individualistic' type in any of the cases, but joint, leader + supporters, or team based*” (Spear 2006, p. 408). While the concept of an all-powerful, individual, social entrepreneur may be unrealistic, Rykaszewski et al. (2013, p. 24) emphasise the importance of SEs having a “*champion*”, that is, someone that donors can have confidence in, as the face of the organisation, to lead and provide results.

2.6.3.11 Culture

A collaborative culture supports employee recruitment and retention, as by distributing responsibility throughout the workforce, staff “*feel empowered to speak up*” (Sharir and Lerner 2006; Rykaszewski et al. 2013, p. 22), and therefore, valued. This, in turn, generates greater commitment and loyalty among employees (Patel and Mehta 2011; Von der Weppen and Cochrane 2012), as well as dispelling discouragement from working within the sector (Royce 2007). For distributed responsibility to exist, there must be collaboration between management and both employees and volunteers. This can be achieved through an open culture consisting of two-way communication between said parties, populated by constant flows of information (Spear 2006; Shaw and Carter 2007; Patel and Mehta 2011; Von der Weppen and Cochrane 2012; Rykaszewski et al. 2013).

Staff involvement in decision-making can be achieved through several channels including open-door policies between employees and managers, staff forums, employee surveys and staff voting (Social Enterprise UK 2019).

2.6.3.12 Flexibility

Like SCRes, flexibility is cited within the SE literature, identified as a contributing factor to the success of SEs (Royce 2007; Patel and Mehta 2011; Von der Weppen and Cochrane 2012; Doherty et al. 2014). This is primarily achieved through their hybrid identity (Doherty et al. 2014) and minimalistic processes (Patel and Mehta 2011). However, this may not be possible for all SEs, particularly in the case of social franchising (Litalien 2006; Doherty et al. 2014; Cumberland and Litalien 2018; Naatu and Alon 2019). Social franchising involves “*the replication and rolling out of a foundation model of a social enterprise that has worked elsewhere*” (GHK 2005, p. 40), often for a fee (Litalien 2006; Doherty et al. 2014). Despite potential for increased social impact, Doherty et al. (2014) argue that, along with difficulties in finding potential franchisees who can afford the franchise fee, there’s low uptake in such opportunities due to difficulties in identifying a model that can be packaged and replicated.

2.6.3.13 Location

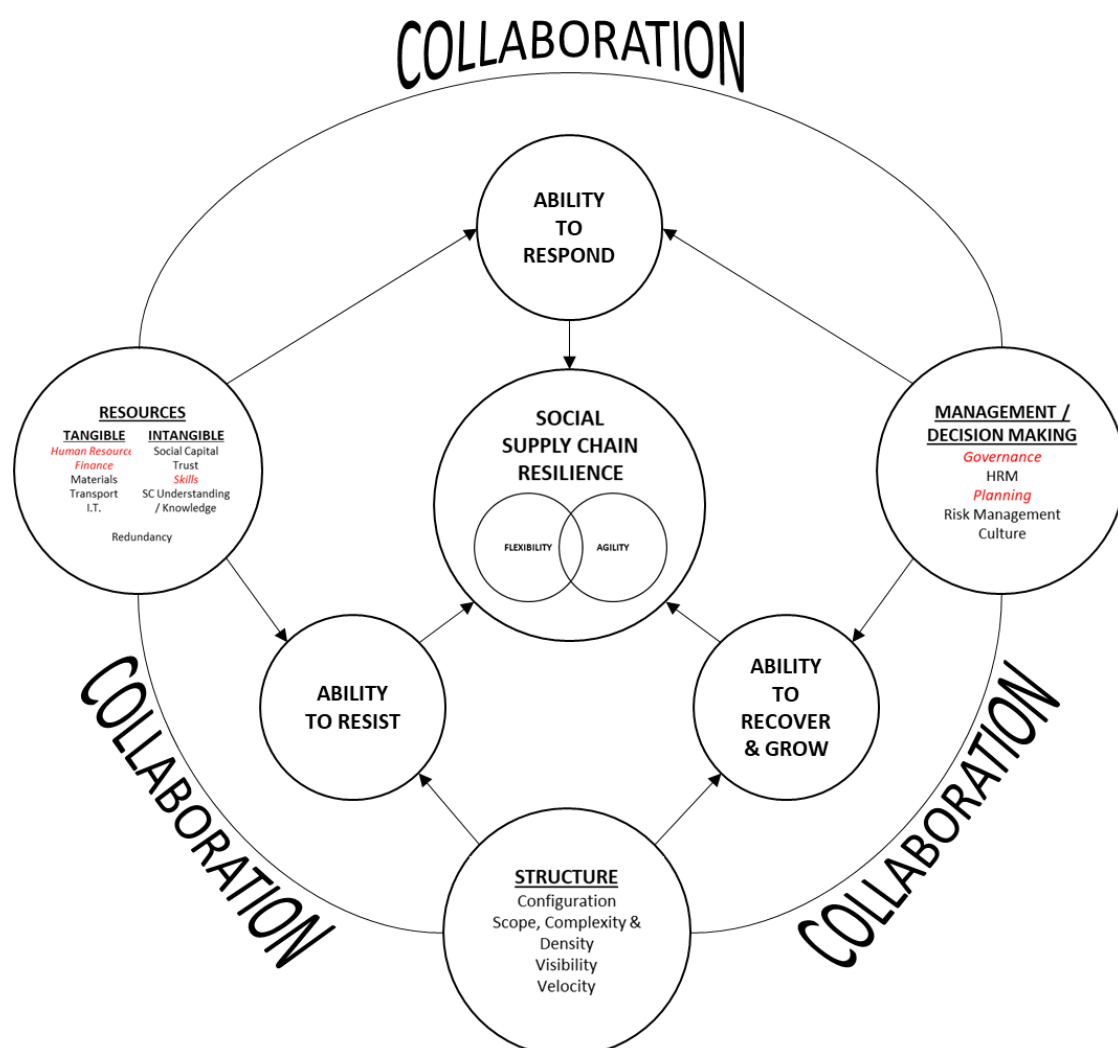
Location is important for SEs (Shaw and Carter 2007; Peattie and Morley 2008a; Granados and Rivera 2018; White et al. 2018), who are typically dependent on “*non-transferable place-specific factors*” including local authorities, infrastructure, and culture (Amin et al. 2002, cited in Peattie and Morley 2008a, p. 28). This lead Amin et al. (2002), cited in Peattie and Morley (2008a), to question the validity of social franchising. Shaw and Carter (2007) found that SEs were commonly set up in locations that were familiar, with 84% of those surveyed living in the same areas as their SE’s activities. It is argued that the collaborative efforts of SEs and their social capital depends upon the locations in which they are embedded. For example, Seanor and Meaton (2008) identified trust, an antecedent of social capital, as positively influenced by face-to-face exchange, especially when parties were close geographically. Trust is

associated with local accountability (Royce 2007; Seanor and Meaton 2008). Royce (2007) suggests community-based organisations are best placed to support the disadvantaged, having worked closely with the community, building trust. This suggests that collaboration is circular in nature, local accountability secured through collaborating with the local community generates trust which facilitates further collaboration.

2.6.4 Social Supply Chain Resilience – Conceptual Framework

From conducting a review of the SE literature, this LR was able to build on the conceptual framework for SCRes (Figure 7), adapting it to a SE context. Subsequently, a conceptual framework for social supply chain resilience (SOSCRes) has been developed (Figure 11).

Figure 11: Conceptual framework for SOSCRes.



In conducting a review of the SCRes literature, it appeared that, while the literature is thorough, with well-established concepts, much of its focus is on larger, often global, SCs. This contrasts with the SE literature, since although SEs can come in all sizes (Social Enterprise UK 2019; 2021; 2023a; CWMPAS 2023), the SE literature primarily focuses on small-and-medium SEs whose activities are locally bound. Yet, despite this contradiction, considerable overlap was found between these two distinct bodies of research. The remainder of this section will explore Figure 11, inside-out, providing an explanation of how well-established concepts of SCRes have been adapted for the SE context. The way in which SOSCRes (Figure 11) differs from SCRes (Figure 7) surrounds the elements required under 'resources', 'management / decision-making' and 'structure'. Additional elements have been incorporated while the nature of other elements present within both frameworks have been altered, as will be elaborated below. The section concludes with an explanation of how these elements combine to develop the ability to resist, respond, recover and grow in a SE context.

2.6.4.1 Resources

2.6.4.1.1 *Tangible*

2.6.4.1.1.1 Human Resources

A key human resource in developing SOSCRes is the social entrepreneur, individuals identified as central to the establishment of SEs within SOSCs. However, they can also be a vulnerability / single point of failure because of over-reliance (Von der Weppen and Cochrane 2012) and / or over-investment (Rykaszewski et al. 2013). SOSCRes is distinctive in its tendency to depend on leveraging a hybrid workforce consisting of both paid and unpaid workers due to the reliance on volunteers among SEs (IFF Research 2005; Sharir and Lerner 2006; Royce 2007; Doherty et al. 2014; Lyon et al. 2019; Roumpi et al. 2020).

2.6.4.1.1.2 Finance

Finance is not explicitly discussed throughout the SCRes literature. However, as a key business element, it is logical to assume it plays a role in developing SCRes. Here, it is argued that SOSCRes' relationship with finance differs to SCRes. Like SCRes, SOSCRes is argued to be primarily funded through commercial activities. However, SOSCRes for many SEs will also be dependent on philanthropy, legitimised by the presence of social and economic objectives (Doherty et al. 2014). Hence, SOSCRes is typically dependent on leveraging multiple sources of income and the evolution of an SE's funding mix (BRASS 2004; IFF Research 2005; Harding 2007; Shaw and Carter 2007; Peattie and Morley 2008a; 2008b; Social Enterprise UK 2019). The observed shift towards a reliance on income generated through commercial activities as a SE matures (Harding 2007; Rykaszewski et al. 2013) is believed to be beneficial from a SOSCRes perspective due to the uncertainty (BRASS 2004; Sodhi and Tang 2011) and risks surrounding grant funding (BRASS 2004; Peattie and Morley 2008a; Rykaszewski et al. 2013). Despite this shift, continuing to apply for grant funding is believed to benefit SOSCRes. If successful, this funding can be used to develop assets (Peattie and Morley 2008a), while just applying can provide access to training workshops (Rykaszewski et al. 2013).

This conceptual framework rejects Von der Weppen and Cochrane's (2012) assertion that a separation between the target market of commercial and social activities is critical to the success of SEs, and therefore SOSCRes. While a separation may support SOSCRes by allowing SEs to benefit from higher-earning opportunities, it is believed that these high-earning opportunities can exacerbate the risk of mission drift. Furthermore, it is argued that with target beneficiaries of social and commercial activities being the same, social, and financial objectives become entwined, thus eliminating the risk of mission drift.

2.6.4.1.2 Intangible

2.6.4.1.2.1 Social Capital

While social capital was identified as a component of SCRes, it is argued to be of greater importance to SOSCRes due to the financial constraints SEs operate under (Doherty et al. 2014). This has resulted in a lack of skills and experience throughout the sector due to heightened job insecurity (Royce 2007) and an inability to pay the market rate for those with the necessary skills (Doherty et al. 2014). Within this conceptual framework it is hypothesised that SOSCs compensate for this lack of skills through social capital. Hence, it is theorised that SOSCRes depends on social capital stemming from a range of stakeholders.

2.6.4.1.2.2 Trust

Here, it is hypothesised that trust is of greater importance in developing SOSCRes. This is due to the greater reliance on collaboration and social capital coupled with the lack of business and / or legal expertise among SEs. Without trust, nodes within a SOSC may need formal agreements in place to collaborate (Johnson et al. 2013), otherwise work in isolation (Seanor and Meaton 2008). With a lack of business and / or legal skills (BRASS 2004; Allen 2020), SEs may not have the expertise to make formal agreements.

2.6.4.1.2.3 Skills / Expertise

Due to a lack of skills among SEs (BRASS 2004; Peattie and Morley 2008a; Spear et al. 2009; Sodhi and Tang 2011; White et al. 2018; Social Enterprise UK 2019; Allen 2020), SOSCRes requires a broad emphasis on skill development / acquisition. SOSCRes, requires business (BRASS 2004; Spear et al. 2009; Allen 2020), financial (BRASS 2004; Spear et al. 2009) legal (BRASS 2004) planning (BRASS 2004; Peattie and Morley 2008a), marketing (Peattie and Morley 2008a; Sodhi and Tang 2011; White et al. 2018; Social Enterprise UK 2019), I.T (Peattie and Morley

2008a) and sales (Sodhi and Tang 2011) expertise. Performance measurement expertise is believed to be crucial, due to a reliance on grant funding during the start-up phase, coupled with grant allocation being increasingly dependent on performance measurement (BRASS 2004; Nicholls and Cho 2006; Royce 2007; Peattie and Morley 2008a; Desa 2010; Rykaszewski et al. 2013). Many of these skills may be found in the social entrepreneur(s), however, in line with Peattie and Morley (2008a), it is argued that to find the necessary skills in a single social entrepreneur is unlikely. Hence, within this conceptual framework, it is hypothesised that SOSCRes requires sourcing and developing skills through external support services (GHK 2005; Peattie and Morley 2008a).

2.6.4.1.3 Redundancy

While straightforward, building redundancy into a SC can be costly (Wicher and Lenort 2012; Tukamuhabwa et al. 2015; Purvis et al. 2016; Wang et al. 2016; Adobor and McMullen 2018). Given the financial constraints SOSCs operate under, it is argued here that SOSCRes is limited in the forms of redundancy (Table 9) deemed viable. Due to the financial costs involved, 'back-up sites' and 'alternative modes and routes of transport' are viewed as inappropriate forms of redundancy from a SOSCRes perspective. Along with the financial costs involved, the holding of surplus stock is also viewed as an inappropriate strategy for SOSCRes due to the perishable nature of the stock involved in alternate food SC provision. Instead, it is believed that SOSCRes depends on redundancy in the form of multi-sourcing, multi-skilled workers, and broad job descriptions (Table 9).

2.6.4.2 Structure

2.6.4.2.1 Configuration

For SOSCRes, configuration has been expanded to include 'Scope'. It is hypothesised that SOSCRes involves a limited geographical scope. This is

attributed to the significant importance placed on location among SEs (Shaw and Carter 2007; Peattie and Morley 2008a), coupled with trust being positively influenced by working with the local community and local accountability (Royce 2007; Seanor and Meaton 2008).

While high node density is believed to be a by-product of a limited geographical scope, it is also argued to be of greater importance to SOSCRes due to the greater reliance on collaboration among SEs. In addition to that discussed above (2.3.6.4.1 Configuration), high node density supports collaboration by fostering trust (Seanor and Meaton 2008). Furthermore, due to the financial constraints SEs operate under, it is imperative that costs are kept to a minimum. With high node density, transportation costs can be reduced (Wicher and Lenort 2012). The need to balance node complexity is also exacerbated in the pursuit of SOSCRes. Again, with a greater reliance on collaboration it is imperative that node complexity is kept to a minimum to facilitate inter-organisational trust, commitment, and cooperation (Chowdhury et al. 2019). However, this should be balanced against increased node complexity through multi-sourcing. This is because multi-sourcing represents an appropriate alternative form of redundancy to the holding of buffer / safety stock, which is deemed inappropriate due to the financial costs involved.

2.6.4.3 Management / Decision Making

2.6.4.3.1 Governance

With SEs' dependence on social capital, a multi-stakeholder governance structure including, but not limited to, staff (Social Enterprise UK 2019), beneficiaries (Shaw and Carter 2007; Spear et al. 2009; Von der Weppen and Cochrane 2012; Social Enterprise UK 2019) and local community members (Shaw and Carter 2007; Social Enterprise UK 2019), is likely to be crucial to SOSCRes. This is because such structures facilitate greater accountability to staff and beneficiaries (Doherty et al. 2014), increasing

credibility among public opinion (Von der Weppen and Cochrane 2012) and subsequently social capital (Spear et al. 2009). These multi-stakeholder governance structures can be represented through management teams / committee boards (Sharir and Lerner 2006; Islam 2007; Royce 2007; Shaw and Carter 2007; Peattie and Morley 2008a; Von der Weppen and Cochrane 2012; Rykaszewski et al. 2013; Cornforth 2014). This facilitates distributed responsibility, thus preventing over-investment in organisational activities by social entrepreneur(s) and subsequent bottlenecks, delays in decision making (Rykaszewski et al. 2013) and institutional and financial uncertainty (Von der Weppen and Cochrane 2012). In line with the SE literature, management teams / committee boards are recommended to consist of no more than 6 members (Social Enterprise UK 2019). This is because small management teams enable collective action and quicker organisation and response (Polyviou et al. 2020). This flat hierarchy further supports SOSCRes by enhancing velocity through enabling quicker responses to environmental changes and swifter decision making (Polyviou et al. 2020). Furthermore, with the involvement of SEs, it is hypothesised that SOSCs, as hybrid systems, can be at risk of mission drift (Spear et al. 2009; Doherty et al. 2014; Ebrahim et al. 2014). The adoption of a multi-stakeholder governance structure, coupled with the presence of employees and volunteers from the local community, mitigates against risks of mission drift (Von der Weppen and Cochrane 2012) by holding management accountable (Spear et al. 2009).

2.6.4.3.2 Human Resource Management

With SEs relying on hiring and training up inexperienced individuals (BRASS 2004; Royce 2007; Von der Weppen and Cochrane 2012), SOSCRes requires increased investment in education and training (Blackhurst et al. 2011) to develop individuals into the multi-skilled workers needed (BRASS 2004; Royce 2007; Von der Weppen and Cochrane 2012). Furthermore, with a dependence on volunteers,

managing a hybrid workforce (Royce 2007; Lyon et al. 2019; Roumpi et al. 2020) represents a crucial part of HRM for SOSCRes. This includes evaluating volunteers' motivations before relying on their services (Molyneaux 2004; Doherty et al. 2014). In doing so, it is believed that SOSCs can reduce staff turnover, a prominent challenge among SEs (Liu and Ko 2012, cited in Doherty et al. 2014). This supports SOSCRes through generating cognitive capital, and subsequently social capital, through long employee tenure (Polyviou et al. 2020). This is coupled with an enhanced skill base through greater accumulated knowledge and experience (Polyviou et al. 2020).

2.6.4.3.3 Planning

Despite lacking among SEs (Royce 2007), planning is viewed as a crucial component of SOSCRes. Financial planning (BRASS 2004; Rykaszewski et al. 2013), through market research (Sharir and Lerner 2006; Islam 2007; Von der Weppen and Cochrane 2012; Rykaszewski et al. 2013) was identified as central to the planning process. When conducting market research, it is important that demand is established through methods other than surveys (Rykaszewski et al. 2013), for example through interviews (Rykaszewski et al. 2013) and / or market testing (Sharir and Lerner 2006; Islam 2007). This enables the identification of a sustainable clientele base, strengthening funding applications (Rykaszewski et al. 2013) and reducing the possibility of nodes being established with insufficient capital (BRASS 2004; Rykaszewski et al. 2013). Furthermore, in identifying a sustainable clientele base, a sustainable revenue stream can be established (Rykaszewski et al. 2013), facilitating the necessary move away from a dependence on grant funding (Sharir and Lerner 2006). With Seanor and Meaton (2008) identifying upscaling as a barrier to collaboration, here, upscaling by nodes within the SC is viewed as detrimental to SOSCRes.

2.6.4.3.4 Risk Management

For alternative food SCs, both cost-reduction and responsiveness are prioritised in equal measure in their pursuit of tackling food poverty. Hence, it is argued here that from a risk management perspective, SOSCRes involves a continuous trade-off between cost-reduction and responsiveness strategies (Saenz et al. 2018). With both cost-reduction and responsiveness prioritised, coupled with a local scope, SOSCRes is believed to depend on strategies including local sourcing and storing inventory close to the target market (Saenz et al. 2018). Furthermore, this study rejects the implementation of safety / buffer stock along the SC as an appropriate risk management strategy (Colicchia et al. 2010) for SOSCRes. This reflects the financial constraints SEs operate under, coupled with the perishable nature of goods in this research's context, which make redundant stock unsuitable for SOSCRes. Instead, SOSCRes relies on reducing the probability and impact of risks through mitigation strategies and contingency plans (Colicchia et al. 2010).

2.6.4.3.5 Culture

In addition to an RMC, SOSCRes can be aided by a culture of distributed responsibility, with staff and volunteers involved in decision-making. This can be achieved through an open-door policy between managers, staff, and volunteers along with constant flows of information between these parties (Spear 2006; Shaw and Carter 2007; Patel and Mehta 2011; Von der Weppen and Cochrane 2012; Rykaszewski et al. 2013; Social Enterprise UK 2019). Such measures can support recruitment as well as retention (Molyneaux 2004; Royce 2007) through increasing loyalty and commitment (Patel and Mehta 2011; Von der Weppen and Cochrane 2012). Furthermore, with an RMC involving the integration of risk management into decision-making at all levels (Christopher and Peck 2004; Adobor 2019; Polyviou et al. 2020), it is believed both cultures are intertwined in the pursuit of SOSCRes. With a multi-stakeholder

governance structure, a greater number of parties may need to be trained in risk management.

2.6.4.4 Collaboration

Unlike SCRes, SOSCRes is argued to depend on collaboration with a wider range of stakeholders. Despite some SEs' being reluctant to collaborate with private organisations (Herlin 2015), the private (and public) sector is believed to contribute to SOSCRes through supporting with the acquisition of a variety of resources (Spear 2006; Peattie and Morley 2008a; Desa 2010; Patel and Mehta 2011), including expertise, contacts, and advice (Seanor and Meaton 2008). In addition to the public and private sector, it is hypothesised that SOSCRes also involves collaboration local communities (GHK 2005; Shaw and Carter 2007; Royce 2007; Patel and Mehta 2011; Granados and Rivera 2018) and NPOs (BRASS 2004; GHK 2005; Peattie and Morley 2008a; Granados and Rivera 2018; White et al. 2022).

2.7 Summary

This chapter outlines the LR carried out as part of this research.

Underpinned by SNT, a narrative LR was conducted of the SCRes and SE literature. This inter-disciplinary LR was conducted sequentially, beginning with a review of SCRes literature. It was established that SCRes consists of 3 distinct capabilities: (1) the ability to resist, (2) the ability to respond, and (3) the ability to recover, with a fourth optional ability that surpasses recovery, (4) the ability to grow (Hohenstein et al. 2015). Four strategies were identified through which a SC can develop these capabilities, and therefore SCRes: (1) collaboration, (2) flexibility, (3) redundancy, and (4) agility. On further examination, these strategies were unpacked and several sub-elements of SCRes were also identified: (1) configuration, (2) trust, (3) social capital, (4) visibility, (5) velocity, (6) risk management, (7) human resource management, (8) culture, (9)

supply chain understanding / knowledge, and (10) information technology, while (11) redundancy was demoted to a sub-element of flexibility. The relationships between these strategies and elements were then outlined in a conceptual framework for SCRes (Figure 11). From here, a review of the SE literature was conducted. This review uncovered 12 key elements of SE: (1) the social entrepreneur, (2) human resource management, (3) volunteers, (4) finance, (5) planning, (6) governance, (7) collaboration, (8) trust, (9) social capital, (10) culture, (11) flexibility, and (12) location, while innovation was dismissed. This uncovered a notable overlap between the two literatures, with collaboration, flexibility, HRM, trust, social capital and culture representing mutual themes of discussion. The main takeaway from this was the different ways in which these themes manifested themselves within the SE literature, compared to that of SCRes literature. For example, SE appear to draw their flexibility from their hybrid identity (Doherty et al. 2014). Taking what was learnt from the SE literature, Figure 7 was adapted to incorporate the SE context, resulting in a conceptual framework for SOSCRes (Figure 11). Having developed this LR-informed framework for SOSCRes, this research sought to empirically test it. The next chapter outlines the methodology used to carry out theory testing and theory building using this conceptual framework.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

Researchers need to provide a clear explanation of their research approach (Crotty 1998; Hyett et al. 2014; Saunders et al. 2019) to ensure their research is taken seriously (Crotty 1998; Saunders et al. 2019) and to prevent findings from being “*undervalued*” (Hyett et al. 2014, p. 9). To do this, this chapter will outline the research philosophy underpinning this study, the subsequent methodology adopted, and the methods used. This begins with an overview of the various ontological and epistemological positions available to a researcher, following which rationale for adopting pragmatism is provided. From here, an action research methodology is explained and justified. This action research approach is then outlined using Stuart et al.’s (2002) five-stage approach to case study design: (1) research question and theoretical aim, (2) instrument development and case selection, (3) data collection, (4) data analysis, and (5) dissemination.

3.2 Research Philosophy

Saunders et al. (2019, p. 130) define research philosophy as “*a system of beliefs and assumptions about the development of knowledge*”. These assumptions and beliefs shape the way we approach research. This includes the framing of the research questions, the methodology adopted, the data collection and analysis techniques used, and how findings are interpreted (Crotty 1998; Bryman 2016; Saunders et al. 2019). Here, research philosophy is discussed in terms of ontology and epistemology (Saunders et al. 2019).

3.2.1 Ontology

Ontology concerns our “*assumptions about the nature of reality*” (Saunders et al. 2019, p. 133). These assumptions are often framed as occupying one of two positions, (1) objectivism or (2) subjectivism (Bryman 2016; Saunder et al. 2019). The position we adopt impacts the way in which we conduct research (Bryman 2016; Saunders et al. 2019). Objectivism represents the belief that social and physical entities exist detached from social actors (Bryman 2016; Saunders et al. 2019). Therefore, such phenomena are studied the same way one would study nature, looking to make generalisable observations about a single reality (Saunders et al. 2019). Contrary to objectivism, subjectivism assumes that social phenomena are a consequence of the views and actions of social actors (Bryman 2016; Saunders et al. 2019). With interactions between social actors being continuous, social phenomena are subject to constant revision (Saunders et al. 2019). Unlike objectivists, subjectivists acknowledge the existence of different social realities among social actors (Saunders et al. 2019).

This study adopts a subjective ontological position, viewing SOSCRes as a consequence of the views and actions of social actors. This is partly attributed to the role of collaboration, and consequently trust, in both SCRes (Sawyerr and Harrison 2020) and social entrepreneurship (Royce 2007; Seanor and Meaton 2008). Furthermore, by subscribing to an adaptive resilience perspective, which is rooted in constructivism (King 2008), this study perceives the business environment as ever-changing, with resilience measured and developed through continuous learning and adaption to disruptions (King 2008; Adobor and McMullen 2018; Hendry et al. 2019). Consequently, in line with a subjective ontological position, social interactions are viewed as a continual process with SOSCRes in a “*constant state of flux and revision*” (Saunders et al. 2019, p. 137). The continual nature of this study is re-enforced by the ‘wicked’ nature of the

food poverty problem, whereby we can never arrive at a complete solution, with the problem continuously evolving (Wang et al. 2018). Moreover, given that SEs typically face resource disparities compared to their commercial counterparts (Doherty et al. 2014), along with unique challenges related to their unconventional nature as 'hybrid organisations' (Pache and Santos 2013; Pullman et al. 2018; White et al. 2022), there is a need to account for different social realities among different actors.

3.2.2 Epistemology

Epistemology concerns our assumptions about what can be considered acceptable knowledge within a discipline (Bryman 2016; Saunders et al 2019). Due to the interdisciplinary nature of business and management, several types of knowledge can be considered acceptable, including text, numerical and visual data, as well as both facts and opinions (Saunders et al. 2019). Consequently, several different epistemologies have been adopted throughout business and management research. Among these, notable epistemologies include: positivism, interpretivism and pragmatism (Saunders et al. 2019). Each of these philosophies are discussed below.

3.2.2.1 Positivism

Occasionally referred to as 'scientific method' (Mackenzie and Knipe 2006), positivism adopts the philosophical stance of natural science (Bryman 2016; Saunders et al. 2019). This involves "*working with an observable social reality to produce law-like generalisations*" (Saunders et al. 2019, p. 144). Thus, it is common for positivists to adopt a highly structured methodological approach so to enable replication (Saunders et al. 2019). For positivism, only phenomena which are observable and measurable yield acceptable knowledge (Saunders et al. 2019). There is an emphasis on observations that can be quantified, thus allowing for statistical analysis (Saunders et al. 2019). Hence, positivism commonly adopts a quantitative approach to data collection and analysis (Mackenzie

and Knipe 2006). Furthermore, under positivism, research should be undertaken in a 'value free' way (Bryman 2016; Saunders et al. 2019). This involves the researcher being detached from the research to avoid influencing findings (Saunders et al. 2019).

3.2.2.2 Interpretivism

Developed in critique of positivism (Saunders et al. 2019), interpretivism contrasts from positivism (Bryman 2016) in arguing that "*human beings and their social worlds cannot be studied in the same way as physical phenomena*" (Saunders et al. 2019, p. 148-149). Interpretivism argues that human beings differ from physical phenomena in that they generate and prescribe meanings (Saunders et al. 2019). It is these meanings that are of interest to interpretivists. These meanings are believed to differ based on culture, circumstance, and time, thus, creating different realities (Saunders et al. 2019). Consequently, interpretivism is critical of positivism's focus on producing universal generalisations, believing that "*rich insights into humanity are lost if such complexity is reduced entirely to a series of law-like generalisations*" (Saunders et al. 2019, p. 149). Interpretivists capture this complexity through studying that which is meaningful to participants, thus, creating "*new, richer understandings and interpretations of social worlds and contexts*" (Saunders et al. 2019, p. 149). This can be done through studying participant's memories and own interpretations of experiences, as well as cultural artefacts like texts and images, and observing social interactions (Saunders et al. 2019). Bryman (2012, p. 31) argue that interpretivism "*is not simply laying bare how members of a social group interpret the world around them*". Instead, interpretivist research involves two levels of interpretation: (1) the participant's own interpretations, and (2) the researcher's interpretation of participant's interpretations (Bryman 2012; 2016). Unlike positivists, who adopt a 'value free' approach to research (Bryman 2016; Saunders et al. 2019), interpretivists acknowledge how their own experiences influence the research (Saunders et al. 2019). Consequently, a challenge

for interpretivists can be understanding social reality from the perspective of participants (Saunders et al. 2019).

3.2.2.3 Pragmatism

Built on a rejection of the scientific methodology, pragmatism does not hold a single philosophical position (Mackenzie and Knipe 2006). Instead, pragmatists recognise that the world can be interpreted in many ways, with the existence of multiple realities (Saunders et al. 2019). Pragmatist research begins with a problem, aiming to provide effective solutions, thus informing future practice (Saunders et al. 2019). Consequently, pragmatism is said to be a position orientated towards action (Friedrich 1992). Pragmatist research can vary in how objectivist or subjectivist it is (Saunders et al. 2019). This is because the RQ, or “*research problem*” (Cresswell 2003, p. 11, cited in Mackenzie and Knipe 2006) guides the research strategy and design (Mackenzie and Knipe 2006; Saunders et al. 2019). Methods of data collection and analysis are selected based on their perceived ability to provide the greatest insight into tackling the research problem (Mackenzie and Knipe 2006). Unlike positivism, the values of the researcher are identifiable through their work as they study that which is of importance to them to achieve positive change (Tashakkori and Teddlie 1998).

3.2.3 Adopting Pragmatism

This research is undertaken from a pragmatic philosophical position. Pragmatism was chosen due to its increasing popularity in researching complex and emerging phenomena (Johnson and Onwuegbuzie 2004), such as SOSCRes for the purpose of the “*wicked*” problem of food poverty (Wang et al. 2018, p. 1024). This popularity can be attributed to pragmatism’s focus on “*what works*” when trying to answer RQs (Johnson and Onwuegbuzie 2004, p. 18). This can be attributed to pragmatism’s avoidance of epistemological debates surrounding the nature of reality

and how it should be studied (Tashakkori and Teddlie 1998) which enables pragmatists “to focus on empirical problems and get on with the process of producing scholarship” (Pratt 2016, p. 509). However, through avoidance of the “paradigm wars” (Gage 1989, p. 4) and a tendency for the nature of reality to be discussed in a simplistic way, possibly due to a distancing from scientific methodology (Mackenzie and Knipe 2006), pragmatism has been labelled anti-intellectual (Moore 1905; Godfrey-Smith 2015). However, it can be argued that the absence of a loyalty to a single paradigm (Mackenzie and Knipe 2006) is what makes pragmatism the opposite of anti-intellectual. By requiring researchers to adopt an ontological and epistemological stance based on its perceived ability to solve the problem at hand (Johnson and Onwuegbuzie 2004), pragmatists may need an all-encompassing knowledge of varying paradigms. This is potentially coupled with a requirement to reassess their philosophical position with each study undertaken.

The applicability of pragmatism is further supported by its growing affiliation with a “social justice agenda” (Morgan 2014, p. 1050). This is again in keeping with the underlying issue this study’s RQ looks to address. Furthermore, pragmatism varies from ‘classic’ social constructionism in that it does not try to position all participants’ views and ‘constructed realities’ as equally valid (Kelder et al. 2005). Instead, it privileges certain perspectives (e.g. that of ‘experts’) based on their ability to provide insights into a particular problem or RQ (Kelder et al. 2005). This can explain pragmatism’s increasing use in business and management studies research which is often inter-disciplinary and practitioner-led (Creswell and Creswell 2018; Saunders et al. 2019).

3.3 Methodology – Action Research

This research adopts an Action Research (AR) methodology. Reason and Bradbury (2013, p.4) define AR as:

A participatory process concerned with developing practical knowing in the pursuit of worthwhile human purposes. It seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people, and more generally the flourishing of individual persons and their communities.

The adoption of AR is in line with a pragmatist approach, with pragmatism said to be the inspiration for AR and the combination of theory and practicality (Touboulic and Walker 2016). Having been used in disciplines such as medicine and sociology, AR has often been used to analyse some form of social issue (Erro-Garces and Alfaro-Tanco 2020). AR has since been used in a range of subject areas including health, education, engineering, and business (Lau 1997). The application of AR in business and management research has been traced back to the work of Lewin (1944), cited in Shani and Coghlan (2021), who studied organisational change as an action researcher, albeit without referencing AR. Across the 60s, 70s, and 80s, AR developed a rich tradition in organisational development research (Shani and Coghlan 2021). Shani and Coghlan (2021, p. 521) attribute this to "*the view of organizations as systems and the development of socio-technical systems theory of organizations*", which represents a cornerstone of the organisational development tradition. Since then, AR has found use in the field of SCM (Touboulic and Walker 2016; Erro-Garces and Alfaro-Tanco 2020), supporting its application here. For example, Andaloussi (2024) used an AR approach to investigate how warehouse outsourcing can enhance agility, a key strategy in developing SCRes ('2.4.4.3 Agility'), during a crisis. The adoption of an AR research approach here is further supported by its application in SE studies. For example, Costa and Andreaus (2021) adopted an AR approach in their exploration of accountability and performance measurement in a SE setting. Furthermore, this study is not

the first to apply AR in both a SE and SC setting simultaneously, with Sabri et al. (2019) exploring the potential of AR in a humanitarian SC setting.

An AR approach was adopted here due to its suitability to the research context. AR is appropriate for RQs relating to:

Describing an unfolding series of actions over time in a given group, community or organisation; understanding as a member of a group how and why their action can change or improve the working of some aspects of a system; and understanding the process of change or improvement in order to learn from it (Coughlan and Brannick 2001, cited in Coughlan and Coughlan 2002, p. 227).

This is appropriate given the evolving nature of SCRes, coupled with AR's ability to address complex, real-world problems (Avison et al. 1999) such as food poverty. Furthermore, AR is believed to be compatible with SNT as it enables understanding of inter-organisational relationships (Touboulic and Walker 2016). For example, AR has been used to study collaboration, as well as its elements, including relational capital and governance (Benstead et al. 2018), all of which represent key themes within the LR. Finally, AR is viewed as suitable for theory testing and theory building (Touboulic and Walker 2016), which is crucial given that this study aims to apply a well-established concept (SCRes) in a new context (SE).

Throughout the literature there is minimal guidance on how to 'do' AR (Avison et al. 1999; Eden and Ackerman 2018). This has been attributed to the various forms AR can take (Somekh 1995; 2005; Avison et al. 1999). For example, Avison et al. (1999, p. 95-96) distinguishes between four types of AR:

- *Action research focusing on change and reflection;*

- *Action science trying to resolve conflicts between espoused and applied theories;*
- *Participatory action research emphasizing participant collaboration; and*
- *Action learning for programmed instruction and experiential learning.*

Instead, Somekh (1995) argues that AR is learnt through doing, opposed to following an established set of steps (Somekh 1995). However, several common characteristics of AR can be found throughout the literature.

Firstly, AR begins with a problem (Eden and Ackerman 2018). Unlike positivist research, AR is not value-free (Somekh 2005; Touboullic and Walker 2016). Instead, those applying it “*aim to act morally and promote social justice through research that is politically informed and personally engaged*” (Somekh 2005). Therefore, this problem becomes the driving force behind the research for the researcher (Eden and Ackerman 2018). Lau (1997, p. 47) categorises the nature of the problems tackled by AR as either:

1. *“Improving the development of organizations and communities through collaborative actions and reflections”,*
2. *“Overcoming resistance to change by reconciling between espoused and in-use theories held by participants” or*
3. *“Training users to enhance the level of their information and systems knowledge”.*

The most common of these problems tackled is the first. Consequently, AR comprises the dual objectives of solving a problem and contributing to knowledge (Coughlan and Coughlan 2002), thus, closing the gap between research / theory and practice (Somekh 1995; Lau 1997).

Secondly, AR is a collaborative effort between the researcher and practitioners (Coughlan and Coughlan 2002; Somekh 2005; Baum et al. 2006; Erro-Garces and Alfaro-Tanco 2020), whereby the practitioners are “*co-researchers*” (Coughlan and Coughlan 2002, p. 225). In business and management studies the practitioner often represents an organisation (Erro-Garces and Alfaro-Tanco 2020). This contrasts from a traditional approach to research where practitioners / organisations are the objects of study (Coughlan and Coughlan 2002). Usually, the research problem is also of concern to practitioners (Somekh 1995), which represents the driving force behind the research, and their willingness to engage with it, for practitioners (Eden and Ackerman 2018). This ensures its relevance (Eden and Ackerman 2018) and with the practitioners acting as co-researchers, the knowledge generated can be validated instantly (Somekh 2005), thus increasing the rigorousness of findings (Erro-Garces and Alfaro-Tanco 2020). This illustrates how AR can “*meet the double hurdle of rigour and relevance*” (Eden and Ackerman 2018, p. 1146).

Thirdly, AR is an iterative process (Lau 1997; Avison et al. 1999; Coughlan and Coughlan 2002; Baum et al. 2006; Sein et al. 2011; Erro-Garces and Alfaro-Tanco 2020), involving cyclic steps of problem identification, action, and evaluation (Somekh 1995; Lau 1997; Avison et al. 1999; Coughlan and Coughlan 2002). Coughlan and Coughlan (2002, p. 229) state that these steps “*can be anticipated but cannot be designed or planned in detail in advance*”. Thus, they should be viewed holistically, as opposed to separately (Somekh 1995; 2005).

AR allows for the use of a variety of data collection methods (Lau 1997; Coughlan and Coughlan 2002; Benstead et al. 2018; Eden and Ackerman 2018; Erro-Garces and Alfaro-Tanco 2020), both quantitative and qualitative (Coughlan and Coughlan 2002; Erro-Garces and Alfaro-Tanco 2020) (Table 16).

Table 16: Methods of data collection in AR

Methods	Cited By
Participation in day-to-day activities	Coughlan and Coughlan (2002); Benstead et al. (2018)
Observations	Lau (1997); Coughlan and Coughlan (2002); Benstead et al. (2018)
Interviews	Lau (1997); Coughlan and Coughlan (2002); Benstead et al. (2018); Sabri et al. (2019); Erro-Garces and Alfaro-Tanco (2020); Costa and Andreus (2021)
Surveys / Questionnaires	Lau (1997); Coughlan and Coughlan (2002); Erro-Garces and Alfaro-Tanco (2020)
Meetings	Lau (1997); Benstead et al. (2018); Sabri et al. (2019); Erro-Garces and Alfaro-Tanco (2020); Costa and Andreus (2021)
Focus groups	Lau (1997); Erro-Garces and Alfaro-Tanco (2020); Costa and Andreus (2021)
Site visits	

Data collection differs depending on the context of the study (Coughlan and Coughlan 2002), influenced by the participant's values and culture (Somekh 1995). This reaffirms the variation in AR (Somekh 1995). Data collection can occur both in a planned manner and opportunistically (Eden and Ackerman 2018). The opportunistic nature of data collection can be attributed to the collaborative nature of the research, whereby the time given to research is limited by the practitioners' primary responsibilities (Somekh 1995). One way around this can be to leverage the research process to take actions (Somekh 1995) so that methods of data collection can also represent interventions (Coughlan and Coughlan 2002). While AR

commonly lasts between 1 and 2 years, it can range from anywhere between 3 months and 5 years (Lau 1997).

AR commonly deals in smaller sample sizes (Erro-Garces and Alfaro-Tanco 2020). To do otherwise can be challenging. For example, Touboulic and Walker (2016, p. 335) argue that, when utilising AR in SCM research, "*it may prove difficult to conduct an AR study beyond the scope of a single organization or local SC*". This can be perceived as a weakness of AR as it prevents generalisable findings (Erro-Garces and Alfaro-Tanco 2020). However, AR contrasts with positivist research in that it does not seek to make generalisable claims (Somekh 1995; Coughlan and Coughlan 2002). AR is situational, and so is the knowledge it creates (Somekh 1995; Coughlan and Coughlan 2002), referred to as 'situational understanding' (Elliott 1993, cited in Somekh 1995) or 'practical wisdom' (Elliott 1991, cited in Somekh 1995). Consequently, Somekh (1995) argues that the validity of AR is not dependent on accurate claims of cause and effect.

Finally, AR is commonly presented as a case study (Lau 1997; Avison et al. 1999; Coughlan and Coughlan 2002; Touboulic and Walker 2016; Sabri et al. 2019; Erro-Garces and Alfaro-Tanco 2020; Costa and Andreus 2021; Andaloussi 2024), that is:

an empirical method that investigates a contemporary phenomenon (the "case") in depth and within its real-world context, especially when the boundaries between phenomenon and context may not clearly evident (Yin 2018, p. 15).

Consequently, the same is done here.

3.3.1 Case Study

Along with its popularity in AR, business (Yin 1981a; Bhattacharjee 2012) and SE (Desa 2010) research, the decision to adopt a case study approach was arrived at with the support of Yin's (2018) methodology appropriateness matrix. This matrix calls for three research components to be taken into consideration; (1) the form of RQ, (2) the researcher's control over behavioural events, and (3) the degree of focus on contemporary, as opposed to historical, events. Firstly, for the form of RQ posed, Yin (2018) advocates the use of case studies when investigating 'how' and 'why' questions (Saunders et al. 2009) through enabling the generation of in-depth understanding within a specific context. This is because "*such questions deal with the tracing of operational processes over time, rather than mere frequencies or incidence*" (Yin 2018, p. 10). In tackling the primary RQ '*How can resilience be built into alternative food supply chains that help alleviate the food poverty problem?*' a case study method is therefore appropriate for this study (Yin 2018).

The adoption of a case study approach is further supported by its suitability for studying complex, particularly social (Yin 2018), phenomena (Flyvbjerg 2006; Yin 2009; Bhattacharjee 2012; Yin 2014) such as SCs (Seuring 2008), where solutions to problems are not easily identifiable (Gustafsson 2017). Food poverty represents just such a research context (Wang et al. 2018). Hence, this study answers calls for more empirical research to be conducted utilising case-based approaches (Bhamra et al. 2011; Kamalahmadi and Parast 2016; Sawyerr and Harrison 2020).

Case study research is not without criticism, attributable to a perceived lack of rigor (Seuring 2008; Yin 2018) and generalizability (Flyvbjerg 2006; Bryman 2012; Mariotto et al. 2014; Krusenvik 2016; Yin 2018). To be deemed rigorous, research requires reliability and validity (De Vaus 2001; Yin 2003; Mariotto et al. 2014), that is, "*the extent to which your*

data collection techniques or analysis procedures will yield consistent findings" (Saunders et al. 2009, p. 156), and *"whether the findings are really about what they appear to be about"* (Saunders et al. 2009, p. 157).

Yin (2018) compartmentalizes validity, differentiating between construct, external and internal validity. Construct validity concerns *"identifying correct operational measures for the concepts being studied"* which is said to be especially challenging for case study research (Yin 2018, p. 48). Critics of the case study methodology often point to a researcher's inability to implement appropriate research measures along with a tendency for confirmation bias to occur (Yin 2018). To ensure construct validity, a researcher must; (1) define the research using specific concepts, which can then be related to the primary objectives of the study, and (2) identify research measures that complement this concept(s). Here, research has been defined using the well-established concept of SCRes. This is coupled with case studies being prevalent within SC and SCRes research (Seuring 2008; Bhattacharjee 2012; Leat and Revoredo-Giha 2013; Bradaschia and Pereira 2015; Chowdhury and Quaddus 2016; Scholten et al. 2019; Tukamuhabwa et al. 2017; Ali et al. 2018; Hendry et al. 2019; Polyviou et al. 2020). External validity concerns the extent to which the research's findings are generalizable beyond the immediate study (Saunders et al. 2009; Yin 2018). External validity, or generalizability, is of particular concern for case study research looking into one, or a small number of cases (Saunders et al. 2009). Internal validity relates to a researcher's desire to explain how and why one event led to another (Yin 2018). Concerns about internal validity within case study research reflect the occurrence of inference making. Each time an event cannot be observed directly the researcher will be forced to infer that such an event has occurred because of an earlier occurrence based on interview and/or documentation evidence. Even through AR, SCRes is not an event that can be simply observed.

Therefore, the concern here is whether these inferences are correct. Internal validity is built upon a well-documented LR, as presented above, and a clear design, with particular attention being paid to case selection and data collection (Seuring 2008; Bhattacharjee 2012; Hyett et al. 2014). Thus, creating a transparent research process (Mariotto et al. 2014; Yin 2014). Despite this, case study research commonly provides little reference to, or justification for, its case study design (Yin 1981a; Bhattacharjee 2012; Hyett et al. 2014). Here, a detailed account of the case study design, and justification for which, is provided using Stuart et al.'s (2002) five-stage approach, thus improving internal validity (Seuring 2008; Bhattacharjee 2012; Hyett et al. 2014). Further clarification of how the rigorousness and generalisability of this study was improved is also provided in relation to these stages where applicable. A summary of how this study has met 'trustworthiness criteria' is provided in Table 17.

Table 17: Summary of trustworthiness

Trustworthiness Criteria	Explanation	How criteria were met in this study
Construct Validity	The extent to which the research instruments used are deemed appropriate.	1. The research was defined using well-established concepts of SCRes. 2. The research used a case study approach, which is prevalent in SC and SCRes studies.
Internal Validity	The extent to which the research establishes a cause-and-effect relationships.	1. The presence of a well-documented LR. 2. A detailed account of the research design using Stuart et al.'s (2002) five-stage approach.

External Validity / Transferability / Generalisability	The extent to which the research's findings are generalizable beyond the immediate study.	1. The unit of analysis (case network) consists of a variety of organisations, positions. 2. Generalisable through 'falsification' (Flyvbjerg 2006). 3. Analytic generalisability through confirmation / modification of a theoretical concept (conceptual framework for SOSCRes).
Credibility	The extent to which the research's claims are accurate and credible.	1. Triangulation of findings through a multi-method approach (Saunders et al. 2009). 2. Interviews were transcribed and given to interviewees for validation prior to data analysis (Guba and Lincoln 1994)
Dependability / Reliability	The extent to which the research's findings are repeatable.	1. By undertaking a review of the SCRes and SE literature, a research protocol was developed, guiding the process (Yin 1981a; Bhattacharjee 2012)

		2. Research themes identified were tested with a supervisory team.
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3.3.1.1 Stage 1: Research Question and Theoretical Aim

As stated above, the RQ posed here is:

How can resilience be built into alternative food supply chains that help alleviate the food poverty problem?

This research is explanatory in nature, focusing on providing an explanation for a phenomenon, that is, resilience within SOSCs, utilising cause-effect relationships (Yin 2003; Saunders et al. 2009). By conducting a review of SCRes and SE literature, a conceptual framework for SOSCRes was developed. Therefore, the theoretical aim of this research is theory testing and building (Stuart et al. 2002), and consequently can be defined as an instrumental case study, utilised in theory refinement (Stake 1995, cited in Hyett et al. 2014).

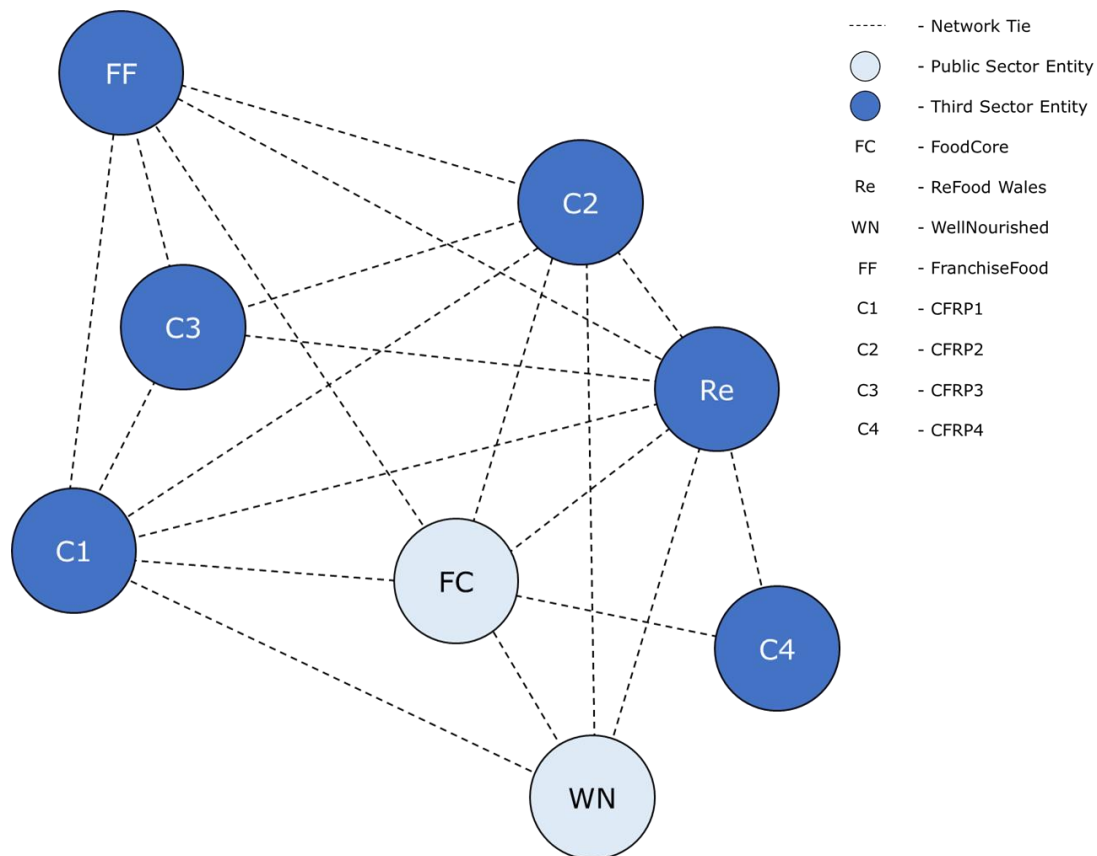
Stake (1978, p. 7) states that case studies have “*an epistemological advantage over other enquiry methods*”. This is supported by Yin (2018) who states that case studies can embrace varying epistemologies due to the all-encompassing nature of the method of inquiry. Case study research can be aligned with several philosophical paradigms (Hyett et al. 2014) including positivism for theory testing and interpretivism for theory building (Bhattacharjee 2012). This research involves elements of both theory testing and theory building due to being undertaken from a pragmatist standpoint. Case studies are highly compatible with the pragmatist paradigm due to their versatility because of their compatibility with quantitative, qualitative, or even mixed methods (Yin 1981a; Yin 1981b; De Vaus 2001; Bhattacharjee 2012; Hyett et al. 2014).

3.3.1.2 Stage 2: Instrument Development and Case Selection

Before data collection, it is crucial that a protocol is in place indicating which topics must be studied, thus guiding the process (Yin 1981a; Bhattacharjee 2012) and supporting the reliability of the study (Yin 2018). To do this, a review of SCRes and SE literature was conducted, as presented above. To further strengthen the dependability, or reliability (Guba and Lincoln 1994), of the study, research themes identified through this LR were tested with the supervisory team, thus ensuring consistency (Guba 1981). This served as a basis for the development of a conceptual framework for SOSCRes (Figure 11). This framework helped to identify which areas / topics required thorough investigation (Yin 1981a). A case study was then undertaken to test this framework.

SCRes is described as *"a network phenomenon arising from connectivity and interdependence between firms"*, and as such, SCs, rather than individual firms should be considered the Unit of Analysis (UoA) (Tukamuhabwa et al. 2015, p. 5615). Having taken into consideration the role of networks in SE, this was expanded to include the network operating around a SC. Consequently, the UoA for this study was a social food network involving a social food SC, defined here as a social food supply network. Operating throughout South Wales, United Kingdom, this network (Figure 12) consists of several logical sub-units, namely, a food-focused anchor organisation (FoodCore), a community food retail project (CFRP) franchisor (FranchiseFood (FF)), three franchisee CFRPs (CFRP1; CFRP2; CFRP3), an independent CFRP (CFRP4), a food redistribution charity and primary supplier to each of the CFRPs (ReFood Wales), and a community health and wellbeing organisation (WellNourished). Hence this case study represents an embedded case study (Saunders et al. 2009; Yin 2018). A multi-site case study approach was adopted due to its ability to identify and understand variables, in this case, elements of SOSCRes, as well as the relationships between them (Stuart et al. 2002).

Figure 12: Social food supply network.



Like much of case study research, locality and access played an integral role in selecting the chosen case (Bhattacharjee 2012; Hyett et al. 2014). This UoA was also selected due to its criticality, that is, its ability to facilitate understanding of the conditions necessary for a hypothesis to hold (Yin 2009; Bryman 2012). Furthermore, it was felt it represented a “*most likely*” critical case study, that is, a case study which is ‘most likely’ to either confirm or refute a hypothesis (Flyvbjerg 2006). In this case, it was thought that the case network represented a case in which the conceptual framework for SOSCRes was ‘most likely’ to hold. This was due to its documented success and involvement in securing a bronze ‘Sustainable Food Cities’ award (Flyvbjerg 2006, p. 231). This is supported by the witnessed involvement in the securing of a silver award during the time of research, becoming one of only six cities to achieve such status. In addition to being critical, this network represents what can be defined as an exemplary case that is unusual and of public interest due to

underlying issues that are of national importance (Yin 2018). In this case, that is the growing issue of food poverty.

While it has been argued that case studies are not supposed to be generalizable (Bryman 2012; Mariotto et al. 2014), as the UoA, the network is represented by a variety of organisations, positions, and responsibilities. This ensures the study's transferability (Guba and Lincoln 1994) through applicability "*in other contexts or with other subjects*" (Guba 1981, p. 80). Furthermore, Flyvbjerg (2006) states that case studies are generalizable through 'falsification'. Flyvbjerg (2006, p. 228) argues that:

Falsification is one of the most rigorous tests to which a scientific proposition can be subjected: If just one observation does not fit with the proposition, it is considered not valid generally and must therefore be either revised or rejected.

The benefit of a "*most likely*" case is that it is suited to falsification (Flyvbjerg 2006, p. 231). Alternatively, with the presence of SNT as this study's theoretical lens, the basis is present for what Yin (2018, p. 42) defines as "*analytic generalization*". In contrast to statistical generalisation, whereby generalisability is inferred through a sample set in numerical form, analytic generalisation is grounded in advancing a theoretical concept through either confirmation, rejection and / or modification (Yin 2018). In this case, the theoretical concept being the framework for SOSCRes. If confirmation / modification takes place, analytic generalisation would occur through the presence of new concepts arising from the case study (Yin 2018).

3.3.1.3 Stage 3: Data Collection

An egocentric network approach to data collection was adopted, whereby the focus was on identifying and understanding a considerable number of

ties relating to a small number of focal nodes (Borgatti and Ofem 2011). Here, the focal nodes were the four CFRPs within the case network (Figure 12). This approach is in line with SNT studies generally (Borgatti and Li 2009).

There exist two contrasting data collection methods: (1) Quantitative and (2) Qualitative. Quantitative methods are those that use and / or generate numerical data, such as questionnaires. Alternatively, qualitative methods are those that use and / or generate non-numerical data, such as interviews (Saunders et al. 2009). Here, a qualitative multi-method approach was adopted, consisting of observations, interviews, focus groups and documentation (Table 18), each method commonly utilised in AR (Table 16).

Table 18: Summary of data collection activities

Data Collection Activity	Description
Observations	Participant-observation was carried out through attending the meetings of three food-focused working groups: (1) 'Food Poverty Working Group' (FPWG), (2) 'COVID-19 Task Force' (CTF) and (3) 'Community Food Retail Network' (CFRN). Meetings occurred monthly and lasted on average 60 minutes. These meetings were used to share updates and provide feedback on food activities taking place across the city as well as to lobby for better access to fresh and affordable food. Data produced from these meetings included minutes and observation notes that were generated with the agreement of participants. In total, 20 meetings were attended between July 2019 and March 2022.
Interviews	Eight semi-structured interviews were conducted with key stakeholders involved in social food provision. These were

	a food-focused anchor organisation (FoodCore), a CFRP franchisor (FF), three franchisee CFRPs (CFRP1; CFRP2; CFRP3), an independent CFRP (CFRP4), a food redistribution charity and supplier to each of the CFRPs (ReFood Wales), and a community health and wellbeing organisation (WellNourished). Stakeholders were identified through involvement in the FPWG. Interviews were approached with a list of LR-informed questions (Appendix 4). The purpose of these interviews was to explore the inter-organisational relationships which contributed to elements of SOSCRes (Figure 11). This included both the relationships between stakeholders within the case network and with other stakeholders within their own networks. Each interview was voice recorded and lasted, on average, 70 minutes.
Focus Groups	Five focus groups were held in total, each lasting 60-90 minutes. The first three focus groups were led by FoodCore and involved members of the FPWG. The purpose of these sessions was to explore community food retail provision, the CFRP models available, the support services available and opportunities for scaling up the sector. These 3 focus groups were attended by more than 20 participants in total, with the attendance for each focus group being 20 (#1), 14 (#2), and 10 (#3). Focus groups #4 and #5 were led by Me and involved members of the CFRN. These focus groups represented co-design workshops, with the purpose of developing an agreed upon framework for building a CFRP. This was done through compiling the experiences of those working in and with the CFRPs to identify and agree upon a set of key building blocks for setting up a successful CFRPs. These 2 focus groups were attended by 14 participants in total,

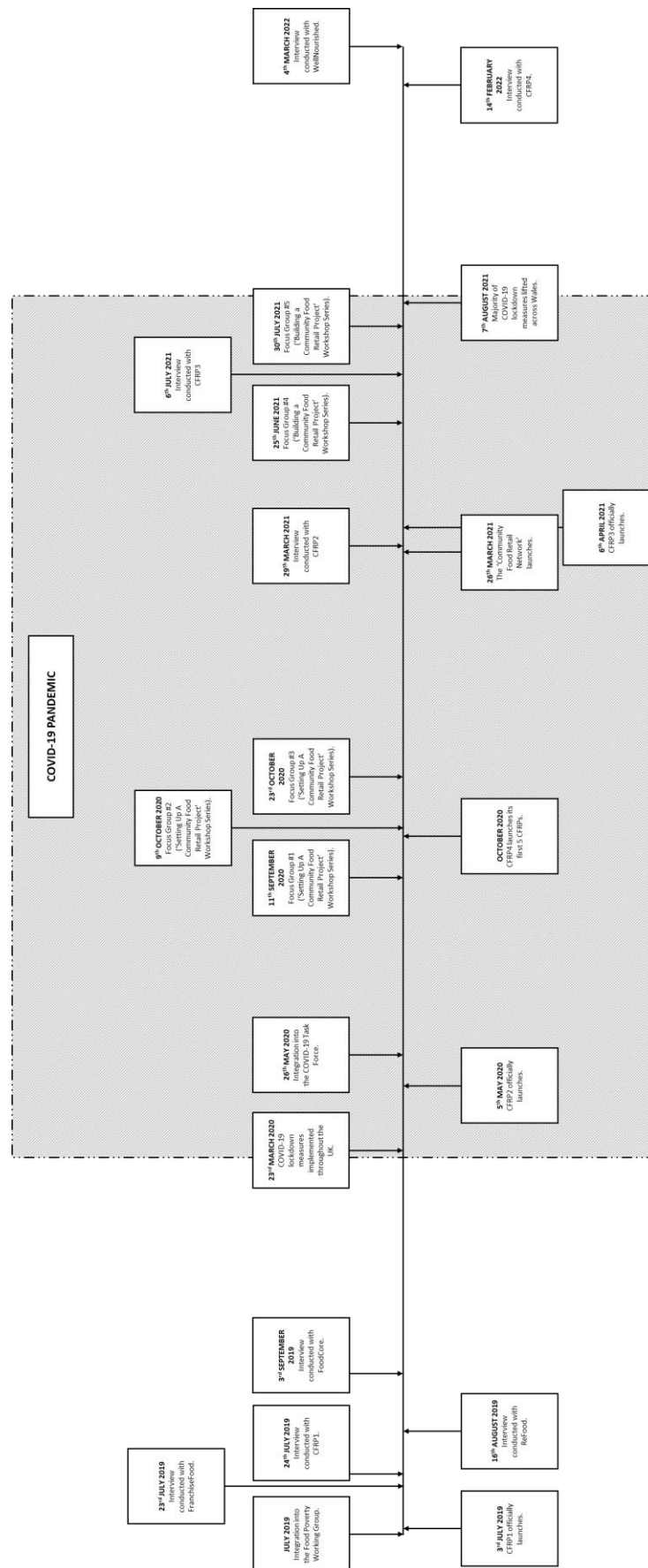
	with the attendance for each focus group being 11 (#4) and 10 (#5).
Documentation	Documentary data was collected primarily to corroborate the findings of the other data collection methods. This included emails, WhatsApp conversations, minutes of meetings, franchise documents, reports, and website data.

A multi-method approach was undertaken as it allows for more complicated RQs, such as the one asked in this study, to be addressed through enabling the collection of a richer array of data compared to that yielded from a single method (Yin 2018). This reflects calls for more multi-method approaches to SCRes research (Kamalahmadi and Parast 2016; Ali et al. 2017a; Ali et al. 2018; Ali and Golgeci 2019) with Ali et al. (2017a) arguing that, given the complex nature of SCRes, *“a mix of empirical and analytical research methods is needed to develop the theory and evaluate its implementation”*. This is because a multi-method approach enables greater understanding of a specific problem via triangulation of findings, that is, *“the use of different data collection techniques within one study in order to ensure that the data are telling you what you think they are telling you”* (Saunders et al. 2009, p. 146). Along with addressing the weaknesses associated with using a single method (Ali et al. 2018; Ali and Golgeci 2019), this data triangulation increases research validity.

A longitudinal approach to data collection was adopted, taking place over 33 months (Figure 13). This was to understand the phenomenon over a period, rather than creating a ‘snapshot’ in time (Saunders et al. 2009), and also to cope with the adaptive and evolving nature of SCRes, since, as Tukamuhabwa et al. (2015, p. 5615) note: *“the behaviour patterns resulting from continuous adaptation and counter-adaptation cannot easily be understood at a single point in time; hence, longitudinal*

research is required". Consequently, this research satisfies calls for the greater presence of longitudinal case studies within SCRes research (Tukamuhabwa et al. 2015; Kochan and Nowicki 2018).

Figure 13: Data collection timeline.



3.3.1.3.1 Observations

Observations took the form of participant-observation. Leveraging my position as an academic researcher and representative of an enabling organisation, i.e. Cardiff University, I was able to gain access to industry groups primarily working around community food and food poverty. These were the FPWG, CTF, and CFRN. With the consent of participants, participant-observation was undertaken to observe and collect data surrounding the interactions between members of the network in relation to the development of resilience, yielding evidence that would otherwise be unattainable.

Participant-observation primarily occurred through the monthly meetings of these groups. Meetings represent an approach to data collection commonly adopted in AR (Lau 1997; Benstead et al. 2018; Erro-Garces and Alfaro-Tanco 2020), supporting its application here. Involvement in group meetings also facilitated further observation through site visits, again, an approach to data collection commonly found in AR (Lau 1997; Erro-Garces and Alfaro-Tanco 2020). This was due to the groups' approach to meetings, whereby groups' members were invited to host. Several more site visits were conducted throughout the course of the research beyond those facilitated by group meetings. This included a visit to ReFood Wales' distribution centre, and to 3 of the 4 CFRPs (CFRP1 – 3), to witness them in operation. Further observation of group dynamics occurred through integration into the communication channels of these groups beyond the monthly meetings. This included email trails and a WhatsApp group. This culminated in the observation of the interaction between network members over the course of 3 years, providing data that was utilised both as primary data and to corroborate data collected from other sources, i.e. interviews.

A major challenge concerned with undertaking participant-observation is that of bias. Yin (2018) talks of there being times in which the researcher

is unable to act as an external observer. Instead, assuming the position of an advisor, something Yin (2018, p. 169) believes to be "*contrary to the interests of good social science practice*". This would be the case here. My position as an academic researcher in business meant that I would be asked to contribute my thoughts to the groups on a variety of topics. This can often lead to a second challenge in which the participant-observer becomes an active group supporter, as was also the case here. As my involvement in the groups grew, so did my responsibilities, going from being asked to contribute my thoughts at times on specific topics, to being expected to provide updates on the progress of my research at each meeting, and then to chairing meetings. Here, assuming the position of an advisor is not viewed as a problem, rather it is in line with a pragmatist perspective and a focus on "*what works*" (Johnson and Onwuegbuzie 2004, p. 18), coupled with an AR approach, whereby the group members were "*co-researchers*" (Coughlan and Coughlan 2002, p. 225). Thirdly, Yin (2018) explains how a researcher's ability to take notes may be inhibited by such increased involvement compared to that of a simple observer. Here, this was combated by having a dedicated minute taker in attendance at each meeting which were later disseminated to group members. Minutes of meetings are commonly used in AR (Lau 1997; Benstead et al. 2018). However, this was done whilst being mindful that the minute taker would record what they perceive as important in the meeting, such as action points, which may not reflect my interests as a researcher, such as observing how people interact with one another. Finally, Yin (2018) explains that, if a group is dispersed geographically, participant-observation may be inhibited. Here, geographical proximity was present between network members, except for FF. Furthermore, in what was one of the few positives of COVID-19, due to lockdown restrictions, coupled with the support of meeting software, meetings were able to become 'virtual' with a consistent and reliable turn out. Following the alleviation of lockdown restrictions and the return of face-to-face meetings, all meetings were held in accessible locations because of the

south-Wales specific nature of the group's work and the location of its members.

3.3.1.3.2 Interviews

Interviews represent a method commonly used throughout case study research (Yin 2018), and SC case study research more specifically (Seuring 2008; Bhattacharjee 2012). Interviews were conducted with the representatives of key stakeholders involved in social food provision. The purpose of which was to explore the inter-organisational relationships which contributed to elements of SOSCRes (Figure 11). This included both the relationships between stakeholders within the case network and with other stakeholders within their own networks. In total, 8 stakeholders were identified and interviewed, these were: FoodCore's Sustainable Food Places Coordinator (SFPC), FF's director, 4 social entrepreneurs (SEnt1; SEnt2; SEnt3; SEnt4) (each number corresponds to their respective CFRP, i.e. SEnt1 = CFRP1), ReFood Wales' Manager and WellNourished Clinical Lead. These stakeholders were identified through their involvement in the FPWG. Each of the four CFRPs interviewed were selected due to their ability to provide diverse accounts of the experiences of CFRPs within the case network. This was because: (1) CFRP1 was the first CFRP to be established within the network, (2) CFRP2, as the second CFRP within the network, benefitted directly from the support of CFRP1, (3) CFRP3, while a franchisee like CFRP1 and CFRP2, did not have the same level of involvement in the FPWG as CFRP1 and CFRP2, and (4) unlike CFRP1-3, CFRP4 is not a franchisee of FF. Together, they provided a comprehensive account of the CFRPs within the network, thus enabling more critical cross-comparative analysis.

Consent was acquired from all participants prior to being interviewed. All interviewees were reassured that any information provided would be kept anonymised and confidential in line with the data protection act and

institutional ethical research requirements. This was coupled with information being used for the agreed intended purposes only.

Interviews were conducted using a semi-structured approach. A semi-structured approach was utilised so to understand the 'what' and 'how', whilst also placing greater emphasis on the 'why' (Saunders et al. 2009). This, Saunders et al. (2009) argues, makes semi-structured interviewing suitable for explanatory studies such as this (Yin 2018). This enabled causal relationships to be inferred between variables, which, in the context of this research, is that presented in Figure 11 and the characteristics of the case network. With the adoption of a semi-structured approach, it is ensured that the nature of the interviewing process is consistent with the RQ (Saunders et al. 2009). Interviews ranged from 30 to 120 minutes in length, lasting 70 minutes on average. Interviews lasting around 2 hours can be defined as prolonged case study interviews (Yin 2018). That is, interviews that may last 2 or more hours, occurring in either a single setting, or multiple across a period. When conducting prolonged case study interviews, one should be cautious about becoming overly dependent on the key informant. These concerns were mitigated by using other sources of data to corroborate that provided by the interviewees, as advised by Yin (2018). This was coupled with corroboration across interviews where possible.

Interviews were approached using a list of LR-informed questions surrounding a selection of topics (Appendix 4). Examples of how the literature informed the line of questioning have been provided below (Table 19).

Table 19: Literature-informed questioning examples

Interview Questions	Example Prompt(s)	LR-informed Reasoning	Corresponding Literature Theme
1. Please could you start off by telling me about yourself?	What links do you have to the local area outside of <i>*Insert case enterprise name*</i>?	- SEs are typically situated in locations familiar to the social entrepreneur (Shaw and Carter 2007). - Social entrepreneurs risk damage to reputation and personal relationships, and loss of credibility (Shaw and Carter 2007).	Social Entrepreneur
2. Could you tell me about <i>*Insert case enterprise name*</i> .	What sources of income do you use?	- SEs utilise various sources of finance (Lyon et al. 2019; Social Enterprise UK 2019). - Grant funding application success is becoming increasingly dependent on performance measurement (BRASS 2004; Nicholls and Cho 2006; Royce 2007; Peattie and Morley 2008a; Desa 2010; Rykaszewski et al. 2013). - There is no universal approach to measuring social impact (Rykaszewski et al. 2013).	Finance

3. What planning was undertaken prior to establishing <i>*Insert case enterprise name*</i> ?	• How was a premises secured?	• Funding bodies are reluctant to support SEs to fund the acquisition of premises (BRASS 2004; Sharir and Lerner 2006).	Finance
		• SEs can overcome challenges in premises acquisition through clustering (Pinch and Sunley 2016).	Social Capital
4. Who is involved in the running of <i>*Insert case enterprise name*</i> ?	• Are consumers involved in the running of <i>*Insert case enterprise name*</i> ?	• SEs tend to adopt multi-stakeholder governance structures (Spear et al. 2009).	Governance
	• Are volunteers involved in the running of <i>*Insert case enterprise name*</i> ?	• Multi-stakeholder governance structures can increase social capital (Spear et al. 2009).	
	• Is the local community involved in the running of <i>*Insert case enterprise name*</i> ?	• Such structures result in the need to manage the needs and demands of a variety of stakeholders (Spear et al. 2009; Doherty et al. 2014; Roumpi et al. 2020).	
5. What risks and challenges do <i>*Insert case enterprise name*</i> face?	• Has it been a challenging finding workers, both paid and voluntary, with the required skills and values?	• Has it been a challenging finding workers, both paid and voluntary, with the required skills and values?	HRM
		• Financial constraints mean SEs are unable to pay the market rate for employees	

		(Doherty et al. 2014).	
6. Who does *Insert case enterprise name* collaborate with?	Do you collaborate with private organisations?	- There can be a reluctance among SEs to collaborate with private organisations (Herlin 2015). - For SEs, collaboration with private organisations can lead to resources (Spear 2006; Peattie and Morley 2008a; Desa 2010; Patel and Mehta 2011) and legitimacy (Patel and Mehta 2011; Granados and Rosli 2020).	Collaboration
7. What are *Insert case enterprise name* plans moving forward?	Do you have plans to upscale?	46% of SEs failed to conduct any succession planning (Royce 2007). - SEs may be averse to growth due to fear of losing control and / or identity (Peattie and Morley 2008a).	Planning

The topics of discussion followed those presented in the conceptual framework for SOSCRes (Figure 11), reflecting the data collection protocol, as discussed above (Yin 1981a; Bhattacharjee 2012). In-keeping with a SNT approach, questioning was tailored in such a way so to conduct multi-level analysis (Borgatti and Ofem 2011), namely, at the individual, organisational and network level. Thus, providing

comprehensive insight. All interviews began with general questioning to establish the background and position of the interviewee within the network. This was done to ease the participants into the interview process whilst also giving weight to the importance of individuals such as the social entrepreneurs, who represented key components of their respective SEs. For example, this line of questioning was used to explore what links each of the social entrepreneurs had to the communities surrounding their respective CFRPs (Table 19). This was done as a result of a tendency among social entrepreneurs to set up SEs in locations they are familiar with, thus risking damaging personal relationships and credibility (Shaw and Carter 2007).

From here, discussion moved to the organisational level, with interviewees asked to talk about their organisations. This included both general questioning (e.g. 'Could you tell me more about *insert case enterprise name*') and targeted questioning (e.g. 'Who is involved in the running of *insert case enterprise name*?') (Table 19). The former was used, again, as a way to ease interviewees into a discussion, this time to transition them from talking about themselves to focusing more on their organisation. During this line of questioning interviewees were prompted about the sources of income their organisation uses. This was due to the various sources of finance leveraged by SEs (Social Enterprise UK 2019), including grant funding. Success of grant funding applications has become increasingly dependent on performance measurement (BRASS 2004; Nicholls and Cho 2006; Royce 2007; Peattie and Morley 2008a; Desa 2010; Rykaszewski et al. 2013), a difficult task in the case of social impact (Rykaszewski et al. 2013; Samuel et al. 2018; Gupta et al. 2020; White et al. 2022). Consequently, this topic was explored across all interviews in order to identify if grant funding application expertise resided within the network, and if so, where. Once organisational dialogue was established, more specific questioning about the organisation took place. This included exploring who was involved in the running of the

organisation. This line of questioning was explored due to a tendency among SEs to adopt multi-stakeholder governance structures (Spear et al. 2009). This was of interest given that multi-stakeholder governance structures can increase social capital, a prominent element in both the SE and SCRes literature (Table 14).

Having discussed the organisation at length, questioning moved up to the network level, with interviewees asked who they as an organisation collaborated with. For example, interviewees were asked whether they collaborated with private sector organisations. This was due to a reluctance among some SEs to collaborate with private organisations (Herlin 2015), coupled with private sector collaboration capable of leading to resource acquisition and increased legitimacy (Patel and Mehta 2011; Granados and Rosli 2020).

The order of questioning varied across interviews to accommodate the flow of conversation. This was because, in practice, the interviewees were more inclined to 'tell their story', rather than answer specific questions. This provides an explanation for the considerable range in the length of interviews (30-120mins), with only certain interviewees (particularly the social entrepreneurs) engaging in this 'storytelling'. I was able to accommodate this storytelling with the support of a semi-structured approach, coupled with an interview protocol checklist (Appendix 5). This elaborated version of the standard interview protocol was used to track the topics discussed in real-time as the stories unfolded. This meant that the interviewees could tell their story in full, free from disruption, before revisiting any topics left 'unchecked'. This time was also used to explore novel insights that may prove fruitful to the research objectives.

A number of these topics related to more than one stakeholder and were therefore discussed with each as a source of triangulation, thus increasing the internal validity of the study as well as minimising interpretation bias

(Saunders et al. 2009; Bhattacharjee 2012; Hyett et al. 2014; Mariotto et al. 2014). Alternatively, there were lines of questioning that were omitted due to a lack of applicability based on the stakeholder's role within the case network (Saunders et al. 2009).

Where possible, interviews were conducted in person, when not possible, interviews were carried out via Zoom. Although face-to-face interviews have long been considered the 'gold standard' in social science research, recent experience has suggested that online interviews can also be effective and can provide advantages in overcoming barriers linked to accessibility and availability of busy people (Johnson et al. 2021). Given the open-ended nature of questioning that accompanies a semi-structured approach, an audio device was used to record all interviews, with the participant's consent, to ensure accuracy (Saunders et al. 2009). On conclusion, interviews were transcribed verbatim. Interviewees were asked to review their interview transcripts for evidence validation, providing feedback on any misunderstandings or omissions that may have taken place. This is in line with Guba's (1981, p. 79) "*truth value*", thus, strengthening credibility, or internal validity (Guba and Lincoln 1994), as well as ensuring the accuracy of findings (Yin 1981a).

3.3.1.3.3 Focus Groups

In total, 5 focus groups were conducted with members of the case network to test and extend the findings. The first three focus groups were led by FoodCore and involved members of the FPWG. The purpose of these focus groups was to explore community food retail provision and the setting up of a CFRP, with the objective of scaling up the sector. The first focus group, titled 'Introduction to Community Food Retail Projects', explored the concept of a CFRP and the different models available. This was followed by a closer look at FF's CFRP franchise model, coupled with an in-depth look at CFRP1 and CFRP2. The second focus group, titled 'Practical Considerations for a Community Food Retail Project', explored

the practical aspects of setting up a CFRP, including the equipment needed, volunteer recruitment and training, and marketing and communication activities. This was coupled with a discussion of the different supply options available to CFRPs. This included an in-depth look at ReFood Wales, as well as community growing and donation sourcing. The third and final focus group in this series, titled 'Getting Ready to Go', explored the value adding activities of CFRPs. This included a discussion on the co-designing of CFRPs, including community and membership involvement. This was followed by a look at how CFRPs can support healthy eating choices and develop cooking skills throughout their communities. The 4th and 5th focus group were led by me and involved members of the CFRN. These focus groups represented co-design workshops, designed for the purpose of developing an agreed upon framework for building a CFRP. This was done through compiling the experiences of those working in and with the CFRPs to identify and agree upon a set of key building blocks for setting up a successful CFRPs. To achieve this, members of the CFRN were asked to identify key themes in the establishment of a CFRP. This included what things worked well and what lessons they learnt in relation to these themes, each supported by case examples and testimonials. Each of these focus groups lasted 60-90 minutes, and were attended, on average, by 13 participants.

Focus groups were utilised due to their ability to facilitate the collection of further information through interactive discussion (Goldman 1962, cited in Pettit et al. 2010). Focus groups are said to be particularly effective when investigating complex issues (Morgan 1996, cited in Pettit et al. 2010). This, given the "*wicked*" nature of the food poverty problem (Wang et al. 2018, p. 1024), supports the inclusion of focus groups as a complementary method to this study.

The focus groups were guided by a semi-structured interviewing protocol, allowing for probing to be utilised, when applicable, to explore responses

in greater detail (Pettit et al. 2013). Each focus group was video recorded with the consent of attendees. This eliminated challenges that could have arisen in attributing statements to the correct participants based on audio recording alone, supporting the accuracy of findings. Each focus group began with a brief self-introduction to establish the background and position of each participant for the benefit of the recording as well as for other attendees. All focus groups were attended by an additional researcher, which supplemented note taking and increased the internal validity of the research (Eisenhardt, 1989; Barratt et al., 2011 cited in Polyviou et al. 2020 and Sa et al. 2020).

3.3.1.3.4 Documentation

Several forms of documentary data were collected over the course of the study. In addition to emails, WhatsApp conversations and minutes of meetings, as discussed above, documentation collected included web sources, franchise materials, CFRP supplementary resources and a feasibility study (FPWG 2018). Documentary data was primarily used to corroborate the data collected through observations, interviews and focus groups (Saunders et al. 2009; Yin 2018), resulting in greater triangulation of findings (Saunders et al. 2009). For example, emails (Appendix 11), WhatsApp conversations and minutes of meetings (Appendix 10) provided complementary insight into the support sourced by the CFRPs through network ties, coupled with the types of collaboration that took place. Furthermore, franchise materials and the feasibility study (FPWG 2018) provided complementary insight in the “*joint relationship effort*” and “*joint knowledge creation*” (Scholten and Schilder 2015, p. 478-479) present across the case network.

3.3.1.4 Stage 4: Data Analysis

Yin (2018) argues that the best way to prepare for carrying out analysis of a case study is to have an analytic strategy in place. Having an analytic

strategy in place can aid in drawing links between the data and the areas of interest, thus providing the researcher with direction when it comes to analysing the data (Yin 2018). The analytic strategy adopted by this research involved relying on the theoretical propositions which led to the case study, as proposed by Yin (2018). Consequently, data analysis was conducted in the form of pattern matching. This involved comparing an empirically based pattern, that is, one based on the findings of the network, to that of a predicted one (Yin 2018), in this case, the proposed conceptual framework for SOSCRes (Figure 11), to assess its relevance. Thus, linking theory (Figure 11) to operation (that which was identified through the case study) (Trochim 2006). A distinct form of pattern matching was undertaken, referred to as explanation building (Yin 2018). In line with the explanatory nature of this study, the goal of an explanation building approach to data analysis is to explain a phenomenon (Yin 2018). Which, for this study, is the generation of SOSCRes through a set of causal sequences, explaining 'how' or 'why' SOSCRes was generated. The comparing of findings against the conceptual framework was done on an iterative basis, both during and after a coding process, revising where necessary.

Following data collection, interviews and focus groups were transcribed with the support of consented recordings and compiled alongside other documented data. This culminated in more than 200,000 words of data being generated. From here, the copious amounts of qualitative data collected were coded with the support of CAQDAS (Computer-Assisted Qualitative Data Analysis Software), specifically NVivo software.

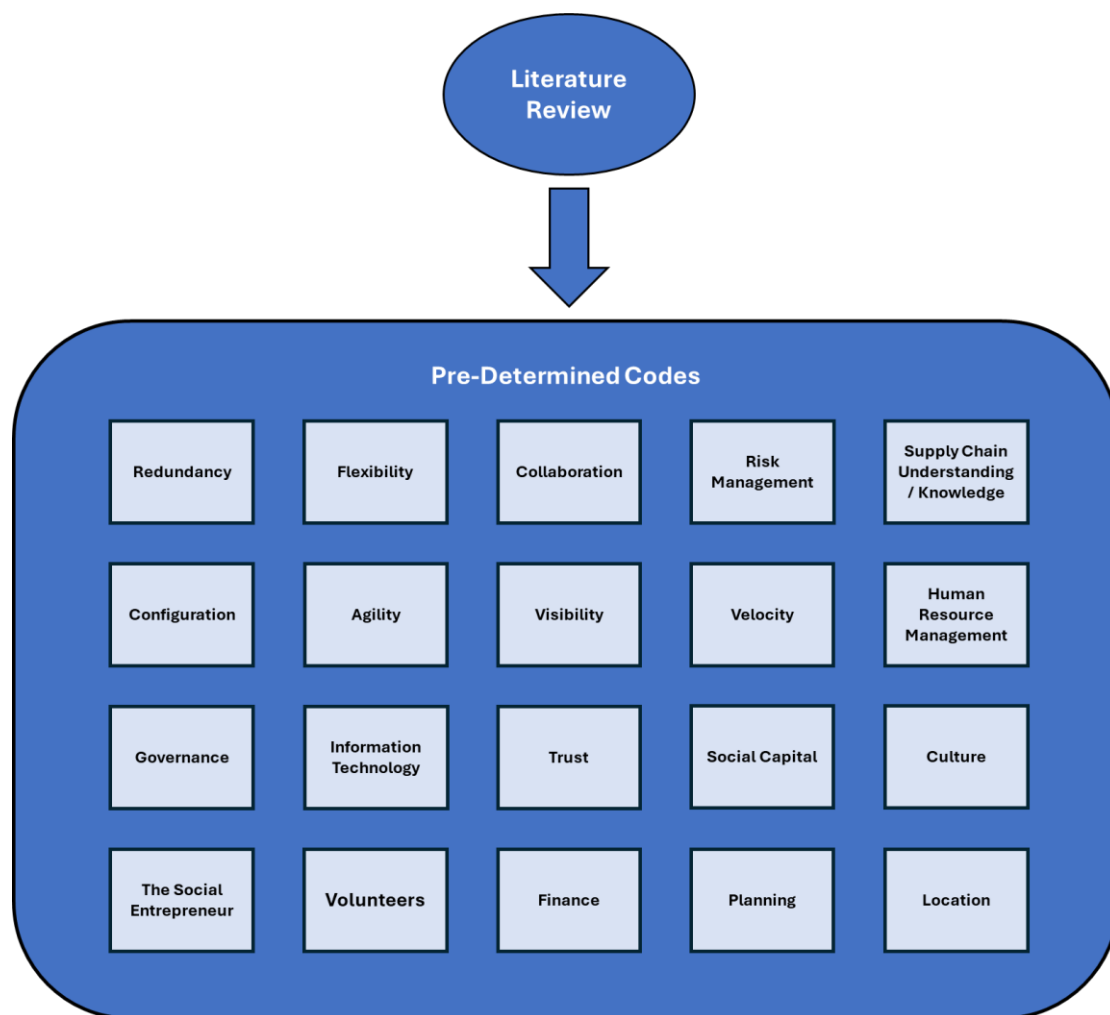
Saldana (2013) divides the coding process into two stages: (1) First Cycle, and (2) Second Cycle. First Cycle coding represents an initial effort to code and summarise qualitative data (Saldana 2013; Miles et al. 2014), with codes applied to units of text of varying sizes. Second Cycle coding uses First Cycle codes, reorganising and categorising them into a

smaller number of broader concepts (Saldana 2013; Miles et al. 2014).

Figure 14: Data analysis process

This study approached the coding process using an initial set of pre-determined codes (Figure 15), an approach commonly discussed within methodology literature (Saunders et al. 2009; Miles et al. 2014; Sekaran and Bougie 2016).

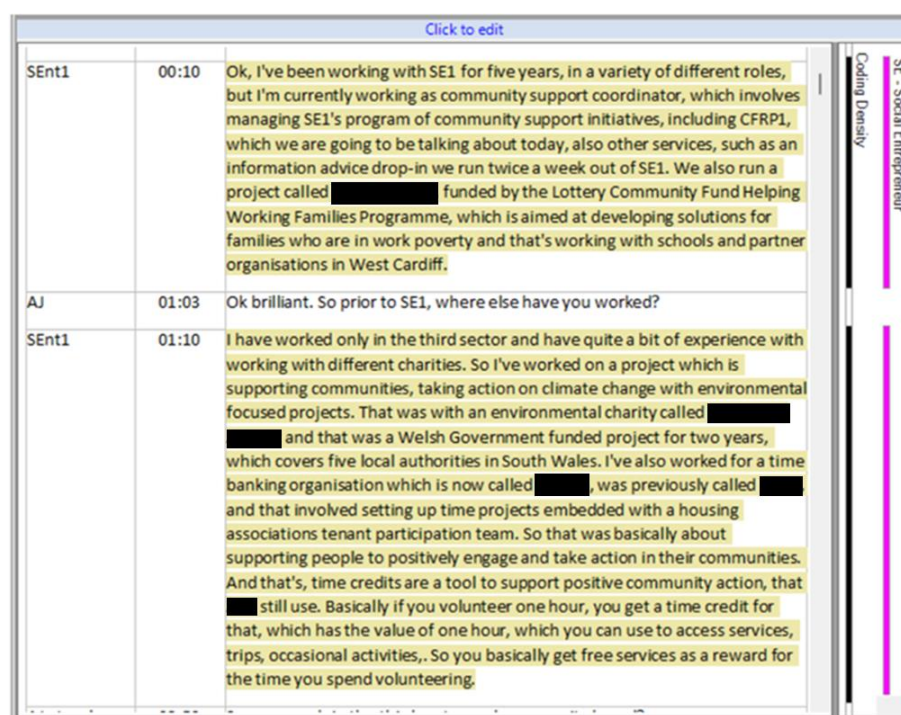
Figure 15: Pre-determined codes



These codes were derived from and represented key themes found in the literature review and resulting conceptual framework for SOSCRes (Figure 11), thus creating harmony between the data and the conceptual framework (Saunders et al. 2009; Saldana 2013). The benefit of this, Saunders et al. (2009) argues, is that it provides a structure which is relevant to your study, thus supporting both the organisation and analysis of the data. Consequently, these codes represented a form of provisional coding (Saldana 2013). This set of codes was tested on an interview transcript prior to undertaking the coding process in full, so to assess its appropriateness in preparation for Second Cycle coding (Miles et al. 2014). This was done using a holistic coding approach, whereby a single code

(Figure 15) was applied to paragraphs of data in order to capture the general theme of discussion (Miles et al. 2014) (Figure 16).

Figure 16: Holistic coding example – The social entrepreneur



From here, First Cycle Coding took place. This study adopted an 'Eclectic Coding' approach during the First Cycle, which "employs a select and compatible combination of two or more First Cycle coding methods" (Saldana 2013, p. 188). Eclectic coding was deemed appropriate for this study due to its ability to capture the intricacies of complex phenomenon within the data (Saldana 2013), such as SCRes. Table 20 below provides an example of how 4 different coding methods were utilised in this study.

Table 20: Example of coding methods

Method	Type of Coding	Description	Case Example(s)
Exploratory	Provisional	A pre-determined set of codes.	Codes derived from the LR and conceptual framework.

Elemental	Process	The use of words ending in 'ing' to imply some sort of action.	1. Planning 2. Social distancing
Affective	Values	Codes which reflect the values of participants.	Volunteer motivations.
Grammatical	Simultaneous	Applying more than one code to a single piece of data.	'Funding Opportunities' + Partnership Bids' + 'Grant Funding'

While the use of a pre-determined set of codes both before and after the First Cycle meant that the coding process was predominantly deductive, there was also an element of inductive coding during the First Cycle, which is in line with an explanation building approach (Yin 2018). The presence of inductive coding can be attributed to the way in which elements of resilience were developed within the SE literature, and how this contrasted with the SCRes literature. Hence, it was deemed appropriate to remain open to expanding on the pre-determined set of codes when coding, in case the case network demonstrated elements of resilience in unique and / or context-specific ways.

The use of process coding inadvertently resulted in an example of inductive coding. Process coding involves using verbs ending in 'ing' to capture some sort of action that has taken place (Saldana 2013; Miles et al. 2014). The use of process coding is supported by Saldana (2013), who argues that it is particularly useful when searching for actions / interactions either in response to a problem or in the pursuit of an objective. Furthermore, Saldana (2013) argues that process coding can be well-suited to questions of 'how', such as the research question asked

of this study. While process coding was present within the pre-determined set of codes through codes such as 'Planning' (Figure 15), 'social distancing' was a code that appeared inductively because of the network's response to the COVID-19 pandemic (Figure 17).

Figure 17: Process coding example – Social distancing

AJ	01:22:00	Yeah. Could you tell me more about that, what sort of processes you've put in place as a result of COVID to work through COVID?
SEnt2	01:22:10	Yeah. So when we set up initially we didn't have any volunteers for quite a few months, we just wanted to make sure that everyone was completely safe at all times, you know, two metres away from each other, that we were deep cleaning, that we knew as paid members of staff that we just had more of a responsibility to make sure that everything was cleaned and we were safe. We used a lot more space then as well, just to make sure that every fridge was 2 metres apart, just to minimise risk completely of any kind of risk of infection. Then as we got comfortable with the process, then we introduced volunteers once we knew we knew exactly what we were doing to keep people safe. And even then, in the kitchen we had a maximum of 3 people in the kitchen just so they can be at a good distance, and you know, wearing gloves and masks, and this kind of thing. Obviously, everyone wears masks and gloves, depending on what things they're handling. Then when restrictions eased, like I said, we risk assessed it again and with the relaxation of the rules we could open it as a shop again.

Coding Density
Social Distancing

Values coding involves applying codes to the data that capture the values and beliefs of participants (Saldana 2013). Saldana (2013, p. 111) argues that values coding is appropriate for studies *"that explore cultural values, identity, intrapersonal and interpersonal participant experiences and actions in case studies"*. This makes values coding particularly appropriate for this study given its exploration of topics including, but not limited to, the motivations of the social entrepreneurs and volunteers (Figure 18), the role, and sense of, community, and the interpersonal relationships between network stakeholders (Figure 18).

Figure 18: Values coding example - Motivation

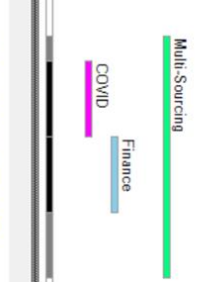
SEnt3	06:12	Yeah. So prior to COVID, none of this existed for us here in CFRP3. Prior to COVID we had all sorts of things going on. We would contribute towards the food bank in [REDACTED] financially, every month, we make a donation as a church. I had always had a heart for people that were lonely and isolated. And I knew that at some point in my journey with [REDACTED] there would be something that I could do with people who were lonely and isolated, that have been for 18months / 2 years. But I had no idea how that was going to happen, partly because of work, I see a lot of people who are lonely and isolated from the older generation. And there was a real gap, but I didn't know what to do with it. Then COVID happened, I was sent home from work for 12 weeks. There was a medical reason why I couldn't go to work for the 12 weeks. And then [REDACTED] who is [REDACTED] husband, rang me and said, "We need to do something as a church, we've got a massive pandemic, what do we do?", And out of that, [REDACTED] was born. Within 48hrs we had set up an email address, phone number, we had recruited, within the first month, we had 40+ volunteers. I would say 30 from within the church family and 10 from outside the church family that just wanted to be involved.
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Finally, simultaneous coding, and the application of multiple codes to single pieces of data (Saldana 2013; Miles et al. 2014), was prevalent during the coding process. This can be attributed to the complexity of the concept of SCRes, and the inter-related nature of its sub-elements. For example, Figure 19, below, depicts a portion of a transcript where the discussion covered multiple topics, namely multi-sourcing, finance and COVID.

Figure 19: Simultaneous coding example – Multi-sourcing / finance / COVID

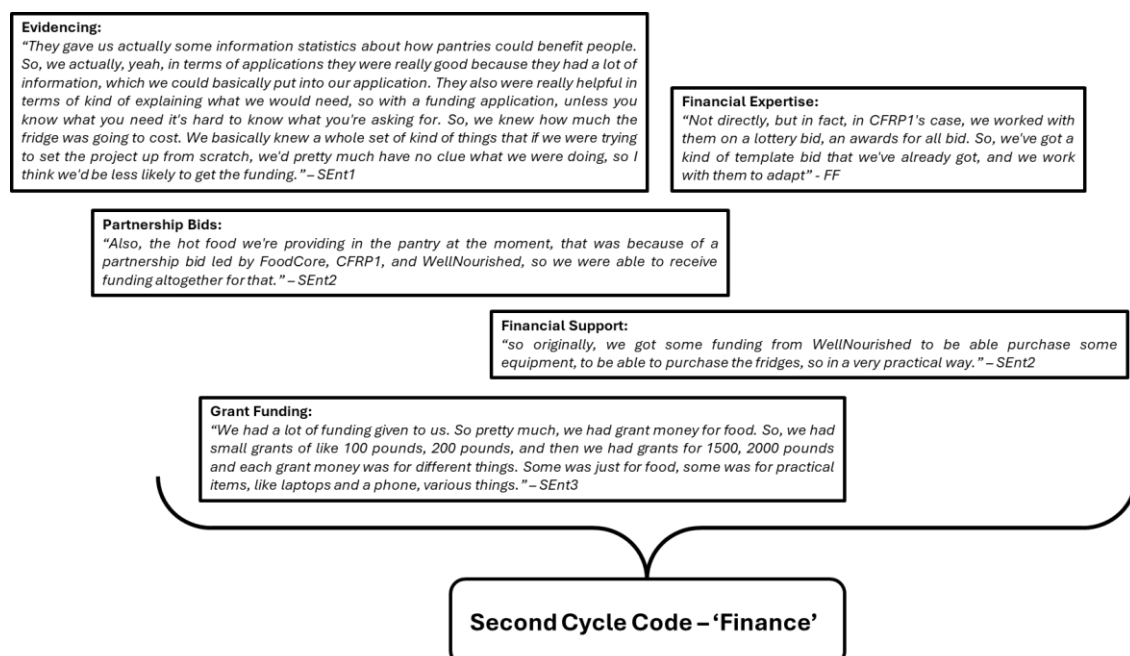
AJ	23:19	Yeah. So are ReFood Wales your only supplier?
SEnt2	23:25	So, we, uh, 90 percent of our food is from ReFood Wales and then we work with the local Halal butchers to get some Halal meat. And we were working with Riverside market to get some extra fruits and vegetables in. And we'll start that up again once restrictions have eased a bit more. Some of our stuff, we've got some funding to be able to buy in some ingredients and in the past as well we have supplemented, well when we can get funding to get like recipe packs for example, that's not consistent. Consistently we get most of our stuff from ReFood Wales, and then we'll go to a halal butcher every week as well.



From here, Second Cycle coding took place. Unlike the First Cycle coding, Second Cycle coding was conducted using a single coding method: Pattern Coding. Pattern coding involves organising and attributing meaning to organisations of First Cycle codes (Saldana 2013). This is where the pre-determined codes (Figure 15) were primarily utilised, with the 'higher level' elements derived from the conceptual framework for SOSCRes

(Figure 11) representing the smaller, broader concepts as discussed by Saldana (2013) and Miles et al. (2014). Like process coding, pattern coding is said to be well-suited to questions of 'how' (Saldana 2013), supporting its application here. Furthermore, Miles and Huberman (1994), cited in Saldana (2013, p. 210) state that pattern matching is appropriate for "*the search for rules, causes, and explanations in the data*", and "*examining social networks and patterns of human relationships*". This again supports the application of pattern coding here, with both deemed integral to answering the RQ: 'How can resilience be built into alternative food supply chains that help alleviate the food poverty problem?'. Figure 20, below, provides one example of how First Cycle codes ('Evidencing'; 'Financial Expertise'; 'Partnership Bids'; 'Financial Support'; 'Grant Funding') were grouped under a pre-determined Second Cycle code ('Finance'). Ultimately, this led to examination and understanding of how SEs within the case network sourced the necessary finance to set up and thrive.

Figure 20: Second Cycle coding example - Finance



Following the coding process, the findings of the case study were compared against that of the proposed explanation a final time. This was

done concept by concept using the smaller number of broader Second Cycle codes, followed by comparing the interrelationships between these concepts to build an empirically tested framework for SOSCRes from the bottom up.

3.3.1.5 Stage 5: Dissemination

A standardised approach to case study reporting was followed here, applicable for explanatory studies such as this (Saunders et al. 2009). A conscious effort was made to use key terminology that was in line with previous studies, except for that which was innovative, such as SOSCs, which is explained in “*clear, operationally defined ways*”, as suggested by Yin (2018, p. 67). Beginning with the problem being studied, a review of the relevant literature is then presented, followed by an explanation of the methods used and the data collected. From here, the research findings are presented. The findings have been broken down into two chapters. The first illustrates the stakeholders, structure, and processes of community food provision. This provides the reader with a logical linear understanding of the actors and activities involved. The second provides an account of the network ties found to have contributed to SOSCRes. The conceptual framework for SOSCRes (Figure 11) provides a well-organised and logical structure through which these findings are discussed. Consequently, an analysis of the data was provided in conjunction with this account, with the findings being compared to that of the conceptual framework. This eliminates repetition as well as preventing the case study from being discussed in a prolonged and unclear manner, a common pitfall among case study research (Yin 1981b), therefore enhancing reliability (Gustafsson 2017) and rigour (Meyer 2001, cited in Hyett et al. 2014). Following Guba’s (1981) notion of neutrality, findings were also presented with the support of quotes throughout so to minimise bias. The ‘discussion and conclusion’ chapter reflects on this holistically as well as providing a revised framework for SOSCRes. The chapter finishes

with concluding remarks and the implications of the research (Saunders et al. 2009).

3.4 Summary

This chapter explores the methodological choices made in the pursuit of answering the RQ: '*How can resilience be built into alternative food supply chains that help alleviate the food poverty problem?*'. This research is undertaken from a pragmatic philosophical position. In line with a pragmatist standpoint, an AR methodology was adopted. This involved conducting an explanatory case study into a social food supply chain network operating throughout South Wales. A longitudinal qualitative multi-method approach to data collection was used, consisting of observations, interviews, focus groups and document analysis over a 33-month period. Data analysis was conducted through a form of pattern matching called explanation building (Yin 2018). This involved conducting theory testing and building by comparing findings from the social food supply chain network against that of the conceptual framework for SOSCRes. This resulted in validation and refinement of the conceptual framework, as well as providing an explanation for the development of SOSCRes through a set of causal sequences.

CHAPTER 4: FINDINGS I: ALTERNATIVE FOOD PROVISION - STAKEHOLDERS, STRUCTURE & PROCESSES

4.1 Introduction

Described as “*the first stepping-stone for effective strategic supply chain management*” (MacCarthy et al. 2022, p. 2), a SC map provides the basis for conducting SC analysis (Gardner and Cooper 2003). While SC maps can vary significantly in appearance, the premise remains the same: to provide “*a representation of the linkages and members of a supply chain*” (Gardner and Cooper 2003, p. 46). For example, Anastasiadis et al. (2020, cited in MacCarthy et al. 2022) maps out stakeholder involvement across different stages of Greece’s tomato SCs.

This chapter presents key findings from the primary research, involving observations, interviews, and focus groups, to illustrate the stakeholders, structure, and processes of alternative food provision. In doing so, this chapter maps alternative food supply chain provision in the form of a ‘house’ model developed during the focus groups. Consequently, this chapter answers the following sub-research question:

What does alternative food supply chain provision look like?

Firstly, an introduction to the key stakeholders of the case network is provided. The structure of the network, along with the position of stakeholders within this structure, is then illustrated using this house model. The chapter concludes with an explanation of the network’s alternative food provision processes.

4.2 Stakeholders

4.2.1 FoodCore

National program 'Sustainable Food Places' encourages regions to set up food partnership groups *"to make healthy and sustainable food a defining characteristic of where people live"* (Sustainable Food Places 2023), as was the case with FoodCore. A city-wide local food partnership open to individuals, food businesses and charities alike, they believe that the food we consume impacts hugely on life throughout the city, not just on individuals' health, but on the communities, businesses, farmers and even the environment. FoodCore broadly define their primary target beneficiaries as the citizens of the city; however, they acknowledge targeting areas where food inequalities are an issue, along with organisations working with people in poverty, but place no strict restrictions on who can become a partner.

4.2.2 FranchiseFood

FF are a registered charity that works principally with churches, but also a range of other partners, to develop long-term solutions to poverty throughout the UK. FF defines its mission as tackling *"all kinds of poverty"*, focusing on varying topics at various times. To achieve this mission, FF work with those experiencing poverty to understand what poverty looks and feels like from their perspective, what the issues are, and what solutions work for them. FF run a range of programmes surrounding bringing together groups of people in poverty, both locally and nationally, to develop solutions, as well as working alongside government, targeting policy change. They report that *"pretty much all we do is through partnership, working with one kind or another"* (FF Director).

Of these programmes, this research focuses on FF's CFRP franchise model. It was stated that FF chose to prioritise this model because it

represented, in terms of food poverty initiatives and local anti-poverty initiatives, a deliverable, resilient and sustainable model which “*provided people with a good long-term solution*”. Originally developed by a social landlord in England, at the time of interview, FF had worked with the social landlord over the past three years to develop the model into something that can be replicated across the country as a social franchise. At the time of interview, there were 10 FF franchisee CFRPs in operation across the UK.

Beyond their franchise work, FF developed a national food program. Conscious that there had been a multitude of local community responses to food poverty in recent time, which had seen “*30, 40, 50 local groups doing something*” in any one place, the program aims to facilitate some much-needed coordination and shared learning among such projects. It was through this program that FF first encountered FoodCore. FF had employed FoodCore’s sustainable food coordinator as a mentor on the program. It was then that the Sustainable Food Coordinator was invited to see initial CFRPs in operation.

4.2.3 ReFood Wales

ReFood Wales is an independent registered charity, established in 2010, and one of a network of ReFood organisations nationally operating under the ReFood UK banner with more than 25 years’ experience working with the food industry. Described as a “*Third Sector Wholesaler*”, acting as “*the middleman between food businesses and the third sector*”, ReFood Wales aims to maximise the social benefits of surplus food through ensuring food does not go to waste. To achieve this, ReFood Wales source surplus food from the food industry, redistributing it to organisations that help those in need. Targeting in particular; charities, not-for-profit organisations and community groups that work with vulnerable people.

ReFood Wales became a prominent partnering organisation of FoodCore and the primary supplier to the CFRPs within the case network.

4.2.4 Community Food Retail Projects

4.2.4.1 Community Food Retail Projects Overview

Table 21: CFRPs overview

	CFRP1	CFRP2	CFRP3	CFRP4
Established	June 2019	May 2020	May 2021	October 2020
Target Consumers	<i>"It's about people that are basically finding it a bit difficult"</i>	<i>"People that struggle with day-to-day costs"</i>	<i>"Anybody who will benefit"</i>	<i>"Anybody"</i>
Membership Fee	£5	£5	£3.50	£1*
Additional Fees	N/A	N/A	N/A	£5 per food bag.
Membership Tally	150	120	96	870**
Operating Days / Times	Wednesdays and Thursdays 10-5	Tuesday 12-6 and Wednesday 10-2	Tuesday 9-30-12 and Friday 3.30-5:30	Thursdays

*Members of CFRP4's CFRP are required to make a one-off membership fee of £1 before being able to purchase £5 food bags as and when they wish.

**870 members across the 14 CFRPs they manage.

4.2.4.1.1 CFRP1

Established in June 2019, CFRP1 was Wales's original flagship CFRP model and is a member of the FF franchise. Open Wednesdays and Thursdays 10-5, CFRP1 provides its 150 members with more than £15 worth of shopping, including a variety of fresh fruit and vegetables, for a weekly membership fee of £5. Regular users save approximately £780 annually through this membership.

4.2.4.1.2 CFRP2

Established in May 2020, CFRP2 is a CFRP and member of the FF franchise. Open Tuesday 12-6 and Wednesday 10-2, CFRP2 provides its 120 members with £15-20 worth of shopping, including fresh fruit and vegetables for a weekly membership fee of £5. With each member equating to 1 family, it was estimated that the individual recipients of the food provided was closer to 400.

4.2.4.1.3 CFRP3

Established in May 2021, CFRP3 is a CFRP and member of the FF franchise. Open Tuesday mornings from 9:30am and Friday afternoons from 3:30pm, at the time of interview, CFRP3 had 96 members attending the CFRP across the two days, consisting of single people, couples and families ranging from one-parent-and-one-child to families of 6, 8 and 11. It was estimated that the 384 membership visits they have had since launch equated to over 1000 individuals helped.

4.2.4.1.4 CFRP4

A community interest company, CFRP4 operates as an umbrella organisation running a network of local CFRPs throughout a county of South Wales. With their first 5 CFRP established in October 2020. CFRP4 operates a membership model consisting of an initial £1 membership fee which allows access to £5 bags of food. At the time of interview, CFRP4

serves approximately 870 members across 14 CFRPs, averaging 200 bags of food sold per a week.

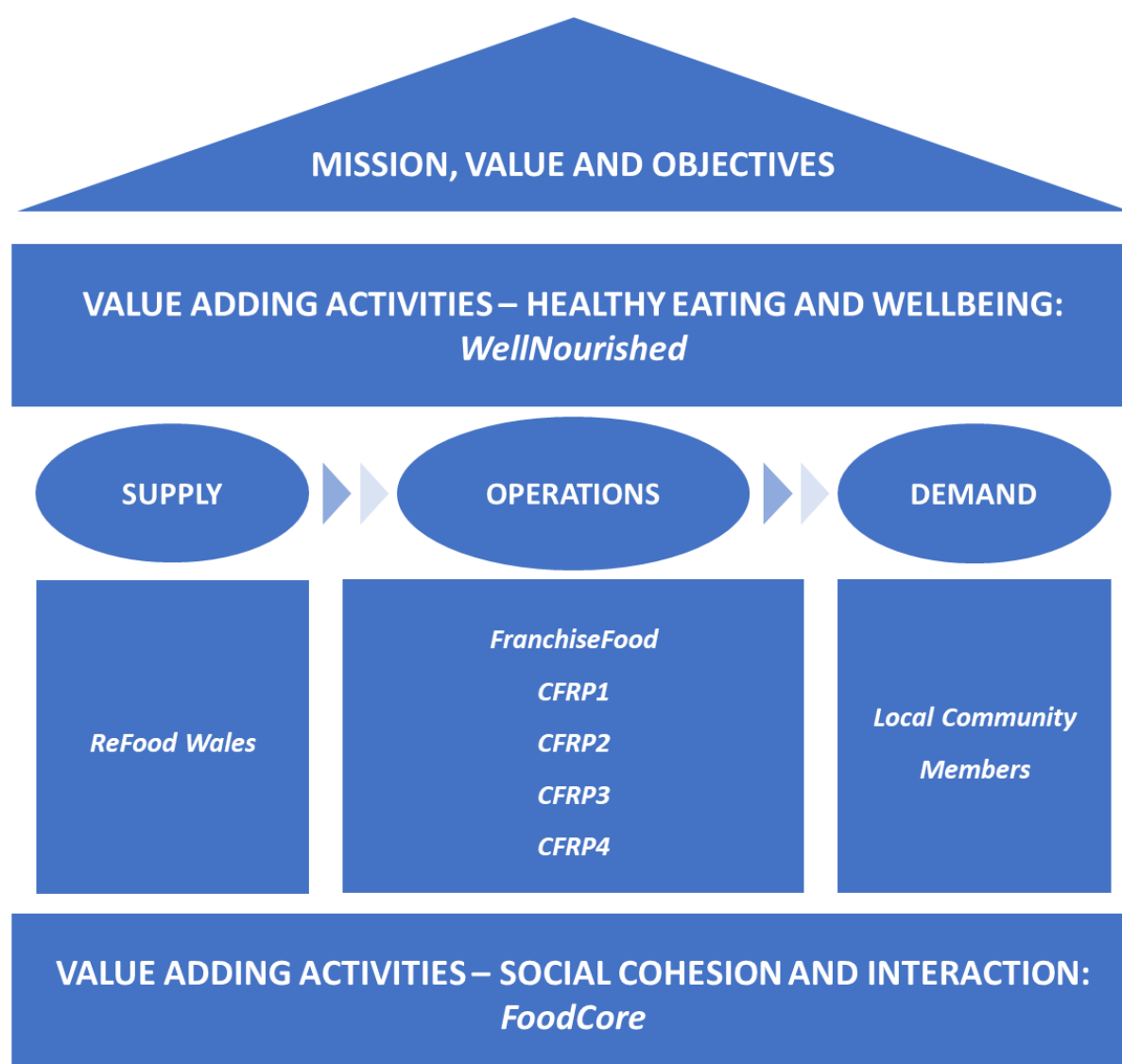
4.2.5 WellNourished

Part of a wider dietetics and nutrition team within the local health board, community food network partner WellNourished consists of a team of 24 full-time and part-time dietitians, dietetic system practitioners and dietetics support workers. They provide training to the local community to develop their nutrition knowledge and skills, enabling them to promote healthy eating and prevent malnutrition throughout the community.

4.3 Structure

Following identification of the key stakeholders within the case network, a 'house' model was developed (Figure 21). This house model was developed through consultation with network members as a way to encapsulate and communicate the structure of the case network and the roles of stakeholders.

Figure 21: Community food provision house model



The remainder of this chapter explores the processes of the case network in line with this house model. Beginning at the bottom of Figure 21 and working up, with 'VALUE ADDING ACTIVITIES – SOCIAL COHESION AND INTERACTION' (Figure 21), this chapter will delve into the role of network orchestrator FoodCore. Turning to the middle of the house model, the key role of ReFood Wales in 'SUPPLY' is then outlined, as the primary supplier to each of the case CFRPs. An account of each of the case CFRPs' operations is then provided. This is followed by an exploration of how 'DEMAND' for such food provision services has established and grown across the network. This chapter concludes by considering the top part of

the house model, with 'VALUE ADDING ACTIVITIES – HEALTHY EATING AND WELLBEING' and the role of WellNourished.

4.4 Processes

4.4.1 Value Adding Activities – Social Cohesion and Interaction

4.4.1.1 FoodCore

FoodCore achieve their mission in several ways, often facilitated through their SFPC (a role employed under Public Health Wales, but co-funded with the local council, and Sustainable Food Places). Through the SFPC, FoodCore acts as an orchestrator for connecting, supporting, and promoting community food initiatives throughout the city. This is achieved primarily through arranging and chairing meetings as well as acting as “*a hub or an information point*” (FoodCore). With the SFPC describing themselves as “*a resource to support [others]*” (FoodCore). Outside of group meetings, FoodCore and the SFPC communicate with partners through email chains and social media.

FoodCore holds quarterly meetings each year, to which all ‘partners’ are invited to provide networking opportunities. These meetings are typically attended by 10-15 mostly public and voluntary sector organisations. The SFPC also stated it is one of their priorities to increase business sector representation, along with that of SEs more specifically. In addition to these quarterly meetings, FoodCore has leveraged its network of dedicated partners to establish several ‘key issue working groups’ throughout its history. The purpose of such groups is to foster collaboration in tackling prominent social, economic, and environmental problems. One of these groups being the FPWG, a group dedicated to alleviating food poverty throughout the city through a coordinated response.

It was through one of these FPWG meetings that the city's first CFRP came to fruition. The concept of a CFRP was first brought to the attention of the SFPC by an external source at a national level, who then decided to promote the idea locally, to the attention of the FPWG members. This saw discussions take place surrounding the possibility of trialling a CFRP in the city as well as identifying a partner organisation willing to carry out a trial.

4.4.2 Supply

4.4.2.1 ReFood Wales

ReFood Wales represents the primary supplier for each of the CFRPs. ReFood Wales were and was therefore crucial to the continuation of the CFRPs' operations, with SEnt1 stating *"if ReFood Wales don't give it to us, we have limited capacity to buy it from anywhere else"*. The implication being that, should ReFood Wales cease to exist, unless a similar supplier was identified, CFRP operations would also have to cease, as it would not be financially sustainable to restock them with supermarket food.

Through their network affiliations, ReFood Wales benefits from ReFood UK's food sourcing agreements, which involve many of the UK's large food manufacturers, wholesalers, pack houses and retailers. Working with the pre-supermarket SC, including everything from the farmer's fields to distribution centres, ReFood Wales does not work with post-supermarket surplus. The food redistributed by ReFood Wales may be categorised as surplus for a host of reasons relating to a lack of commercial viability. Reasons cited include short use by dates, oversupply due to changes in weather, packaging errors, end of promotion and damage. With damaged produce including dented tins and imperfect *"wonky"* fruit and veg, both of which, whilst considered damaged, are still suitable for consumption (ReFood Wales). The circumstances in which ReFood Wales receives surplus food varies from planned allocations to ad hoc supplies. With ad

hoc supplies, ReFood Wales determine whether they have the space available and whether the produce is something they and their members can use, depending on dates and nature of items. This is further supported by ReFood Wales' network involvement, which facilitates intra-network sharing among ReFood organisations should excess produce be available.

ReFood Wales does not sell the food on a per item basis. Instead, they utilise a membership model whereby membership prices vary depending on the level of service, i.e., the amount of food received. Members pay a monthly fee for a weekly food order, with memberships beginning at £65 per month for 50kg of food per week. Food provided by ReFood Wales is heavily subsidized compared to its retail value so that the value of the food received typically equates to more than 5 times the membership fee paid. To be a member, organisations are required to have the necessary facilities to hold a variety of fresh, dry, chilled, and frozen goods. ReFood Wales utilises a variety of ordering strategies for its members. For some members, ReFood Wales informs them of what produce they have received, and the member lets them know what they want, while others receive an allocation of food each week at a set amount.

When redistributing the food, ReFood Wales utilise several methods. The delivery of food was said to vary from member to member, depending on size of their allocation as well as location. Some members receive their goods directly, while others use a local collection point whereby ReFood Wales deliver the produce with the support of cooler boxes to then be collected by multiple members. However, all members are given regular individual delivery slots.

4.4.3 Operations

4.4.3.1 Operational Processes

4.4.3.1.1 *FranchiseFood*

Defined as “a member-run food club”, core to FF’s CFRP franchise model is its membership structure. The CFRPs do not sell food. Members pay a membership fee which entitles them to access surplus food. With the CFRPs located in low-income communities, membership is predominately represented by people on low incomes who are struggling to access and afford healthy food on a regular basis. However, the social impact of the model went well beyond this demographic. FF spoke of creating a deliberately low barrier to membership among franchisees, with membership open to all who reside in the locality of the CFRP. In contrast to food banks, where you mostly must be referred to access food, prospective members are expected to make a declaration that they were on a low income. However, this represented self-definition with no evidential requirements. This was attributed to the openness of the CFRP, and their emphasis on inclusivity.

Similarly, to become a franchisee, FF again spoke of the absence of any formal criteria. Instead, they emphasised the interpersonal qualities of the potential franchisee and that they understood the ethos of what FF were about, and what they were trying to achieve. A significant aspect of understanding this ethos was understanding the difference in what is being offered compared to food banks. In acknowledging food banks as the dominant model available for delivering food aid, FF want it to be clear to potential franchisees that this [the franchise model] is not a food bank, with membership, choice, dignity and being in an environment that people are happy to visit being core to the offer. This included the not-for-profit nature of the CFRP, stating “*if somebody came to us with a proposition to make money out of this, then that wouldn't fit the ethos*” (FF). Despite emphasising a lack of formal criteria to become a

franchisee, FF went on to state that potential franchisees must be able to deliver a set of core elements for the CFRP. This included being located appropriately, both geographically and in terms of premises, coupled with the ability to recruit volunteers. To become a member of one of FF's franchisees, individuals must be residents of the local borough and experience some sort of financial difficulty, which is reiterate in a membership application form.

"They're yes or no questions but they're not very strict, we're not asking for income threshold" – SEnt1.

"We don't tend to ask too many questions, but we try and get a kind of picture of why through gentle conversation" – SEnt2.

Hence, other than address details, no evidence is requested by franchisees as part of the membership eligibility process. The decision to not require circumstantial evidence from prospective members was part of a conscious effort among the CFRPs to distance themselves from being like a foodbank.

4.4.3.1.2 Community Food Retail Projects

As part of the FF franchise, CFRP1-3 operate using a membership model. On designated days, members arrive and pay their membership fee. This is with cash or via standing order, with members able to pay on the day or weeks in advance, should they wish. This was to accommodate people who are paid monthly, receive benefits fortnightly or struggle with budgeting. This, and member's information, is then entered into the franchise system to record payment and attendance. From here, members can select their 'hearts' and 'diamonds' items. Each member is allocated 4 'heart' items and 6 'diamond' items. As outlined by FF, any item valued £1.50 or over is classified as a 'heart' as a higher-priced item. Alternatively, items valued under £1.50 are classified as a 'diamond' as a

lower-priced item. The benefit of the 'hearts' and 'diamonds' system, SEnt3 claims, is, again, that it makes the model empowering and accessible to those for whom English is not their first language as well as those whose literacy / numeracy skills are underdeveloped. With the implementation of a 10-item maximum per membership, the franchisee CFRPs can ensure that they do not run out of food. Members of CFRP1 and CFRP3 can also choose free items in addition to their allocated 10 from a selection of fruit and vegetables as well as short-date or just-past-best-before items intended to be eaten either on that day or the day after. These free items are sourced via donations from local allotments.

Whilst not part of the FF franchise, CFRP4 also uses a membership model across its CFRPs. CFRP4 requires individuals to make an initial one-off payment of £1 to become a member, receiving a membership card in return. Unlike CFRP1-3, CFRP4 places no residential requirements on membership, with membership open to anybody and members able to use their membership card to access any of CFRP4's CFRPs, regardless of location.

"The only time we ask addresses is if we are undertaking delivery" –
SEnt4.

Members can then pay £5 for a bag of food. While all CFRP4's CFRPs follow this core model, it was stated that *"each CFRP has its own character, and they're sort of developing in slightly different ways"* (SEnt4). Despite it being seen as best practice to give members as much choice as possible in the contents of the food bags, choice was not present at all their CFRPs.

"You go to the shop, and what you'd choose, probably wouldn't be what I choose and that wouldn't be what my next-door neighbour would choose"
– SEnt4.

Choice is present in those CFRPs with sufficient shelving and storage, with a small number only providing pre-packed bags of food. There has also been CFRPs set up in locations where food could not be stored on site. In this event, one CFRP acts as a supply hub to others, taking in copious quantities of food each week from ReFood Wales, which is then made up into pre-packed bags and delivered to those without storage space to be sold on to members. In other areas, CFRPs offer a delivery-based service. This was attributed to the elderly demographic which makes up much of the membership base in certain communities, coupled with adverse terrain, where, for a lot of people, to carry a large bag of food home was not feasible.

Like the franchisee CFRPs, there is no means testing conducted by CFRP4 across any of its CFRPs. For CFRP4, this was attributed to increasing in-work poverty.

“There are lots of people who are perhaps not traditionally the people you might think would struggle” – SEnt4.

Three of the four CFRPs (CFRP1; CFRP2; CFRP4) diversified their activities beyond the standard CFRP service. The importance of doing so was emphasised by their respective social entrepreneurs, with the motivation for which including increasing footfall into and around the CFRP (CFRP2) and tackling COVID lockdown-induced isolation throughout communities (CFRP4).

“It isn’t just about tackling food poverty, it’s also about helping people feel positive about food” – SEnt1.

"The point of the CFRP is to also be a kind of community hub as well and to provide other stuff alongside the shopping, to be able to provide, you know, services, fun activities, learning opportunities" – SEnt2.

"[CFRPs are] a source of support and wellbeing, as well as a source of affordable food from surpluses" – SEnt4.

CFRP1 provides recipe books for members as well as conducting foodbank assessments. Furthermore, CFRP1 conducts referrals to local support services through their CFRP voucher scheme. This voucher scheme involved a small number of one-off £5 vouchers made available to those in crisis who could not afford the membership fee, enabling them to do one weekly shop. Unlike standard membership, to access these vouchers, individuals must have an assessment interview. This was because *"if somebody doesn't have money at all, we need to be making sure that's being address through debt management or benefits"* (SEnt1). CFRP2 works with a local food business to provide hot meals alongside their standard offering. CFRP4 provides teas and coffees coupled with a designated area for members to sit and chat. Furthermore, signposting lists are made available to volunteers to support visitors by directing them to the appropriate support channels. Moreover, new members received an introductory pack containing recipes, employability support documents including guidance on how to write a CV and how to apply for a job, as well as leaflets from a variety of local support services including the community coordinators, religious groups, and mental health organisations.

4.4.4 Demand

Each of the CFRPs were situated in areas of high deprivation, with their social and commercial activities tied to those areas. Consequently, none of the CFRPs struggled in establishing a demand for their services. In fact,

each of the CFRP quickly surpassed their initial membership targets. For example, at launch, CFRP1 wanted to restrict their membership base to “a manageable number” of 30 (SEnt1). Consequently, SEnt1 stated “*I was a bit like, we aren’t going to market*”, instead choosing to invite users of the centre with which CFRP1 was affiliated. Arguing that “*there’s a huge demand for this, we know that, if we did market it, properly, we would get thousands of thousands of thousands of people wanting to be members*” (SEnt1). This reluctance to market was also attributed to the prioritisation of applicants that CFRP1 wished to uphold, stating “*we need to make sure that those people who are really struggling get first priority for membership*” (SEnt1). Consequently, CFRP1 operates with a waiting list, however, it was stated “*if someone comes into drop-in and we know from talking to them and they’re really struggling we’ll bump them to the top of the queue*” (SEnt1). CFRP1’s membership base has since grown to 150. Alternatively, CFRP2 set themselves a membership target of 50 prior to launch, however, their membership base grew from just 30 members at launch to 120 in the space of 11 months.

4.4.5 Value Adding Activities – Healthy Eating and Wellbeing

4.4.5.1 WellNourished

WellNourished spoke of not having a specific social mission. Instead, “*it’s more working across the life course*” (WellNourished Clinical Lead). Their activities were summarised as working with vulnerable groups, targeting areas of deprivation using proportionate universalism. Born from the work of Michael Marmot, proportionate universalism was explained as the belief that inequalities cannot be reduced by focusing only on areas of real deprivation. Hence, WellNourished work with everybody, but with an increased focus on areas of deprivation. WellNourished works to develop health and nutrition knowledge and skills within communities through providing nutritional guidance and training. This is done using a nationally developed programme that aims to develop the nutritional skills of health,

social and third sector workers. This enables them to support with the prevention of malnutrition and encourage healthy eating at the community level. This is done using an asset-based approach, leveraging existing assets such as people and connections. For example, by delivering level 2 training to 10 people from 10 different organisations, those 10 people can go on and deliver those courses, with the support of WellNourished, to 10 other people. Of the courses provided, the community food and nutrition course gave those working in the community the latest research-based nutrition skills and knowledge, which could then be disseminated throughout the communities in which they work. Practical cooking courses also supported individuals to learn to cook and how to budget for food.

WellNourished works in collaboration with several public and third sector entities, while no collaboration with the private sector, and supermarkets, was said to occur. Public sector entities included both national and local governments as well as schools, youth centres and homeless shelters. Third sector collaborators included FoodCore and members of the FPWG and CFRNs. Much of WellNourished's work is facilitated and coordinated by their Clinical Lead. WellNourished's Clinical Lead has been involved in FoodCore's activities since the beginning, being an ever-present contributor to group meeting, as well as having an active role in the development of the CFRN. This was attributed to a perceived alignment in their priorities around food poverty.

4.5 Summary

This chapter illustrates what alternative food supply chain provision looks like in the context of the case network. This was done by outlining the stakeholders, structure & processes involved, which have been encapsulated in the 'house' model presented (Figure 21). As illustrated in the 'house' model with the presence of 'Value Adding Activities',

alternative food provision is not just about providing food, nor is it just providing access to food enough to address the food poverty issue.

FoodCore played a vital role as an orchestrator for connecting, supporting and promoting CFRPs, while WellNourished supported CFRPs to develop their health and nutrition knowledge and skills for the betterment of the communities they serve.

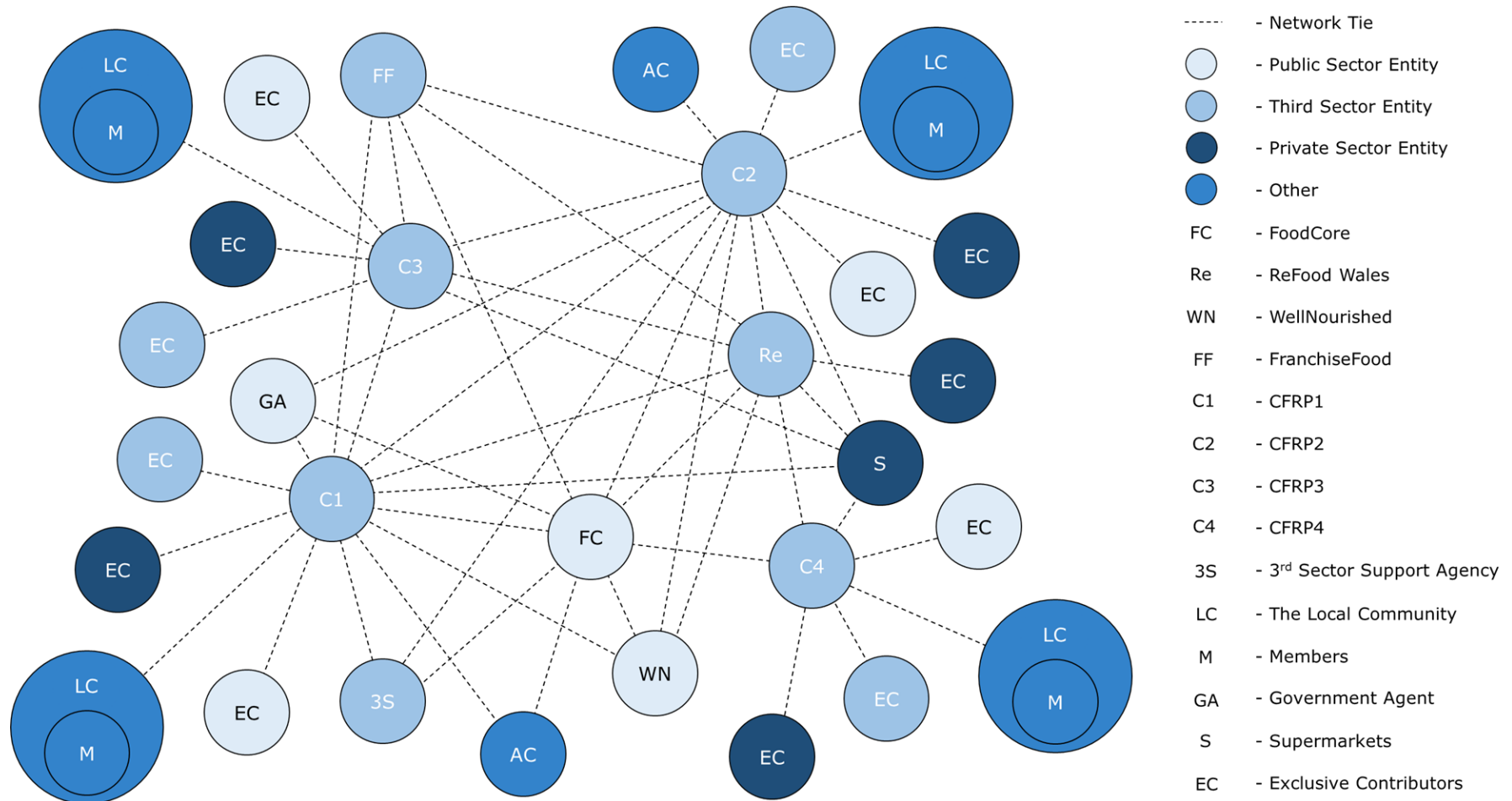
CHAPTER 5: FINDINGS II: SOCIAL SUPPLY CHAIN RESILIENCE – NETWORK ANALYSIS

5.1 Introduction

This chapter explores the role of collaboration in developing SOSCRes. To do this, this chapter examines the ties found across the case network and how these ties benefited both the CFRPs and the network. Through data analysis, this study identified the ties within the case network that contributed to SOSCRes. In addition to those in Figure 12, several other contributors to SOSCRes were identified. These were identified both explicitly by respondents and through researcher observations. Building on Figure 12, these additional contributors have been incorporated to provide an accurate representation of the network ties that contributed to the development of SOSCRes, as illustrated in Figure 22. For conciseness, public, private or third sector contributors that were exclusive to the personal network of a CFRP were grouped together.

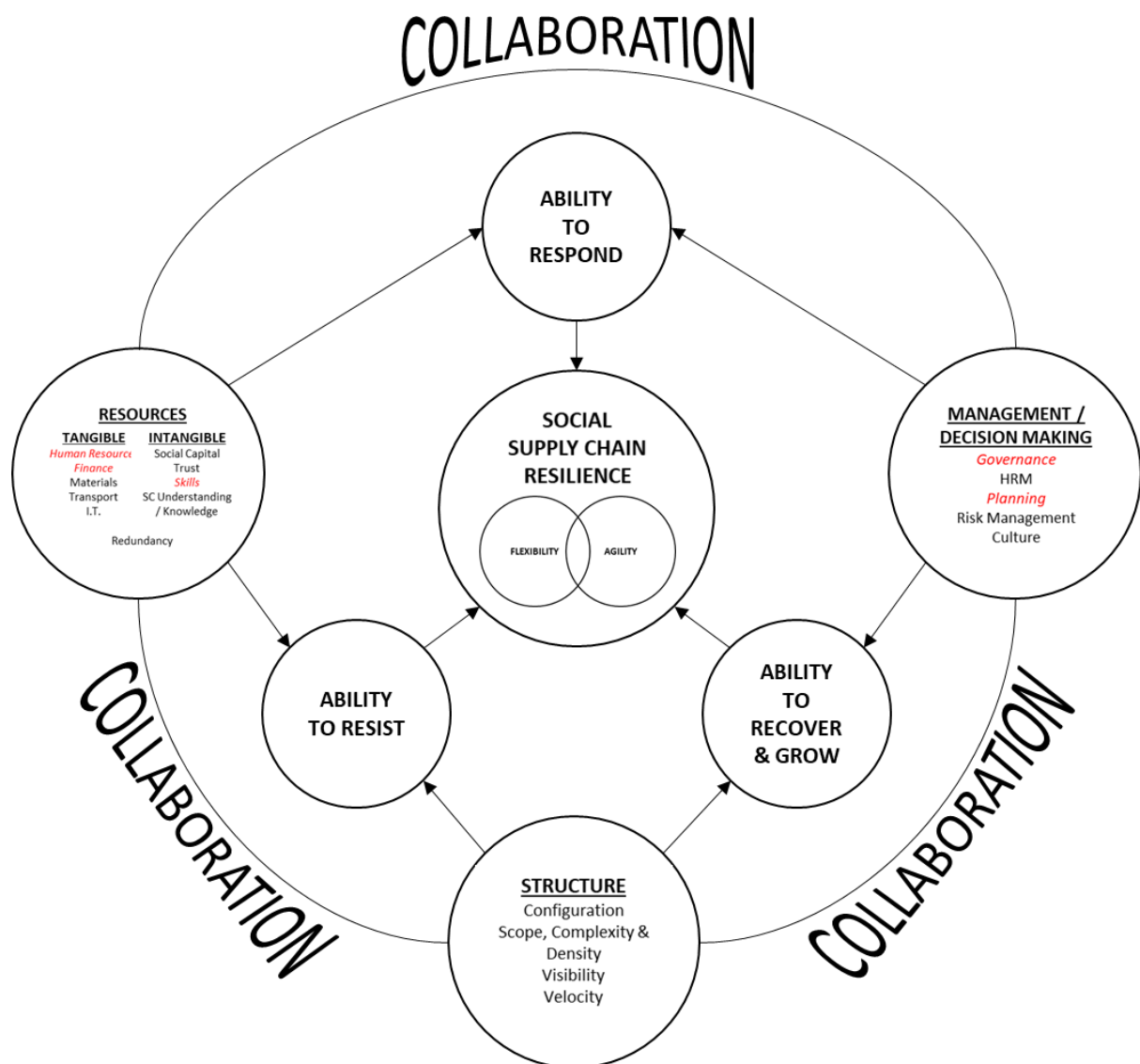
The CFRPs collaborated with a variety of entities, including other organisations from across the public, private, and third sectors, as well as with members and their local communities more generally (Table 15). This resulted in the presence of organisational (Juttner and Maklan 2011), horizontal and vertical (Johnson et al. 2013; Leat and Revoredo-Giha 2013; Scholten et al. 2014; Manning and Soon 2016; Hendry et al. 2019) collaboration across the case network. This collaboration, as will be illustrated, occurred through information sharing (Christopher and Peck 2004; Ponis and Koronis 2012; Wieland and Wallenburg 2013; Scholten and Schilder 2015; Tukamuhabwa et al. 2015; Kamalahmadi and Parast 2016; Ali et al. 2017a; Jain et al. 2017; Tukamuhabwa et al. 2017; Sa et al. 2020), “*joint relationship effort*”, and “*joint knowledge creation*” (Scholten and Schilder 2015, p. 478-479).

Figure 22: Map of network ties contributing to SOSCRes.



The remainder of this chapter is structured in line with the conceptual framework for SOSCRes (Figure 11), which has been re-presented below, and will explore how collaboration contributed to the resources, structure, and management / decision-making capabilities necessary to generate SOSCRes.

Figure 11: Conceptual framework for SOSCRes



5.2 Resources

5.2.1 Tangible

Network ties played a significant role in the case network sourcing the tangible resources needed to develop SOSCRes. Through their network ties, the CFRPs were able to source additional human resources, outsource the transportation of food, gain support in accessing additional finance, and even add a professional aesthetic through the provision of franchise branding. These network ties also benefitted significantly from information technology, which aided collaboration, especially during the COVID-19 pandemic.

5.2.1.1 Human Resources

5.2.1.1.1 *The Social Entrepreneur*

The social entrepreneur(s) represented a key human resource for their CFRPs. Taking up the role of “*champion*”, as suggested by Rykaszewski et al. (2013, p. 24), the social entrepreneurs were the ‘face’ of their CFRPs and were central to their establishment (2.5.3.1 The Social Entrepreneur).

“Everything has got my signature on, all the partnership agreements, I bought all the fridges and the freezers and moved them all around and packaged stuff myself because of COVID” – SEnt2

In discussing their motivation for being involved in their CFRPs, each of the social entrepreneurs revealed a desire to contribute to society through addressing a social need (Sharir and Lerner 2006; Shaw and Carter 2007; Vega and Kidwell 2007). Like Shaw and Carter (2007, p. 426), SEnt1 spoke of recognising a gap in the local food supply. Hence, the social entrepreneurs mirrored Vega and Kidwell’s (2007, p. 21) “*deeds social entrepreneur*”, focused on delivering on a social aim, opposed to personal / organisational financial gain.

From the perspective of Vega and Kidwell (2007, p. 16), the social entrepreneurs were not viewed as a source of innovation, having used an approach (the CFRP model) which had been tried successfully elsewhere.

"[A social entrepreneur is] An individual who addresses a serious societal problem with innovative ideas and approaches that have not been tried successfully by private, public or non-profit sector entities" – Vega and Kidwell (2007, p. 16).

For the social entrepreneurs involved in the franchisee CFRPs, their approach had been tried successfully by FF through social franchising (Litalien 2006; Doherty et al. 2014; Cumberland and Litalien 2018; Naatu and Alon 2019). Alternatively, SEnt4 spoke of adopting the CFRP model after conducting her own research, during which it was identified as the leading approach to tackling food poverty. Consequently, the social entrepreneurs were non-Schumpeterian, acting as replicators (Young and Lecy 2014). This supports Young and Lecy's (2014) claim that Schumpeterian social entrepreneurs represent the minority, as well as provides justification for innovation's earlier omission as a key element of SE ('2.6.3.7 Innovation').

From the perspective of Leadbeater (1997), cited in Shaw and Carter (2007, p.422), the social entrepreneurs could be viewed as innovative.

"[Social entrepreneurs] identify under-utilised resources – people, buildings, equipment – and find ways of putting them to use to satisfy unmet social needs" (Leadbeater 1997, cited in Shaw and Carter 2007, p. 422).

This perspective assesses innovation based on resourcefulness and problem-solving ability, opposed to the more conventional method of investment in research and development and the number of new products

and / or services introduced. Consequently, the innovativeness of the social entrepreneurs is attributable to identifying under-utilised assets, including buildings, equipment, and people, within their local communities to tackle food poverty. Evident through clustering and the utilising of unpaid labour.

Therefore, this study acknowledges the network's social entrepreneurs as sources of innovation (2.5.3.1 The Social Entrepreneur). However, contrary to the literature (Nicholls and Cho 2006; Shaw and Carter 2007; Peattie and Morley 2008a; Desa 2010; Rykaszewski et al. 2013; Doherty et al. 2014), it maintains its rejection of innovation as a core component of SEs, and therefore, SOSCRes. This is attributed to the adoption of a tested model by the social entrepreneurs, coupled with the presence of social franchising (Litalien 2006; Doherty et al. 2014; Cumberland and Litalien 2018; Naatu and Alon 2019).

5.2.1.1.2 Employees (Paid Labour)

There was minimal presence of paid labour among the CFRPs. The social entrepreneurs represented the majority, and in some instances, the only paid labour for the CFRPs. There are 3 members of staff employed by CFRP1, including SEnt1. CFRP2 employs 3 members of staff, SEnt2, a CFRP coordinator and CFRP director. CFRP3 only employs one member of staff, a second CFRP coordinator alongside SEnt3, paid 8hrs per week. Finally, SEnt4 and her husband represent the only paid members of staff for CFRP4, as executive directors.

5.2.1.1.3 Volunteers (Unpaid Labour)

Consistent with the literature, each of the CFRPs utilised a hybrid workforce, depending on volunteers (CFRP1 = 10; CFRP2 = 15; CFRP3 = 15; CFRP4 70 (across their 14 CFRPs)) (IFF Research 2005; Sharir and Lerner 2006; Royce 2007; Doherty et al. 2014; Lyon et al. 2019; Roumpi

et al. 2020). Volunteers undertake a variety of activities across the CFRPs, including deliveries, stock management and member support. The motivation for volunteering was commonly attributed to the nature of the services provided by the CFRPs. In adopting a membership model, the CFRPs differentiated themselves from services such as Foodbanks, and in doing so, the projects were viewed as *“a hand up, not a handout”* (SEnt4). This was something that did not go underappreciated by the local community, with community members seeing the value in what the CFRPs were trying to achieve.

“People wanted to help out” – SEnt2.

Consequently, many of the members served by the CFRPs went on to become volunteers as a result of benefitting first hand from the services.

“We found the bags of food very helpful and the people delivering were lovely, so we decided to volunteer” – Volunteer (CFRP4)

In addition to this, volunteering also represented a source of employment experience for volunteers.

“The confidence I gained whilst volunteering in the CFRP helped me to find the courage and motivation to apply for a job” – Volunteer (CFRP4)

5.2.1.1.4 External Human Resources

Both CFRP2 and CFRP3 accessed additional human resources by collaborating with public sector and NPOs (BRASS 2004; GHK 2005; Peattie and Morley 2008a; Granados and Rivera 2018; White et al. 2022). CFRP2 were able to access additional human resources by collaborating with the public sector (Desa 2010) in the form of the local probation service. This government agent (Spear 2006; Desa 2010) represented a crucial human resource for CFRP2 during its first few months in operation

having launched during the COVID-19 pandemic. With the probation service's own services paused during the pandemic, they began accepting orders and carrying out deliveries on behalf of CFRP2. Furthermore, by collaborating with a local academic institution (AC), CFRP2 benefitted from the support of two placements students. Like CFRP2, CFRP3 was able to access additional human resources by collaborating with NPOs (BRASS 2004; GHK 2005; Peattie and Morley 2008a; Granados and Rivera 2018; White et al. 2022), having the support of a church-paid administrator, who was responsible for managing CFRP3's finances.

5.2.1.2 Finance

5.2.1.2.1 *Forms of Finance*

The use of multiple sources of funding for a SE (Shaw and Carter 2007; Lyon et al. 2019; Social Enterprise UK 2019) was visible amongst the CFRPs and included grants (Doherty et al. 2014; Lyon et al. 2019; Social Enterprise UK 2019), donations (IFF Research 2005; Sharir and Lerner 2006; Doherty et al. 2014) and memberships (Social Enterprise UK 2019). Like that found by Harding (2007), the primary form of finance used by the CFRPs changed as they moved through their evolutionary cycles.

The CFRPs relied on grants and donations during their establishment phase, used to cover costs including staffing (Sharir and Lerner 2006), equipment, spatial configuration, and franchise fees. With the support of £10,000 of 'Lottery Awards for All' funding, CFRP1 were able to cover the costs associated with configuring the space available to make it suitable to host FF's CFRP operations, as well as to cover initial staff costs during set up. Set up costs were further supported by a £2,000 building society grant. For CFRP2, initial grant funding from the local government (BRASS 2004; Shaw and Carter 2007) helped cover start-up costs, including the purchase of necessary equipment such as commercial fridges. CFRP3

were able to secure several grants that were geared towards food poverty and COVID recovery, totalling £2000. This enabled CFRP3 to cover the £1500 franchise set up fee, coupled with the first year's annual £500 franchise fee. Additionally, CFRP3 were able to secure grant funding to be spent on capital items, enabling the purchase of a variety of office equipment to support the running of the CFRP.

Once established, the CFRPs moved to a reliance on 'other income' (BRASS 2004), in the form of membership fees (Rykaszewski et al. 2013; Social Enterprise UK 2019). This is consistent with the literature, which identifies a shift away from a reliance on grant funding (GHK 2005; Zainon et al. 2014; Social Enterprise 2019), turning to commercial activities as a means to achieving their social ends (GHK 2005; Sharir and Lerner 2006; Harding 2007; Shaw and Carter 2007; Peattie and Morley 2008a; Seanor and Meaton 2008; Von der Weppen and Cochrane 2012; Ebrahim et al. 2014; Social Enterprise UK 2019).

Each of the CFRPs were designed in such a way that membership fees covered their operational costs, including staffing costs, food costs and utility costs, e.g., electricity and water charges. For the franchisee CFRPs, this also included a 25p-permember-visit fee payable to FF for their ongoing support, capped at £1000 annually. For CFRP4's CFRPs, this also included volunteer travel expenses, including the cost of fuel to volunteer delivery drivers. Membership fees still covered the operational costs CFRP1, despite staff costs proving to be higher than anticipated, with more staff required than originally thought. However, increased staff costs did impact how much CFRP1 could spend on additional food. This supports Rykaszewski et al. (2013) claim that through grant funding SEs can move to sustainable revenue streams, as well as the possession of sufficient funding during the start-up phase being critical to the long-term success of SEs (BRASS 2004; Sharir and Lerner 2006; Peattie and Morley 2008a). Furthermore, this shift removed the uncertainty (BRASS 2004; Sodhi and

Tang 2011) and risks associated with grant funding (BRASS 2004; Peattie and Morley 2008a; Rykaszewski et al. 2013) for the CFRPs.

Despite being designed in such a way that membership fees covered their operational costs, the CFRPs continued to source 'grant and donations' funding (IFF Research 2005; Social Enterprise UK 2019). CFRP1 used donations to sustain their voucher scheme. CFRP2 used grant funding to integrate a hot food service. For CFRP3, financial donations were either used to meet additional needs of its members, one example being period poverty, or went into "*a rainy-day fund*" (SEnt3). Alternatively, for CFRP4, financial donations came in the form of paying ahead, whereby someone, member or not, pays for somebody else to have a bag of food which they do not need themselves. Furthermore, both SEnt3 and SEnt4 continued to explore avenues for top-up funding. In one instance, CFRP4 used top-up grant funding to purchase reusable bags and PPE for volunteers as well as funding a website. Hence, as suggested by Peattie and Morley (2008a), external funding continued to be sought for the purpose of purchasing and / or developing assets. Thus, in line with Von der Weppen and Cochrane (2012), the leveraging of multiple income streams, both commercial and philanthropic, as seed and core funding (Adamson 2003, cited in Peattie and Morley 2008a), was key to the CFRPs long-term success (Peattie and Morley 2008a) and therefore, SOSCRes.

5.2.1.2.2 Financial Support

With a reliance on grant funding, accessing sufficient finances, particularly during the start-up phase (BRASS 2004; Sharir and Lerner 2006; Peattie and Morley 2008a), was critical to the long-term survival of the CFRPs (GHK 2005; Harding 2007; Peattie and Morley 2008a; Von der Weppen and Cochrane 2012; Social Enterprise UK 2019), and therefore, SOSCRes. Consequently, several nodes across the case network supported the CFRPs in accessing finance.

By collaborating with other organisations (Spear 2006; Sharir and Lerner 2006; Peattie and Morley 2008a; Sodhi and Tang 2011; Scholten et al. 2014), specifically NPOs (BRASS 2004; GHK 2005; Peattie and Morley 2008a; Granados and Rivera 2018; White et al. 2022), the CFRPs were able to access financial resources (Spear 2006; Shaw and Carter 2007; Peattie and Morley 2008a; Desa 2010; Patel and Mehta 2011; Granados and Rivera 2018).

These 'grants and donations' (IFF Research 2005) were provided with the expectation that it would be used for a specific purpose (Islam 2007). For example, both CFRP1 and CFRP2 were able to source funds through their ties to FoodCore. With CFRP1 expressing an interest in piloting FF's franchise model, FoodCore sponsored a trip to the North of England for SEnt1 and his colleagues to witness an FF CFRP in operation.

Furthermore, FoodCore gave CFRP1 £750 to be put towards FF's franchise fee. FoodCore also gave CFRP2 an undisclosed amount, provided with the expectation it would help with start-up costs. CFRP1 secured further finance from ReFood Wales. This funding was provided in support of making improvements to CFRP1's premises in preparation for the CFRP. CFRP2 secured further funds from WellNourished. This funding was provided in support of purchasing equipment, including fridges. CFRP3 were able to source funding through their ties to a local housing association. This housing association approached CFRP3 offering to outsource funding they had available for their own food initiatives that were not carried out due to COVID. This funding was provided with the expectation that it would be used to fund CFRP3's operations as a food initiative. SEnt3 acknowledged that this would not happen again as COVID restrictions are lifted, but believed it supported the CFRP to become sustainable. CFRP4 did not receive financial support like the other 3 CFRPs within the case network. This was attributed to their strategy of leveraging pre-existing assets throughout the borough when setting up their CFRPs, such as buildings, kitchen utensils and office equipment.

5.2.1.2.3 Partnership Bids

With a reliance on grant funding, the CFRPs were found to engage in “*joint relationship effort*” (Scholten and Schilder 2015, p. 478-479) through partnership bids, to access grant funding. Following the success of CFRP1, FoodCore led a partnership bid on behalf of members of its FPWG, including CFRP1 and CFRP2, submitting a collaborative bid for funding to support the expansion of the CFRPs. Furthermore, both CFRP1 and CFRP2 benefitted from a successful partnership bid alongside FoodCore and WellNourished. This enabled CFRP2 to integrate hot food alongside their standard service. Similarly, CFRP4’s first major grant funding came about through a partnership bid for government funding (Harding 2007; Shaw and Carter 2007; Sodhi and Tang 2011) alongside a housing association with whom they have an ongoing formal partnership.

5.2.1.2.4 Evidencing

With grant allocation becoming increasingly dependent on the performance of SEs, there’s greater importance placed on the CFRPs to measure performance (BRASS 2004; Nicholls and Cho 2006; Royce 2007; Peattie and Morley 2008a; Desa 2010; Rykaszewski et al. 2013). The CFRPs were found to access support for the challenging task of quantifying and measuring of social impact (Rykaszewski et al. 2013; Samuel et al. 2018; Gupta et al. 2020; White et al. 2022) by collaborating with other NPOs (BRASS 2004; GHK 2005; Peattie and Morley 2008a; Granados and Rivera 2018; White et al. 2022). For example, ReFood Wales provided each of the CFRPs with statistical information including how many kilos of food they had received, how many meals this correlates to, and how much food had been prevented from going to landfill.

"We know how much food is being distributed from our list from ReFood Wales so we can calculate an approximate saving for people" – SEnt1.

Each of the franchisee CFRPs received evidential support through their ties to franchisor FF. Prior to launch, franchisees are provided statistical information underlining how the CFRPs benefit people. Furthermore, FF explain what equipment the CFRPs need, as outlined in the provided franchise manuals. This supported the franchisee CFRPs with funding applications, with SEnt1 stating *"unless you know what you need it's hard to know what you're asking for"*, something that could jeopardise their chances of securing funding. Moreover, the franchise manual includes a template bid which FF works with franchisees to adapt to funding opportunities, thus representing *"joint relationship effort"* (Scholten and Schilder 2015, p. 478-479). FF continued to support the franchisee CFRPs post-launch through providing franchise technology and systems that record how many visits to the franchisees had been made, both individually and overall. This enables the franchisee CFRPs to produce yearly social impact reports, something SEnt3 believes would not have been achievable without FF.

For CFRP4, the act of collaborating with other organisations (Spear 2006; Sharir and Lerner 2006; Peattie and Morley 2008a; Sodhi and Tang 2011) was crucial in the pursuit of grant funding. SEnt4 cited being able to list other collaborating organisations as an asset in the funding application process.

"If you can't bring those sources of support in, if you can't show that you can work with other organisations, you're not likely to attract funding" – SEnt4.

This was a sentiment shared by FoodCore. FoodCore encourages members of its FPWG, CTF, and CFRN, including CFRP1 and CFRP2, to list them as a supportive organisation in funding bids.

“If anybody is also looking to put in a bid, FoodCore really happy to be referenced as supportive” – FoodCore’s SFPC

The above illustrates how the CFRPs leveraged their network ties to source customer and market data (Shaw and Carter 2007) to strengthen funding applications (Rykaszewski et al. 2013) and reduce the likelihood of funding applications being rejected and causing subsequent funding gaps (BRASS 2004; Nicholls and Cho 2006; Royce 2007; Peattie and Morley 2008a; Desa 2010; Rykaszewski et al. 2013). For example, SEnt1 recalled coming to the realisation after seeing an FF CFRP in operation that they did not have a suitable space. However, with the support of statistical information from FF, CFRP1 secured £10,000 of lottery funding. This enabled CFRP1 to cover the costs associated with creating a suitable space for the CFRP, coupled with initial staffing costs.

5.2.1.2.5 Signposting

As within the literature, the CFRPs were able to identify sources of finance through their network ties (Shaw and Carter 2007; Seanor and Meaton 2008; Doherty et al. 2014). This was found to occur through information sharing (Table 7) in the form of signposting to funding opportunities that generated greater awareness of the grant funding landscape among the CFRPs.

For CFRP1 and CFRP2, signposting occurred on a continuous basis through their involvement in FoodCore’s FPWG, CTF, and CFRN. This was achieved with the support of FoodCore, WellNourished, and a local Third Sector Support Agency (TSSA). While FoodCore and WellNourished shared funding opportunities on an ‘as and when’ basis, the TSSA continuously

searched for funding opportunities on behalf of the third sector, reporting back on those found to group members. Across the 3 years embedded within the various communication channels of these groups (Meetings, Email & WhatsApp), funding opportunities were shared on more than 50 occasions. These funding opportunities varied in purpose, including tackling food poverty, the cost-of-living crisis, and the effects of COVID-19, and in size ranged from small grants to large partnership bids. Additionally, group meetings were used to identify who were looking to apply for what funding. FoodCore would subsequently signpost prospective applicants to those involved in allocating said funding to receive application advice and support.

Like CFRP1 and CFRP2, CFRP3 also benefitted from being signposted to funding opportunities by their local TSSA. This TSSA alerted CFRP3 to grant funding which supported with the set-up costs of the CFRP. In addition, CFRP3 were signposted to funding opportunities by a local housing association. Like the TSSA, this housing association signposted CFRP3 to grant funding which supported with the set-up costs of the CFRP.

Despite a reluctance among some SEs to collaborate with the private sector (Herlin 2015), CFRP4 were found to benefit from signposting by collaborating with a profit-seeking organisation (Spear 2006; Peattie and Morley 2008a; Desa 2010) in the form of a local supermarket. The community liaison of this supermarket would forward on details of upcoming grant opportunities to CFRP4 on an ad hoc basis.

The above illustrates FoodCore, WellNourished, TSSAs, housing associations, and supermarkets' role as support agencies, as proposed by Seanor and Meaton (2008). Each representing gatekeepers to funding opportunities (Seanor and Meaton 2008).

5.2.1.3 Materials

Each of the franchisee CFRPs were provided with a variety of materials due to being part of FF's franchise. This included a resource pack containing extensive information surrounding the franchise and FAQs as well as official FF franchise branding. This branding included internal and external signs, branded clothing, and branded handout materials, such as membership forms. In providing licensed signage, FF enabled the CFRPs to add a professional aesthetic to their operations, thus, appearing more like a conventional food retail store. In adding an element of professionalism, this supported the CFRPs to differentiate themselves, especially from foodbanks. For FF, differentiating the CFRPs from foodbanks was crucial to combat the stigma associated with alternate food provision services. This was reinforced by the franchise-branded material, particularly the membership forms. With the adoption of a membership model, and the use of FF-branded membership forms, the CFRPs were able to instil an element of co-ownership as well as a sense of being part of something 'bigger'. This is coupled with removing the stigma associated with assessment forms, as utilised by foodbanks. This illustrates, how, by collaborating with other organisations, the franchisee CFRPs were able to generate increased legitimacy (Patel and Mehta 2011; Granados and Rosli 2020). In addition to increasing legitimacy, these materials enabled the franchisee CFRPs to save on staff time, with SEnt1 stating *"It was really helpful to have all that branding. It is much easier to kind of have stuff already there in templates than going and designing it yourself"*.

Another benefit of the franchise materials was the provision of a standardised operational procedure. In doing so, FF saved the CFRPs from having to design their own operational process via trial and error. Furthermore, this standardisation minimised deviations from a proven model, thus, ensuring the consistent delivery of social value.

5.2.1.4 Transport

The transportation of food represented a prominent cost and logistical challenge for the CFRPs. This resulted in a partnership bid between FoodCore, CFRP1 and CFRP2, targeting funds for a shared electric vehicle. Both CFRP2 and CFRP4 benefitted from support in the transportation of food by collaborating with other organisations (Spear 2006; Sharir and Lerner 2006; Peattie and Morley 2008a; Sodhi and Tang 2011). This “*joint relationship effort*” (Scholten and Schilder 2015, p. 478-479) saw the two CFRPs receive support in collecting food from ReFood Wales, as well as in carrying out deliveries. Both CFRP2 and CFRP4 sourced this support from the third sector (BRASS 2004; GHK 2005; Peattie and Morley 2008a), collaborating with a voluntary transport service and local men’s mental health charity, respectively. CFRP2 were able access further support in the transportation of food by collaborating with the public sector (Desa 2010; Ali et al. 2017b; 2018), with the local probation service carrying out deliveries while their own services were paused.

5.2.1.5 Information Technology

5.2.1.5.1 Aiding Collaboration

Various forms of I.T. were utilised by nodes across the case network, including ‘Microsoft Outlook’, ‘Microsoft Teams’ and ‘Zoom’. In line with the literature, I.T. was found to contribute to SOSCRes primarily through aiding collaboration (Jain et al. 2017). I.T. was found to aid collaboration in two ways, by facilitating: (1) information sharing (Adobor and McMullen 2018; Dubey et al. 2019) and (2) face-to-face communication (Scholten and Schilder 2015), both virtually and in person.

When it came to information sharing, ‘Microsoft Outlook’ represented the primary tool for communicating, with network members leveraging its email capabilities, as an instant messaging service (Jain et al. 2017). Furthermore, Outlook’s calendar feature was routinely used for organising

and scheduling of meetings, thus facilitating in-person face-to-face communication. For example, FoodCore uses Outlook to arrange meetings with members of its FPWG, CTF, and CFRN, including CFRP1, CFRP2, ReFood Wales, WellNourished, the local TSSA, and government agents.

I.T. played a vital role in each of the CFRPs learning about FF's franchise model, and ultimately, in them becoming franchisees. Having mentioned the franchise model during a FPWG meeting, FoodCore invited FF to a subsequent meeting to introduce their franchise model in full, as well as to answer the questions of members. However, being based in the North of England meant attending the usual in-person group meetings was not easy for FF logistically. Consequently, the FPWG, along with FF, arranged for the meeting to be hosted online using video calling software. Thus, enabling both FF and members of the FPWG to attend, despite geographical barriers. This illustrates how I.T. also facilitated virtual face-to-face communication. Alternatively, CFRP3, not part of FoodCore's FPWG, learnt of FF and their franchise model through social media.

Having learnt about the franchise model, and keen to become franchisees, FF were committed to supporting CFRP1, CFRP2 and CFRP3 to set up. Yet, FF were unable to meet with the then potential franchisees regularly in-person, again due to geographical barriers, especially during the various periods of lockdown. In fact, it was only during site visits prior to setting up that the franchisees met with FF in person. Despite geographical barriers, FF supported each of the franchisee CFRPs through the establishment phase by maintaining regular communication with support via email and telephone. For example, CFRP1 maintained weekly phone and email communication with FF, coupled with face-to-face meetings quarterly, which became less frequent as CFRP1 became more established. This led to the launch of CFRP1, CFRP2 and CFRP3. The above supports Ali et al.'s (2017b) claim that the absence of I.T. acts as a barrier to SCRes.

5.2.1.5.1.1 Collaboration during COVID

The absence of I.T. as a barrier to SCRes (Ali et al. 2017b), and therefore SOSCRes, was emphasised by the COVID-19 pandemic, with lockdown and social distancing measures imposed by the UK Government limiting the network's ability to communicate in-person. Thus, without I.T., the ability of network members to collaborate, and therefore generate SOSCRes, would have been hindered significantly. For example, unable to host FPWG, CTF, and CFRN meetings in person, FoodCore ensured the continuation of monthly meetings by migrating meetings online with the support of Microsoft Teams and Zoom. With meetings migrating online, the continued involvement of FPWG, CTF, and CFRN members, namely, CFRP1, CFRP2, ReFood Wales, WellNourished, the TSSA and government agents (Spear 2006; Desa 2010) was also enabled by Microsoft Teams and Zoom. Furthermore, due to the video capabilities of Microsoft Teams and Zoom, this I.T. maintained face-to-face communication despite lockdown measures.

Along with maintaining their involvement in the FPWG, CTF, and CFRN groups, FoodCore, WellNourished and the TSSA leveraged I.T. to continue their other activities during the COVID-19 pandemic. For example, FoodCore used its website, to provide support for people in accessing food during the COVID-19 pandemic, while both WellNourished and the TSSA utilised video calling technology to continue to provide training which otherwise would have been provided in-person.

5.2.1.5.2 Finance Acquisition

In addition to aiding collaboration, I.T. was found to contribute to SOSCRes through supporting the acquisition of grant funding. For example, once set up under the FF franchise, each of the franchisee CFRPs gained access to FF technology which recorded member visits. This

was coupled with a stock valuing tool. This enabled the collection of customer and market data (Shaw and Carter 2007). Hence, I.T. was found to support the measurement of social impact, thus, the acquisition of grant funding which's allocation has become increasingly dependent on performance measurement (BRASS 2004; Nicholls and Cho 2006; Royce 2007; Peattie and Morley 2008a; Desa 2010; Rykaszewski et al. 2013).

5.2.2 Intangible

Like tangible resources, above ('5.2.1 Tangible'), network ties played a significant role in the case network sourcing the intangible resources needed to develop SOSCRes. Close geographical proximity (structural capital), low turnover, involvement in industry associations (cognitive capital), and experience (relational capital) culminated in the presence of social capital across the case network. This was coupled with the presence of trust, with collaboration occurring across the network in the absence of formal agreements Furthermore, these network ties were leveraged by nodes across the network to access a variety of skills and expertise, while the whole network was able to broaden its SC understanding / knowledge.

5.2.2.1 Social Capital

5.2.2.1.1 *Structural Capital*

There was close geographical proximity between the nodes across the case network. Except for FF, each of the stakeholders were located within the region of South Wales. This enabled face-to-face meetings between the network stakeholders, most notably through the FPWG, CTF, and CFRN. Thus, improving communication and knowledge exchange between the network members (Polyviou et al. 2020).

5.2.2.1.2 Cognitive Capital

5.2.2.1.2.1 Low Turnover / Long Employee Tenure

Despite turnover being greater among SEs with hybrid workforces (Liu and Ko 2012, cited in Doherty et al. 2014), none of the CFRPs struggled with turnover. For CFRP3, this was attributed to the range of activities available to volunteers. With individuals able to contribute regardless of whether they wanted to be public facing or were able to drive. While CFRP4 stated it was due to “*a good atmosphere and they [Volunteers] enjoy being there*”, concluding that “*they seem to really get into it*” SEnt4. SEnt4 further attributed low turnover to the nature of the service provided by the CFRPs, stating “*It’s a hand up, not a handout*”. Low turnover could also be attributed to each of the CFRP’s deep-rootedness in the local communities that they served. Such was this deep rootedness, most of the initial set of volunteers were known to the CFRPs prior to being established. While each of the CFRPs were relatively young organisations, they appeared to reap the benefits of long employee tenure, namely closer relationships between colleagues and the accumulation of knowledge and experience (Polyviou et al. 2020), as a result of having worked with many, if not all, of the volunteers on other projects. This low turnover / long employee turnover contributed to the presence of cognitive capital (Polyviou et al. 2020), and therefore, social capital (Johnson et al. 2013; Golgeci and Kuivalainen 2020; Polyviou et al. 2020).

5.2.2.1.2.2 Industry Associations

FoodCore’s FPWG, CTF, and CFRN each represented industry association akin to that of Johnson et al. (2013), supporting information sharing and trust building. In doing so, these ‘industry associations’ represented sources of cognitive capital, and therefore social capital (Johnson et al. 2013; Golgeci and Kuivalainen 2020; Polyviou et al. 2020), by creating shared representation, vision and objectives (Polyviou et al. 2020).

Despite substantial involvement during the establishment phase of CFRP1 and CFRP2, FoodCore, ReFood Wales and WellNourished each said that, as the CFRPs matured, they became less involved in their running and development. However, as members of the FPWG, CTF, and CFRN, each continued to be a support resource (Spear 2006; Peattie and Morley 2008a; Desa 2010; Patel and Mehta 2011) for both CFRP1 and CFRP2.

"We were really fortunate to be part of the FoodCore network, provided a forum for discussions with other projects to take place" – SEnt1.

"That's why FoodCore are really good, because they are really good at kind of bringing us together to have these conversations" – SEnt2.

This primarily occurred during group meetings which provided the opportunity to report and feedback on the activities of CFRP1 and CFRP2. This was strengthened by FoodCore's approach to hosting meetings, whereby all group members, not just CFRPs, are invited to host monthly meetings. Thus, providing hosts an opportunity to showcase their projects, facilitating further feedback.

Like the aforementioned groups, FF's franchise model represented a source of cognitive capital for the franchisee CFRPs. Like FoodCore, ReFood Wales and WellNourished, above, FF became less involved in the franchisees as they became more established. Again, despite this, FF continued to be a support resource (Spear 2006; Peattie and Morley 2008a; Desa 2010; Patel and Mehta 2011) for the franchisees. With each of the franchisees CFRPs able to contact FF as and when required.

5.2.2.1.3 Relational Capital

Experience was found to be a prominent source of relational capital across the case network. With extensive, applicable experience (Spear 2006;

Shaw and Carter 2007; Desa 2010; Von der Weppen and Cochrane 2012; Hockerts 2017; Allen 2020) came considerable personal credibility and dense networks from which a variety of resources were sourced (Sharir and Lerner 2006; Desa 2010; Von der Weppen and Cochrane 2012). For example, through their experience, the social entrepreneurs were able to establish significant ties to the communities local to their CFRPs. This compensated for either not being from the local area (SEnt1; SEnt3; SEnt4) or having moved away for a considerable amount of time (SEnt2). SEnt1's ties to the local community stemmed entirely from his involvement in the charity under which CFRP1 operates. An organisation that, at the time of interview, SEnt1 had been involved with for 5 years in a variety of roles. This included managing an information advice drop-in which is run twice a week. For SEnt3, her ties to the community came about through her voluntary work on various local community projects. SEnt4 attributed her knowledge of the various communities in which CFRP4 operates to the rural craftwork project undertaken by her previous small business. This project provided her with an understanding of "*the way things worked in the valley communities*". While from the local area originally, SEnt2's education and work experience took her out of the country for the best part of a decade. However, through her employment with the local community centre in which CFRP2 operates, a role she had held for a year and a half at the time of interview, SEnt2 was able to re-establish ties to the local area. This included building networks and learning about the community.

These ties to the local community represented a source of resources for the CFRPs (Peattie and Morley 2008a), most notably, unpaid labour (Von der Weppen and Cochrane 2012; White et al. 2018; Social Enterprise UK 2019; White et al. 2022). CFRP1's initial set of volunteers comprised entirely of individuals already known to SEnt1 through their work experience, either as volunteers or service users. It was through SEnt2's involvement in a volunteer group within the local council that CFRP2 were

able to source transport support. Many of the volunteers involved in CFRP3 were recruited by SEnt3 through her earlier COVID relief work. These community ties were also a source of political support (Sharir and Lerner 2006; Spear 2006; Shaw and Carter 2007; Patel and Mehta 2011) for the CFRPs, from both local MPs and Senedd (Welsh Assembly) members.

In addition to accessing human resources, there was evidence that relational capital enabled the CFRPs to source contingencies in the form of back-up sites. While not in the possession of back-up sites themselves, hence not a form redundancy, the CFRPs spoke of how they would be able to capitalise on their network ties to access such locations. For example, SEnt3 stated that, should they need to relocate for any reason:

there's plenty of people that we're linked in with, that, in a crisis, I hope we would be able to reach the network and say, 'Has anybody got a room for X number of weeks while we relocate the CFRP'.

5.2.2.2 Trust

Seanor and Meaton (2008) argue that without trust, SEs will need formal agreements in place to collaborate, otherwise they risk being reduced to working in isolation. The existence of collaboration, coupled with the notable lack of formal agreements across the case network alludes to the existence of trust. In fact, the only formal agreement of note between nodes within the network was the memorandum of understanding between FF and the franchisee CFRPs. Furthermore, SEnt2 spoke of the importance of the local community having trust in the CFRP, stating "*they can see that we're trying to help in a very practical way, it's not tokenistic or just a gesture*". Something which SEnt2 acknowledged can often happen, albeit unintentionally.

5.2.2.3 Skills / Expertise

Contrary to BRASS (2004), none of the CFRPs cited notable gaps in their in-house expertise. While not technically 'in-house', the amalgamation of the necessary skills was found to be a collaborative effort. This was aided by the presence of low turnover (5.2.2.1.2.3 Long Employee Tenure), generating accumulative knowledge and experience (Polyviou et al. 2020).

The social entrepreneur(s) represented a key source of expertise in tackling social issues. Between them, the social entrepreneurs demonstrated a high level of education (Shaw and Carter 2007; Levie and Hart 2011), across a variety of subjects. Despite their qualifications, each of the social entrepreneurs emphasized the importance of experience, as found by Shaw and Carter (2007) and Allen (2020), as well as the extent to which it has helped them in their current roles. In line with their motivations (5.2.1.1.1 The Social Entrepreneur), the social entrepreneurs were seasoned in tackling social issues (Sharir and Lerner 2006; Spear 2006; Shaw and Carter 2007; Desa 2010; Von der Weppen and Cochrane 2012; Hockerts 2017; Allen 2020), with their experience predominantly in the third sector, working on community-based projects (Shaw and Carter 2007). SEnt1's experience was entirely confined to the third sector, working for various charities on community-based projects. This experience was not all poverty alleviation or community development focused, however, consistent throughout their career was an ambition to support people to have a 'voice to act'. SEnt2's third sector experience included working for an arts mental health charity as well as setting up two projects of her own. These were a co-production project for a national mental health charity targeted at young people, which continues to run across universities and schools across London, as well as a community volunteering project based in an arts school. Similarly, SEnt4 had experience working on community-focused projects, namely a sustainable community venues project. Finally, in addition to her full-time role as a

social worker, SEnt3 has been an active member of the church with which CFRP2 is associated since 2014. This church was said to have always focused on what could be done for the community, with SEnt3 regularly involved in their night shelter and toddlers' group as well as various other community activities pre-COVID. Interestingly, food-related, specifically food poverty-related, experience, was minimal among the social entrepreneurs.

"I've never been involved in like a food business before you know, I'd only got my food hygiene level 2 like 2 months before COVID, even though I'd set up a lot of community projects, I've never done anything food based before" – SEnt2.

Only SEnt4 had such prior experience, having previously managed, and been a trustee of, a foodbank. This raises two points; firstly, this contradicts the social entrepreneur's perception that there wasn't a skill gap, secondly, it suggests that value of the social entrepreneur comes from their SE experience / experience tackling social issues generally, rather than in their industry experience.

Contrary to Shaw and Carter (2007), none of the social entrepreneurs had experience setting up a SE. Furthermore, unlike Spear (2006), there was not substantial small business experience among the social entrepreneurs studied, with only SEnt4 having set up and run two small businesses. These were a company delivering gift wrapping, training, and demonstrations, while the second was a consultancy service working to set up social crafting groups as well as supporting small craft businesses. The CFRPs were found to access support in business activities through collaboration with other organisations (Spear 2006; Sharir and Lerner 2006; Peattie and Morley 2008a; Sodhi and Tang 2011), particularly NPOs (BRASS 2004; GHK 2005; Peattie and Morley 2008a; Granados and Rivera 2018; White et al. 2022), most notably in relation to finance and

marketing, areas of expertise found to often be lacking among SEs (BRASS 2004; Peattie and Morley 2008a; Spear et al. 2009; Sodhi and Tang 2011; White et al. 2018; Social Enterprise UK 2019).

SEnt2 represented a key source of financial expertise for CFRP2, having considerable experience in completing grant applications, with bid writing being a constant throughout her career. For example, SEnt2 was responsible for securing the local government grant funding (BRASS 2004; Shaw and Carter 2007) used to purchase commercial fridges.

Like the CFRPs, WellNourished finances their activities through a variety of funding streams. Hence, WellNourished had considerable experience in securing external funding, and represented a source of financial expertise (Spear 2006) for both CFRP1 and CFRP2, providing guidance and support in submitting funding applications. Furthermore, as recipients of grant funding, WellNourished are required by funders to measure the output and social impact of that funding, with different funding bodies requiring different measurements in different timeframes. Consequently, for CFRP1 and CFRP2, WellNourished represented a source of expertise in measuring the output and social impact of activities, as required by funders (BRASS 2004; Nicholls and Cho 2006; Royce 2007; Peattie and Morley 2008a; Desa 2010; Rykaszewski et al. 2013). In addition to WellNourished, the local TSSA was ever available to support group members, including CFRP1 and CFRP2, with the application process.

CFRP4 accessed similar expertise through their ties to and the support they receive from their local social landlord. In fact, at the time of interview, CFRP4 had arranged to spend a day working with this social landlord on some long-term funding applications. This was seen as a mutually beneficial activity, with the social landlord said to be invested in the long-term expansion of the CFRP. This is because they believed that

by providing tenants with inexpensive, high-quality food, they will be better positioned to pay rent.

This again culminated in supporting the CFRPs to reduce the likelihood of funding applications being rejected (Rykaszewski et al. 2013).

Despite marketing being cited as an area of expertise often lacking among SEs (Sodhi and Tang 2011; White et al. 2018; Social Enterprise UK 2019), none of the CFRPs struggled attracting members. Each CFRP quickly surpassed their initial membership targets, with the franchisee CFRPs increasing their membership bases to the point of implementing waiting lists. This is despite a tendency for memberships to decline among SEs (Spear et al. 2009). The marketing of the CFRPs was a multi-stakeholder effort, involving building an online presence, word of mouth, referrals, and clustering.

In adopting FF's franchise model, each of the franchisee CFRPs received support in building their online presence. This included setting up official FF CFRP pages on Facebook and any other social media websites they wished, as well as incorporating them in FF's national website. Unlike the franchisee CFRPs, CFRP4 were solely responsible for setting up their online presence, creating pages on Facebook and Twitter, as well as launching their own website.

The successful expansion of the CFRPs was heavily attributed to word of mouth (Social Enterprise UK 2019).

"Word of mouth makes or breaks you" - SEnt3.

Personal promotion of the CFRPs was predominantly done by members and the local community more generally. This is contrary to Social Enterprise UK (2019), who claimed that personal promotion of SEs is

primarily done by the social entrepreneur. Word of mouth and the social circles of members were integral to sourcing additional members, with the CFRPs regularly welcoming new visitors who reference having a family member / friend / neighbour who is a member. The CFRPs also benefitted from the word of mouth of the local community (GHK 2005; Shaw and Carter 2007; Royce 2007; Patel and Mehta 2011) more generally. Such was the support CFRP1 received from the local community, SEnt1 stated *“if you just flew in into a community, you might not be so, quite so successful because you wouldn't have those relationships”*. SEnt2 and her colleagues contacted representatives of the Bangladeshi, Sudanese, and Somali communities who they had worked with previously, to raise awareness of CFRP2 and to identify families that could benefit from its service. This benefitted word of mouth as community members could explain the project to their friends and family in their first language.

Once established, the CFRPs experienced greater opportunity to collaborate throughout their communities (Spear 2006; Sharir and Lerner 2006; Peattie and Morley 2008a; Sodhi and Tang 2011). Consequently, the CFRPs benefitted from referrals by collaborating with public sector (Spear 2006; Peattie and Morley 2008a; Desa 2010; Patel and Mehta 2011; Ali et al. 2017b; 2018) and non-profit (BRASS 2004; GHK 2005; Peattie and Morley 2008a) organisations (Spear 2006; Sharir and Lerner 2006; Peattie and Morley 2008a; Sodhi and Tang 2011). CFRP1 worked with other organisations to target *“people who wouldn't necessarily come through the door of the centre but might come through say a GP referral or something like that”* (SEnt1). Organisations to have referred members to CFRP1 include the Money Advice Team, Remploy, and a local primary school. Having launched during lockdown, CFRP2 were initially unable to interact with people face-to-face. Hence, they collaborated with 4 partnering organisations whose own activities targeted people in the local community to recruit members. This enabled CFRP2 to target people who would not usually visit the community centre where it is based. CFRP2

also received member referrals from community health visitors. CFRP3 were able to source members through referrals from local housing associations, the local community coordinator, the loneliness and isolation officer and the citizens advice bureau. Alternatively, CFRP4 sourced referrals from a local food bank, who would signpost clients that were believed to be depending on them significantly. CFRP4 could then sign them up as members as well as establish a dialogue around budgeting.

Clustering (Pinch and Sunley 2016) supported the CFRPs with building an online presence, as well as contributing to word of mouth and facilitating referrals. By working with / in existing venues, CFRP4 benefitted from the already established social media channels as well as users of those venues. Similarly, CFRP3's online presence was enhanced by their church affiliation, with the church marketing on behalf of the CFRP through their church Facebook page. Furthermore, CFRP1 received membership referrals from other projects running in the same community centre as them. This illustrates how cohabitation facilitates co-development and trading (GHK 2005; Peattie and Morley 2008a; Pinch and Sunley 2016).

5.2.2.4 Supply Chain Understanding / Knowledge

The generation of SC understanding / knowledge was found to be a collective effort, with several nodes across the network contributing to "*strategic*", "*tactical*" and "*operational knowledge*" (Christopher and Peck 2004, p. 9) as well as understanding of "*the political, cultural and territorial context in which a supply network is embedded*" (Tukamuhabwa et al. 2017, p. 501). This primarily occurred through information sharing (Christopher and Peck 2004; Ponis and Koronis 2012; Wieland and Wallenburg 2013; Scholten and Schilder 2015; Tukamuhabwa et al. 2015; Kamalahmadi and Parast 2016; Ali et al. 2017a; Jain et al. 2017; Tukamuhabwa et al. 2017; Sa et al. 2020), coupled with "*joint relationship effort*" (Scholten and Schilder 2015, p. 478-479).

Various nodes across the network contributed to “*strategic knowledge*” (Christopher and Peck 2004, p. 9) through sharing the latest developments across the alternative food landscape, including trends, forecasts (Johnson et al. 2013; Scholten et al. 2014; Scholten and Schilder 2015; Brusset and Teller 2017) and emerging issues (Christopher and Peck 2004). This primarily occurred through FoodCore’s FPWG, CTF, and CFRN. For example, ReFood Wales regularly shared whether supply and demand were increasing or decreasing, and from whom. For example, ReFood Wales made the network aware of decreases in donations of food from retailers following lockdown. Consequently, ReFood Wales also contributed both to “*tactical knowledge*” (Christopher and Peck 2004, p. 9) in the form of both supply and demand knowledge (Christopher and Peck 2004), and “*operational knowledge*” (Christopher and Peck 2004, p. 9) by providing updates on inventory levels (Scholten et al. 2014), both locally and nationally. ReFood Wales further contributed to supply and demand knowledge (Christopher and Peck 2004) by keeping others across the network informed on who they were working with. This included transparency in terms of the number of organisations they provided food to, who and where, updating as and when new projects emerged. This was coupled with sharing information regarding who they were sourcing food from and which new supply lines they were exploring as part of their work to expand the local Welsh food supply. This saw ReFood Wales contribute to “*operational knowledge*” (Christopher and Peck 2004, p. 9) through broadening knowledge of the physical structure of the SC and the location of members within it (Ponis and Koronis 2012; Johnson et al. 2013; Scholten et al. 2014). Members of the FPWG, CTF, and CFRN also combined to contribute to knowledge of the SC structure. These groups were used to raise awareness of projects across the community food landscape. While embedded in these groups, more than 30 new projects were introduced, many of which also sourced food from ReFood Wales. This was coupled with undertaking mapping exercises of alternative food projects such as lunch clubs, community cafes and food co-operatives.

The CFRPs generated demand knowledge, and therefore, “*tactical knowledge*” (Christopher and Peck 2004, p. 9) by collaborating vertically (Johnson et al. 2013; Leat and Revoredo-Giha 2013; Scholten et al. 2014; Manning and Soon 2016; Ali et al. 2017b; 2018; Hendry et al. 2019) with their members. This was primarily achieved via information sharing (Table 7), facilitated by formalised membership surveys / questionnaires and informal face-to-face conversations. Conducted at varying intervals across the CFRPs, membership surveys / questionnaires assisted the CFRPs in exploring the financial circumstances of their members. Enabling the projects to understand their environment (Patel and Mehta 2011) as well as the needs of its members (Ali et al. 2017b). For example, at the time of interview, SEnt2 referenced a recent survey conducted into the household income of its members, with 107 members said to have witnessed a drop in their income. Similarly, informal conversations with members are used to explore the lived experiences of members, along with their feelings towards the CFRPs. Unlike formal surveys / questionnaires, these conversations took place on a more frequent, often weekly, basis.

In addition to the efforts of the CFRPs, the members themselves contributed to demand knowledge. There are no expectations placed on how often members attend the CFRPs, nor are members required to inform the CFRPs of their plans to attend from one week to the next. This is the same relationship one would have with traditional supermarket, something SEnt4 believes is appreciated by members. Yet, members voluntarily kept the CFRPs informed of their intentions to attend. This, coupled with the presence of waiting lists, enabled the CFRPs to plan accordingly, resulting in little fluctuation in attendance. This was also the case for CFRP2, whose weekly attendance was stable at 100 visits despite the reintroduction of membership fees.

FF contributed to demand knowledge through the provision of franchise software. This “*joint relationship effort*” (Scholten and Schilder 2015, p. 478-479) enabled the franchisee CFRPs to record attendance among members. This represented “*tactical knowledge*” (Christopher and Peck 2004, p. 9) in the form of sales statistics (Johnson et al. 2013; Scholten et al. 2014; Scholten and Schilder 2015; Brusset and Teller 2017). This software also enabled the franchisee CFRPs to identify members who had not attended in several weeks. CFRP3 contact any members to have not attended in 3-4 weeks to, firstly, ensure they are ok and secondly, to find out why they have not been attending. One reason being changes in circumstances, in which case SEnt3 would work to accommodate members, whether that be to change the day they attend or, in the event of isolating due to COVID, carry out deliveries. If members no longer require the CFRP, possibly due to finding full-time employment, their membership will cease, and an opening would be made available to someone on the waiting list.

Members of the FPWG, CTF, and CFRN also contributed to demand knowledge. Government agents (Spear 2006; Desa 2010) and Food bank representatives provided data on the food needs of communities across the city, including insights into the causes of these needs, e.g. reductions in disposable income because of the cost-of-living crisis. For CFRP4, their ties to social landlords contributed to demand knowledge. These social landlords supported CFRP4 to understand “*the priorities, maybe, the way, I suppose, of their clients*”. With many of their clients (residents) also being members of CFRP4’s CFRPs.

The above illustrates how collaborating with public (Desa 2010; Ali et al. 2017b; 2018) and third sector organisations (BRASS 2004; GHK 2005; Peattie and Morley 2008a; Spear 2006; Sharir and Lerner 2006; Sodhi and Tang 2011) facilitated greater understanding of the SC through broadening “*tactical*” knowledge (Christopher and Peck 2004, p. 9). This

culminated in supporting the CFRPs to understand the needs of their consumers (Ali et al. 2017b) as well as the communities they reside in.

FF contributed to contribute to “*operational knowledge*” (Christopher and Peck 2004, p. 9) through the provision of the franchise model. This “*joint relationship effort*” (Scholten and Schilder 2015, p. 478-479) saw FF outline the CFRP model’s organisational processes (Scholten and Schilder 2015) to the franchisee CFRPs through the franchise manual, thus, reducing process ambiguity (Ambulkar et al. 2015).

5.2.3 Redundancy

In line with the conceptual framework for SOSCRes (2.5.4.1.3 Redundancy), multi-sourcing (Tukamuhabwa et al. 2015; Kamalahmadi and Parast 2016; Stone and Rahimifard 2018; Sa et al. 2020; Sawyerr and Harrison 2020), broad job descriptions (Johnson et al. 2013) and a multi-skilled workforce (Kamalahmadi and Parast 2016; Tukamuhabwa et al. 2017) were each a form of redundancy utilised by the CFRPs. Interestingly, while back-up sites (Sheffi and Rice 2005; Juttner and Maklan 2011; Sa et al. 2020; Sawyerr and Harrison 2020) and alternative modes and routes of transportation (Sawyerr and Harrison 2020) were deemed inappropriate forms of redundancy for SOSCRes due to the financial costs involved, there was evidence of each within the case network. An additional form of redundancy was identified in waiting lists.

5.2.3.1 Holding of Buffer / Safety Stock

The holding of buffer / safety stock (Table 9), as expected, was minimal across the case network. This was attributable to the costs associated, which would compromise the financial sustainability of the CFRPs, coupled with being a PPSC. On some occasions, when possible, the CFRPs froze produce for the following day. Surplus food that cannot be frozen is

integrated into other projects and / or given away for free. For example, CFRP2 would give additional food to the members who did attend.

5.2.3.2 Multi-sourcing

Even as their primary supplier, ReFood Wales facilitated multi-sourcing (Tukamuhabwa et al. 2015; Kamalahmadi and Parast 2016; Stone and Rahimifard 2018; Sa et al. 2020; Sawyerr and Harrison 2020) among the CFRPs, through providing access to additional food redistribution channels. This included enabling intra-network sharing of ReFood Wales food, with CFRP2 part of a WhatsApp group set up by ReFood Wales for recipients to redistribute food in the event of overstocking.

While each of the CFRFs relied heavily on ReFood Wales as their primary supplier, they each demonstrated further multi-sourcing (Tukamuhabwa et al. 2015; Kamalahmadi and Parast 2016; Stone and Rahimifard 2018; Sa et al. 2020; Sawyerr and Harrison 2020) beyond that sourced from or with the support of ReFood Wales. This was done by capitalising on ties to both non-and-for-profit organisations (BRASS 2004; GHK 2005; Spear 2006; Peattie and Morley 2008a; Desa 2010).

Identified through their ties to ReFood Wales, three of the four CFRPs (CFRP1; CFRP3; CFRP4) sourced additional food from 'ReFood2Wales'. While this service operated under the 'ReFood Wales' banner, it represented a form of multi-sourcing as the service is ran independently from ReFood Wales, in what could be described as something of a 'Third Sector Spinout'. Like ReFood Wales, this service also involved the redistribution of warped, bruised and / or otherwise reduced food items that are yet to reach their use-by date. However, unlike ReFood Wales, this produce is sourced from supermarkets. This illustrates how the CFRPs were able to identify and source additional produce by collaborating with fellow SEs (Peattie and Morley 2008a; Sodhi and Tang 2011).

CFRP1 diversified their supply by sourcing fruit and veg from a local micro-business run by residents. This micro business sources produce from a fruit and veg market, brings it to CFRP1 and sells it on for “a very *reasonable price*”. Like CFRP1, CFRP2 also supplemented their fruit and veg supply using local suppliers. This was coupled with sourcing halal meat from a local butcher. Interestingly, CFRP2 also supplemented their supply through delegating multi-sourcing to their members. This was achieved by giving members growing seeds, empowering them to supplement their supply through growing their own produce. In doing so, CFRP2 could be seen to be turning relatively passive consumers into co-producers, thus, extending the concept of resilience to the consumers by helping them to establish their own personal alternative supply.

For CFRP3, while ReFood Wales represented their only paid supplier, multi-sourcing was present through donations from local people and businesses, which are then integrated into their offerings. To be able to accept food donations, all produce must be in date and undamaged. A local, well-known coffee shop regularly donates left over sandwiches, paninis, and cakes on a Friday evening. This is coupled with a local, well-known supermarket making donations from time-to-time due to insufficient storage space and costs associated with landfill disposal. During the pandemic, one local high street retailer put out a collection box which customers could contribute to during their shop. Furthermore, CFRP3 benefits from ties to local allotment owners, whose donations are incorporated into the CFRP’s free fruit and vegetables offerings. Like CFRP3, CFRP4 also benefitted from ties to local supermarkets, who would supply them with items that are nearing their best before date. This included a “*strong*” relationship with the community liaison of one supermarket, resulting in an ability to reach out anytime a CFRP had a specific need SEnt4. CFRP4 similarly benefitted from ties to several local food co-operatives. Furthermore, CFRP4 discussed working in collaboration with the local social landlord to supplement their food supply

by identifying under-utilised areas to launch growing projects. Like ReFood Wales, CFRP4 spoke of leveraging its own CFRPs as a network to support one another. Should one of CFRP4's CFRPs have a spike in demand, and another has surplus, CFRP4 organises and facilitates a transfer between the two. This is done whilst ensuring that the providing CFRP is reimbursed equal to the value of the food according to ReFood Wales.

Finally, both CFRP1 and CFRP4 cited how local supermarkets also represented a 'last resort' supply avenue. Should there be a notable gap between supply and demand, these CFRPs would purchase additional food at retail price. This represented a 'last resort' for the CFRPs as in doing so jeopardised the business model, with the higher costs associated with doing so meaning less available to cover other operating costs. Due to this risk, the CFRN has begun exploring the possibility of multiple CFRPs (including CFRP1 and CFRP2) bulk ordering food from wholesalers, which would result in cost benefits for each of the CFRPs involved.

The CFRPs motivation for adopting a multi-sourcing strategy was, as suggested by Ali et al. (2017b), due to ReFood Wales's inability to meet their quality demands. With SEnt1 referencing the variability of supply from week to week, described as "*a lucky dip*", which compromised their ability to provide the desired consistency of healthy options.

FF were found to be conducive to the presence of multi-sourcing among the franchisee in advising franchisees to source 30% of their food supply elsewhere to ReFood Wales. This, coupled with their investment in the development of CFRP1 as the network's first CFRP, saw FoodCore facilitate multi-sourcing as they sought out additional supply options for CFRP1, including a local salad grower. FoodCore further facilitated multi-sourcing (Tukamuhabwa et al. 2015; Kamalahmadi and Parast 2016; Stone and Rahimifard 2018; Sa et al. 2020; Sawyerr and Harrison 2020) for both

CFRP1 and CFRP2 through the formulation of their FPWG, CTF, and CFRN. As members of these groups, both CFRP1 and CFRP2 were able to access donations from the local foodbank as well as from other CFRPs. With it seen as commonplace for such projects to post in the group WhatsApp advertising surplus produce free of charge.

5.2.3.3 Workforce Redundancy

CFRP1, CFRP2 and CFRP4 each adopted broad job descriptions (Johnson et al. 2013) for its volunteers (For CFRP4, this was except for the team leaders). This meant that, while the activities undertaken by volunteers were similar across the CFRPs (5.2.1.1.3 Volunteers (Unpaid Labour)), they were dependent on what the volunteers wanted to do that week. This also enabled different tasks as and when required. Furthermore, a multi-skilled workforce (Juttner and Maklan 2011; Sawyerr and Harrison 2020) was present among the CFRPs through the utilisation of broad job descriptions (5.2.3.3 Broad Job Descriptions) as well as a willingness among volunteers to undertake any roles as and when required.

5.2.3.4 Alternative Modes and Routes of Transportation

Redundancy was also present across the case network in the form of alternative modes and routes of transport (Sawyerr and Harrison 2020). While ReFood Wales carried out deliveries to each of the CFRPs, they also established collection points whereby multiple projects could go and collect their orders from. A similar approach was adopted by CFRP4 whereby orders for several of their CFRPs would be delivered to one of their CFRPs, who would then disseminate it among the other CFRPs. Furthermore, the personal vehicles of volunteers were used at times to collect additional supplies when the opportunity arose. For CFRP4, this was coupled with a local men's mental health charity, who provided access to a van which was used to collect additional food.

5.2.3.5 Waiting Lists

Each of the franchisee CFRPs operates with a waiting list. While this could be attributed to both an inability and reluctance to meet a greater demand, the CFRPs appeared to view the individuals on these waiting lists as a form of redundancy, whereby, should attendance drop significantly for whatever reason, those on the waiting list could be invited to attend in their place.

5.3 Structure

5.3.1 Configuration

5.3.1.1 Scope

There was limited geographical scope across the case network. Each of the CFRPs are situated in areas of high deprivation (IFF Research 2005; Harding 2007; Seanor and Meaton 2008; Social Enterprise UK 2019), with their social and commercial activities tied to those areas (Shaw and Carter 2007).

5.3.1.2 Density

Node density was high across the case network (Craighead et al. 2007; Falasca et al. 2008; Chowdhury and Quaddus 2017). With limited geographical scope (5.3.1.1 Scope), each of the CFRPs were situated local to both their target markets and primary supplier ReFood Wales. FF were conducive to the presence of high density through the parameters they set as part of their franchise model. To become a member of an FF franchisee, individuals must be a local resident. Furthermore, FF insisted that franchisees were established within the vicinity of a ReFood, as the franchise's primary supplier, to ensure access to a sustainable food supply. Free from these franchise constraints, CFRP4 placed no residential restrictions on membership. Membership is open to anyone, with members able to attend any of CFRP4's CFRPs. Yet, like the franchisee

CFRPs, each of CFRP4's CFRPs were located within their target communities, as well as being local to ReFood Wales. In addition to ReFood Wales, each of the CFRPs diversified their supply through local suppliers, thereby increasing node density. While this could be attributed to the perishable goods orientation of the SC (Aboah et al. 2019), along with suppliers, each of the CFRP's public, private and third sector collaborators, except for FF, were local to them. This saw the networks which the CFRPs relied on tied to their location (Shaw and Carter 2007; Granados and Rivera 2018; White et al. 2022), thus, also demonstrating high node density.

Like close geographical proximity (5.2.2.1.1.1 Close Geographical Proximity), this high node density facilitated face-to-face exchanges. These face-to-face exchanges are positively associated with the presence of trust and social capital, especially when parties were close geographically (Seanor and Meaton 2008). Therefore, high node density (Craighead et al. 2007; Falasca et al. 2008; Chowdhury and Quaddus 2017), facilitated collaboration through trust building and the creation of social capital. Furthermore, high density positively impacted on both transport (5.2.1.4 Transport) and finance (5.2.1.2 Finance). This is because high density meant less distance to travel within the SC and subsequently less transportation costs (Wicher and Lenort 2012).

5.3.1.3 Complexity

Node complexity was found to be higher within the case network than hypothesised (2.5.4.2.1 Configuration). It was hypothesised that with a greater reliance on collaboration it is imperative that node complexity is kept to a minimum to facilitate inter-organisational trust, commitment, and cooperation (Chowdhury et al. 2019), and that this should be balanced against increased node complexity through multi-sourcing. While these points still stand, this original hypothesis failed to take into consideration that the greater reliance on collaboration will increase

complexity, except in the unlikely event that all the necessary support can be sourced from a single, or small number of collaborators.

With the target beneficiaries of their social mission and the target market of their commercial activities the same, the CFRPs only had one forward flow: to its members. As hypothesised, some node complexity was sacrificed through multi-sourcing (5.2.3.2 Multi-sourcing) with each of the CFRPs have a small number of backward flows to supplies including ReFood Wales. However, there were found to be more within-tier flows than hypothesised. This was attributable to being connected to other CFRPs through FF's franchise, the FPWG, CTF, and CFRN as well as the importance of shared learning. While high node complexity can compromise inter-organisational trust, commitment, and cooperation (Chowdhury et al. 2019), this was not found to be the case here. This could be because of the common goal of tackling food poverty which led the CFRPs to join the franchise / aforementioned groups in the first place.

5.3.1.4 Criticality

ReFood Wales, as the primary supplier to each of the CFRPs, represented a critical node within the case network. Node criticality was high given that the CFRPs relied on ReFood Wales to operate, and, as a food redistribution charity, there were no obvious alternatives. Despite this, node criticality was reduced with each of the CFRPs engaging in multi-sourcing (5.2.3.2 Multi-sourcing), at the cost of node density and complexity.

5.3.1.5 Clustering

Another element of structural configuration found to be conducive to the development of SOSCRes was clustering. Each of the CFRPs adopted a clustering (Pinch and Sunley 2016) approach to their premises, situated in multi-purpose buildings alongside other projects. Both CFRP1 and CFRP2

operate out of community centres, while CFRP3 are based in a church. Likewise, each of CFRP4's CFRPs were set up in existing premises alongside other organisations operating within their communities. In discussing the identification of premises for CFRP4's CFRPs, SEnt4 shared the one and only instance in which one of their CFRPs was set up then suddenly ceased to exist. This was attributed to where the CFRP was located, being based in the premises of a charity. While it was acknowledged that some of the venues used by their CFRPs are charity, most are community centres. In this case, it was not a community centre, rather a small building occupied by a specific charity supporting families with children with disabilities. Unfortunately, following a failed funding application, this charity's survival was thrown into uncertainty, resulting in the decision to cut back on activities, including the running of the CFRP. SEnt4 passionately believes that *"had that been a community centre in the traditional sense of the word, where you've got a venue, you've got lots of different clubs and organizations using it. I don't think that would have happened"*. This was said to be a valuable lesson for CFRP4 in identifying which types of venues are compatible with the CFRP model, stating *"a multi-use venue is definitely better than one that is just used by one charity or organization"*. Collaboration and resource-sharing strategies are generally seen as a source of strength, both within this research and the SE literature more generally, however, this raises an issue whereby both can also be a source of vulnerability.

With clustering (Pinch and Sunley 2016), the CFRPs were also able to mitigate a reluctance among funding bodies to support the acquisition of premises (BRASS 2004; Sharir and Lerner 2006). Furthermore, as within the literature, through cohabitation, the CFRPs benefitted from shared utility costs (GHK 2005; Peattie and Morley 2008a). For example, the church, from which CFRP3 operates, covers the utility costs associated with the CFRPs by way of contribution. In clustering, the CFRPs adopted an approach to premises acquisition akin to Patel and Mehta's (2011)

optimisation through recycling. This involved the CFRPs inhabiting old and / or dilapidated buildings. For example, CFRP4 targeted unused buildings throughout the borough, particularly those with kitchen facilities. In doing so, CFRP4 were able alleviate a dependency on grant funding. This illustrates how optimising via recycling can achieve both economic and environmental goals, as suggested by Patel and Mehta (2011).

5.3.2 Visibility

SC visibility was primarily achieved through vertical collaboration (Johnson et al. 2013; Leat and Revoredo-Giha 2013; Scholten et al. 2014; Manning and Soon 2016; Ali et al. 2017b; 2018; Hendry et al. 2019) between the CFRPs and their primary supplier ReFood Wales, in the form of information sharing (Christopher and Peck 2004; Ponis and Koronis 2012; Wieland and Wallenburg 2013; Scholten and Schilder 2015; Tukamuhabwa et al. 2015; Kamalahmadi and Parast 2016; Ali et al. 2017a; Jain et al. 2017; Tukamuhabwa et al. 2017; Sa et al. 2020). ReFood Wales maintained regular communication with, and encouraged regular feedback from, the CFRPs. This was reiterated by each of the CFRPs, who reported being in regular communication with ReFood Wales via both telephone and email, as well as during deliveries, with SEnt2 emphasising the value of, when ringing ReFood Wales, speaking to someone on the other end of the line that she knows personally. This was opposed to speaking to a faceless organisation. Consequently, the CFRPs relationship with ReFood Wales was described as “close” (SEnt2), “excellent” (SEnt3) and “very good” (SEnt4). ReFood Wales demonstrated operational transparency through their contribution to SC understanding / knowledge, specifically supply knowledge (5.2.2.4 SC Understanding / Knowledge). This enabled real-time monitoring of inventory along the SC (Blackhurst et al. 2011; Ali et al. 2017a; Jain et al. 2017; Stone and Rahimifard 2018; Aboah et al. 2019).

SC visibility also benefitted from collaboration with other non-profit (BRASS 2004; GHK 2005; Peattie and Morley 2008a) and public sector (Desa 2010; Ali et al. 2017b; 2018) organisations (Spear 2006; Sharir and Lerner 2006; Peattie and Morley 2008a; Sodhi and Tang 2011) external to the SC. This included government agents (Spear 2006; Desa 2010) such as local council representatives, as well as FoodCore, WellNourished and the local foodbank keeping both ReFood Wales and the CFRPs informed about the latest developments across the community food landscape. This was particularly crucial given then the COVID-19 pandemic, when there were large scale disruptions to the food SC to the UK.

5.3.3 Velocity

Velocity was evident among the CFRPs through the amount of time inventory remained idle within the CFRPs (Christopher and Peck 2004), with there being a one-day turnaround between receiving produce from ReFood Wales and handing it out to members. This was due to the perishable nature of the products as well as limited ability to freeze surpluses. Velocity was also evident through reduced in-bound times (Christopher and Peck 2004). Reduced in-bound times were achieved through local sourcing (Saenz et al. 2018) with ReFood Wales, as well as through each of the CFRP's alternative suppliers all being local. Velocity was also enhanced by the presence of high node density, which again reduced delivery times (Wicher and Lenort 2012). This was significant due to the perishable nature of the goods being handled across the network.

5.4 Management / Decision-making

5.4.1 Governance

While the social entrepreneurs were central to the establishment of their CFRPs (BRASS 2004; Sharir and Lerner 2006; Spear 2006; Harding 2007; Shaw and Carter 2007; Vega and Kidwell 2007; Peattie and Morley

2008a; 2008b; Galera and Borzaga 2009; Desa 2010; Von der Weppen and Cochrane 2012; Rykaszewski et al. 2013; Young and Lecy 2014), once established, the running of the CFRPs was a collective effort. This included both horizontal (Johnson et al. 2013; Leat and Revoredo-Giha 2013; Scholten et al. 2014; Manning and Soon 2016; Hendry et al. 2019) and vertical (Johnson et al. 2013; Leat and Revoredo-Giha 2013; Scholten et al. 2014; Manning and Soon 2016; Ali et al. 2017b; 2018; Hendry et al. 2019) collaboration involving the social entrepreneurs, employees, volunteers, the members they serve, and the local community.

5.4.1.1 Management Teams / Committee Boards

Each of the social entrepreneurs was embedded in a management team / committee board (Sharir and Lerner 2006; Islam 2007; Royce 2007; Shaw and Carter 2007; Peattie and Morley 2008a; Von der Weppen and Cochrane 2012; Rykaszewski et al. 2013; Cornforth 2014). Sent1 is part of the management team for the charity under which CFRP1 operates. While this management team had limited involvement in CFRP1, they were said to be available to provide management support as and when needed (SEnt1). The running of CFRP2 was overseen by a management team consisting of the CFRP director, CFRP coordinator and Sent2. The CFRP coordinator is responsible for overseeing day-to-day operations and membership, while the CFRP director oversees operations beyond the day-to-day, such as site management. Sent2, at the time of interview, was responsible for development and networking. Due to their church affiliation, CFRP3 was overseen by a group of church elders. Like the management team involved in CFRP1, church elders are not overly involved in the day-to-day running of CFRP3, but available to provide support if required. This was complemented by 2 coordinators (including Sent3) who shared responsibility for the day-to-day management of CFRP3. CFRP4 is overseen by a board of 5 directors. This is made up of both Sent4 and her husband, two team leaders (who each run a CFRP4 CFRP) and a volunteer with a van who is responsible for collecting

supplies from ReFood Wales each week. The board is responsible for managing and supporting each of the CFRP4 CFRPs, holding regular board of directors' meetings during which actions are discussed and must be agreed upon before being implemented. These small management teams also represented a source of structural capital (Polyviou et al. 2020) and therefore, social capital (5.2.2.1 Social Capital) (Golgeci and Kuivalainen 2020; Polyviou et al. 2020), enabling the CFRPs to organise and respond quickly. Thus, also supporting velocity (5.3.3 Velocity).

5.4.1.2 Delegated Responsibility

5.4.1.2.1 Volunteers

Through management teams / committee boards, SEs can delegate responsibility (Rykaszewski et al. 2013). However, responsibility among the CFRPs is primarily delegated to volunteers, opposed to members of the management team / committee board. Consequently, volunteers were found to have considerable input in the management and day-to-day running of their respective CFRPs (Social Enterprise UK 2019). Sent1 emphasised the volunteer-led nature of the CFRPs, stating that the role of paid staff became about supporting volunteers, who can shape the CFRP. Like CFRP1, CFRP2 volunteers were able to shape the CFRP, with Sent2 stating:

"If they've got an idea that they think will benefit the community in terms of wellbeing, or any other way really, as long as people agree, you know, it's not too out there or too wild, or we can see how it could be harmful, then we'll probably give it a go" – Sent2.

For CFRP4, volunteer input was significant, with team leaders being responsible for running their respective CFRPs. This is coupled with CFRP4 "network meetings" which are held every 6 weeks with the objective of bringing everybody together (SEnt4). These meetings are attended by

team leaders, enabling CFRP4 to collect regular feedback, while team leaders were consulted on topics such as training. Furthermore, volunteers made up most of the board of directors. The low turnover of volunteers among the CFRPs (5.2.2.1.2.1 Long Employee Tenure) could be attributed to this distributed responsibility (Molyneaux 2004; Royce 2007), which made volunteers feel valued and generated greater commitment and loyalty (Patel and Mehta 2011; Von der Weppen and Cochrane 2012).

The collaborative management of the CFRPs by the social entrepreneurs and both paid-and-unpaid labour created a flat hierarchy across the CFRPs. This flat hierarchy also contributed to the presence of structural capital (Polyviou et al. 2020), and therefore, social capital (5.2.2.1 Social Capital) (Johnson et al. 2013; Golgeci and Kuivalainen 2020; Polyviou et al. 2020) by enabling faster decision making and response to environmental changes (Polyviou et al. 2020). Consequently, this distributed decision-making and resulting flat hierarchy enhanced velocity (5.3.3 Velocity) (Sawyer and Harrison 2020) by facilitating swifter decision-making (Polyviou et al. 2020).

5.4.1.2.2 Members

The involvement of volunteers in the management of the CFRPs meant that members were also involved in the management of the CFRPs (Shaw and Carter 2007; Von der Weppen and Cochrane 2012; Social Enterprise UK 2019) and their decision-making (Social Enterprise UK 2019). Members had further input with each CFRP collecting regular feedback, primarily through surveys / questionnaires. These surveys / questionnaires explored member's opinion of the CFRPs, what they do well, what could be improved and what they would like to see in the future. This feedback was taken seriously by the CFRPs.

"We take all their comments seriously" – SEnt4.

For example, at launch CFRP3 solely opened on Tuesdays. However, with interest growing in the CFRP, SEnt3 communicated with the local community to gauge interest in a potential Friday service. With sufficient demand identified, and ReFood Wales able to make an additional delivery, CFRP3 introduced a Friday service. This enabled CFRP3 to meet the needs of contrasting demographics within the community. Tuesday mornings allowed parents to attend following the morning school run, while Friday evenings were convenient for members in employment to visit on their way home from work. Retired and / or furloughed members can attend at a time convenient to them across those two days. For CFRP4, there was an indication among members of a preference for choice around the service they receive. Hence, CFRP4 spoke of doing what they could to give members as much choice as possible, drawing comparisons to the presence of choice in a traditional shopping experience.

While survey / questionnaire feedback proved valuable, the most valuable feedback came via face-to-face conversations as members did their weekly shop. With members providing feedback to both staff and volunteers, debriefs are held at the end of each session so this feedback can be shared with all those involved. A recent example shared regarded an issue of people queue jumping. At the time of interview, CFRP1 were exploring ways to improve their numbering system, ensuring members receive their number on arrival as well as minimising rushing. Like team leaders and volunteers, members were also invited to the “*network meetings*” held every 6 weeks (SEnt4). Furthermore, as a community interest company (CIC), CFRP4 holds annual AGM meetings to which all members are invited to attend and contribute. The CFRPs ability to receive regular face-to-face feedback from members was severely hindered by the COVID-19 pandemic. This resulted in an increased emphasis on conducting surveys as well as phone calls with the membership base.

5.4.1.2.3 Local Communities

With membership intrinsically linked to the communities local to the CFRPs, these communities were also involved in the decision-making of the CFRPs (Shaw and Carter 2007; Social Enterprise UK 2019). This again illustrates how the CFRPs answered calls for SEs to be “*locally tuned and responsive*” (Patel and Mehta 2011, p. 226), so as to understand the needs of their target market. Furthermore, this helped build trust among their local communities, with trust being positively influenced by working with the local community and local accountability (Royce 2007; Seanor and Meaton 2008).

5.4.1.3 Multi-Stakeholder Governance Structure

The presence of management teams / committee boards, coupled with delegated responsibility among volunteers, members and the local community culminated in the presence of a multi-stakeholder governance structure among the CFRPs, involving volunteers (Social Enterprise UK 2019), beneficiaries (members) (Shaw and Carter 2007; Spear et al. 2009; Von der Weppen and Cochrane 2012; Social Enterprise UK 2019) and the local community (Shaw and Carter 2007; Social Enterprise UK 2019). This increased credibility among public opinion (Von der Weppen and Cochrane 2012) and generated further social capital (Spear et al. 2009). Furthermore, delegated responsibility and a multi-stakeholder governance structure enabled the CFRPs to mitigate against over-invested social entrepreneurs (Rykaszewski et al. 2013). Three of the four social entrepreneurs (SEnt1; SEnt2; SEnt3) reduced their involvement in their CFRP as it matured. For SEnt1, his role was “*to set it up, and then move on to other projects*”. Hence, as staff and volunteers became increasingly confident in their roles, SEnt1 reduced his involvement in the day-to-day operations of the CFRP, asserting the need for self-governance. Instead, focusing on CFRP1 from a strategic perspective, as well as managing

relationships with ReFood Wales and FF. Similarly, as CFRP2 evolved, SEnt2's role became geared towards development, opposed to service delivery. SEnt3 was ever-present for CFRP3 while volunteers were being trained up. However, once trained, SEnt3 was able to reduce her involvement in day-to-day operations, citing the toll her involvement in CFRP3 had taken on her alongside her fulltime employment. Thus, contrary to Rykaszewski et al. (2013), the social entrepreneurs were not found to be overly invested in the day-to-day running and decision making of their CFRPs, nor did they appear to cause bottlenecks. This was coupled with reducing the uncertainty that would accompany their departure (Von der Weppen and Cochrane 2012), with SEnt2 eventually stepping away altogether. This also suggests that through a multi-stakeholder governance structure, the CFRPs could overcome any difficulties they may face in finding the required skills, values, and experience in a single social entrepreneur (Sharir and Lerner 2006; Shaw and Carter 2007; Peattie and Morley 2008a; Von der Weppen and Cochrane 2012; Rykaszewski et al. 2013). Unlike the other social entrepreneurs, SEnt4 had consistent significant involvement in CFRP4's CFRPs. Even as an executive director, SEnt4 is still involved in the day-to-day running of the CFRPs, assisting with the transportations of food and supporting volunteers. Furthermore, they were responsible for training team leaders.

The presence of a multi-stakeholder governance structure supports the claim that, despite emphasis throughout social entrepreneurship literature being on the individual (Spear 2006), in reality, *"within a social context, entrepreneurship may be a collective rather than individual activity"* (Shaw and Carter 2007, p. 430), grounded in both *"distributed entrepreneurship"* and *"circles of entrepreneurial activity"*, involving a number of stakeholders, both internally and externally (Spear 2006, p. 408).

5.4.2 Human Resource Management

5.4.2.1 Recruitment

With minimal paid labour among the CFRPs, the focus of recruitment tended to be on volunteers. Contrary to the literature (BRASS 2004; Royce 2007; Von der Weppen and Cochrane 2012; Social Enterprise UK 2019; Roumpi et al. 2020), none of the CFRPs had trouble filling vacancies, paid or unpaid.

"We didn't have to try very hard to get volunteers, people wanted to help out" – SEnt2.

"I think in some of the CFRPs, there are almost too many volunteers" – SEnt4.

This is despite the CFRPs being situated in areas of high deprivation (Social Enterprise UK 2019). These are areas where SEs are said to experience the greatest difficulty filling vacancies (Social Enterprise UK 2019).

Those interested in volunteering for the CFRPs are required to fill out a volunteer application form. For the franchisee CFRPs, this was done with the support of FF, who provided them with a formal FF volunteer application form. Alternatively, CFRP4 had its own structured volunteer package created by SEnt4, including a formalised application process.

Contrary to Royce (2007), who found similar methods of candidate selection among SEs to that in the public and private sector, the CFRPs prioritised an individual's values over qualifications.

"It's not about qualifications. It's about what's in your heart, really" – SEnt3.

"Somebody who is, you know, presentable and reasonably tidy and has some empathy really, for what they're doing and understanding. I suppose, gets the ethos of what we're trying to do" – SEnt4.

Despite their church affiliations, CFRP3 did not require members of its workforce to hold the same beliefs, or even have a faith. Instead, believing that everybody contributes something different. For SEnt3, it was about showing willingness and commitment. Alternatively, SEnt2 spoke of looking for people that were going to make others feel welcome and part of something, and who understood the wider vision of the CFRP. Consequently, the CFRPs leveraged their social mission to attract staff (Desa 2010; Von der Weppen and Cochrane 2012; Doherty et al. 2014). This provides another explanation for the low turnover among the CFRPs (5.2.2.1.2.1 Long Employee Tenure), with shared vision creating loyalty (Von der Weppen and Cochrane 2012). Each of the CFRPs displayed a preference for hiring from the local population (Royce 2007; Von der Weppen and Cochrane 2012; White et al. 2018; Social Enterprise UK 2019; White et al. 2022). All but one of the CFRPs sourced their entire workforce from their local community (Social Enterprise UK 2019), while CFRP4 referenced a single volunteer from outside the local community. This preference for recruiting locally was coupled with a preference for recruiting from the membership base. For the franchisee CFRPs, this could be attributed, in part, to FF, who encourage franchisees to recruit volunteers from its membership base as part of its community ethos. However, this strategy is also adopted by CFRP4. Instead, recruiting from the membership base was desirable from a marketing perspective, as volunteers were able to speak from experience to visitors of the benefits of becoming a member.

"The best kind of way of communicating what a project's about is often through the voices of people involved" – SEnt1.

An emphasis on members becoming volunteers meant that recruitment occurred organically. Often through engaging with members during their weekly visits to the CFRPs. The utilisation of employees and volunteers from the local community appeared to aid with the prevention of mission drift (Von der Weppen and Cochrane 2012), through the presence of a team of staff and volunteers who were “*passionate about, and in touch with, the agenda*” (SEnt1). This was coupled with the instilling of accountability among members through their dual role as volunteers (Ebrahim et al. 2014). Furthermore, members becoming volunteers enhanced velocity through enabling faster feedback.

In addition to sourcing volunteers from the membership base, each of the CFRPs received recruitment support from other organisations (Spear 2006; Sharir and Lerner 2006; Peattie and Morley 2008a; Sodhi and Tang 2011), particularly NPOs (BRASS 2004; GHK 2005; Peattie and Morley 2008a; Granados and Rivera 2018; White et al. 2022). CFRP1 benefitted from volunteer referrals through their ties to two employment charities. CFRP2 received referrals from local prescribers, who would contact them having identified potential volunteers, e.g., individuals suffering from isolation. In addition to volunteers, SEnt2 spoke about how working with other organisations (Spear 2006; Sharir and Lerner 2006; Peattie and Morley 2008a; Sodhi and Tang 2011) inadvertently supported CFRP2 in identifying a suitable candidate for the position of CFRP coordinator. With the successful candidate having been involved in CFRP2 through their employment with another organisation. Both CFRP1 and CFRP2 received recruitment support through their involvement in FoodCore’s FPWG, CTF, and CFRN, with meetings used to advertise and share job vacancies as well as to source volunteers. This was supported by the involvement of the local TSSA, whose voluntary team works to identify organisations in need of volunteers, having linked up with and supported CFRP1. Recruiting volunteers provided little difficulty for CFRP3 due to their

church affiliation, with their initial set of volunteers being part of the church family. As membership grew, several members who had no prior links to the church then began volunteering with CFRP3.

5.4.2.2 Training

The training of the CFRP's workforce, both paid and unpaid, was again a collaborative effort, involving a range of other non-profit (BRASS 2004; GHK 2005; Peattie and Morley 2008a) organisations (Spear 2006; Sharir and Lerner 2006; Peattie and Morley 2008a; Sodhi and Tang 2011). The training below can be defined as anticipative learning occurring through formal training and collaboration (Scholten et al. 2019).

Each of the CFRPs accessed training by collaborating vertically (Johnson et al. 2013; Leat and Revoredo-Giha 2013; Scholten et al. 2014; Manning and Soon 2016; Ali et al. 2017b; 2018; Hendry et al. 2019) with ReFood Wales. As a food redistribution model, ReFood Wales retained a level of responsibility over the food provided to the CFRPs. This meant that the CFRPs had a responsibility to ReFood Wales to store produce appropriately and abide by best before and use by dates. This led ReFood Wales to provide training in the safe storage, handling, and distribution of food to the initial set of staff and volunteers. This included fridge and freezer management, cleaning schedules and temperature recording routines, as well as ensuring the necessary people have Level 2 Food Hygiene and environmental health certification.

The franchisee CFRPs received training as part of the franchise model. FF provided management training to the social entrepreneurs of each of the franchisee CFRPs. Furthermore, FF provides operational training, including health and safety training, to the initial set of staff and volunteers at each of the franchisee CFRPs. This training was reiterated in a volunteer manual which is provided to all subsequent volunteers. Once an application process is complete, prospective volunteers attend the CFRP

for a trial shift where they are taken through the volunteer manual, as provided by FF, as well as receiving initial training in line with guidance, again provided by FF, including health and safety training. Guidance and support in accessing additional training and qualifications, including Food Hygiene Level 2, is also provided by FF on an ongoing basis. Alternatively, CFRP4 has its own formal training package, created by SEnt4. SEnt4 is responsible for training team leaders across the CFRP4 CFRPs, who are then responsible for training volunteers in their respective CFRPs using a CFRP4-supplied training package kept on site. Furthermore, SEnt4, a fellow director and a CFRP team leader undertook community nutrition skills course with the local health trust.

Three of the four CFRPs (CFRP1; CFRP2; CFRP3) accessed training from their local TSSA who offer a variety of online courses and guidance to support the third sector. Both CFRP1 and CFRP2 gained access to numerous training opportunities across a variety of topics from their TSSA over the 3 years embedded within the case network. This included 'Food Safety in Retail Level 2' and best practices around volunteering and safeguarding. Furthermore, this TSSA co-ordinated the development of a training package for FoodCore's CFRN. This included different modules so staff and volunteers could tailor the training to their individual needs. This included mandatory training such as food hygiene and allergy awareness, volunteer management and leadership training. Likewise, CFRP3's volunteers accessed food hygiene training through their local TSAA. Furthermore, through CFRP3's ties to the church, volunteers were provided the opportunity to undertake safeguarding adults and children training on a routine basis.

WellNourished represented a source of training for both CFRP1 and CFRP2. This included providing CFRP1's manager, not to be confused with SEnt1, with Level 2 Community Food training. This supported CFRP1 to diversify their services, enabling them to deliver cookery classes and

nutrition advice to members. Furthermore, Food and Nutrition Level 2 training was provided to volunteers of both CFRP1 and CFRP2. This training was said to support the volunteers to work with members in an informal way to make healthier choices when shopping, both in the CFRP and elsewhere. Furthermore, over the 3 years embedded in the communication channels of the FPWG, CTF, and CFRN, WellNourished shared training opportunities on at least 15 occasions. In addition to that provided to the initial set of volunteers at both CFRP1 and CFRP2, this included opportunities for subsequent volunteers to undertake Level 2 Food and Nutrition training, while other training offered included cooking courses and alternative retail project training.

Practical cooking courses continued to be delivered throughout COVID, including some that participants were able to complete in the comfort of their own home. However, the experience was perceived to be hindered by the absence of peer-support and social interaction. While it was acknowledged that WellNourished could not support every CFRP in person due to COVID, it was believed that the knowledge could be passed on, in turn, enabling CFRPs to run their own courses in their communities.

5.4.2.3 Managing a Hybrid Workforce

Managing a hybrid workforce is cited as a prominent challenge for SEs (Royce 2007; Roumpi et al. 2020; White et al. 2022), partly due to an inability to control volunteers through pay (Molyneaux 2004). Thus, “*free to withdraw their labour*” anytime (Doherty et al. 2014, p. 426). The CFRP’s relationship with volunteers was found to be built on informally negotiated arrangements, formulated around the five propositions proposed by Harris (1998), cited in Molyneaux (2004, p. 16), as suggested by Molyneaux (2004):

1. *"Associations have to find a balance between meeting the individual needs of their members and maintaining a vision of their longer-term goals".*

The CFRPs reduced the possibility of unpaid labour being withdrawn by establishing a relationship built on mutual benefit. This saw conversations held with prospective volunteers about what they wanted to get out of volunteering. This was to establish *"that there is a reason why it might be beneficial to them, because we know it's going to be beneficial to us"* (SEnt2). Identifying this benefit was said to be crucial in ensuring volunteers kept coming back. For CFRP4, this was viewed as a safeguard measure to protect against hiring unsuitable volunteers. Hence, as suggested by Doherty et al. (2014), the CFRPs were found to evaluate the motivations of volunteers before relying on their services.

2. *"Associations have to find a balance between member-benefit and public benefit goals and activities".*

With membership mostly tied to the local communities, the needs of members and the public were the same, ensuring balance between the two. This was supported by the CFRPs primarily recruiting volunteers from the membership base.

3. *"Setting priorities in associations is constrained by the presence of competing internal interests and factions".*

The CFRPs were able to limit the presence of competing internal interests by recruiting from the membership base. Furthermore, as suggested by Molyneaux (2004), the CFRPs reduced the possibility of volunteers becoming estranged through organisational change by implementing creativity via a mutual search for opportunities and interdependence. Achieved through volunteers' ability to shape their organisations.

4. *"The fact that members participate in associations as volunteers limits the extent to which members can be directed or managed".*

The CFRPs gave volunteers freedom and flexibility over the activities they undertook, depending on what they wanted to do on that day. In doing so, the CFRPs could be said to have managed an expectation among volunteers to not be managed through traditional hierarchical bureaucratic norms (Molyneaux 2004).

5. *"Where paid staffs are employed by associations, their status and role may be contentious".*

The CFRPs instilled clear boundaries surrounding the nature and purpose of both paid and unpaid labour (Molyneaux 2004). This included responsibility being delegated among volunteers, while staff operate in a supporting role.

5.4.3 Planning

Formal planning is argued to be lacking among SEs (Sharir and Lerner 2006; Royce 2007), attributed to limited managerial training, experience (Royce 2007) and a lack of an established organisational development roadmap (Peattie and Morley 2008a). Yet, each of the CFRPs engaged in well-thought-out planning with input from several nodes across the network.

5.4.3.1 Market Research

Market research, a fundamental component in planning any SE (Sharir and Lerner 2006; Islam 2007; Von der Weppen and Cochrane 2012; Rykaszewski et al. 2013), was found to be conducted into the

communities local to each of the CFRPs. This was a collaborative effort involving several nodes across the case network.

Despite Sharir and Lerner (2006) identifying a tendency for social entrepreneurs to abstain from undertaking pre-planning, each of the social entrepreneurs were found to have considerable involvement in the market research of their respective CFRPs. Prior to the launch of CFRP1, SEnt1 organised and led a 6-month co-design phase. SEnt2 led a series of workshops following a yearlong community research project into the struggles of community members. The purpose of these workshops was to explore with the local community how they would like to move from research to action to combat these struggles. Alternatively, both SEnt3 and SEnt4 were involved in market testing. With the emergence of the COVID-19 pandemic, SEnt3 became involved in conversations with other church members about what could be done to support the local community through the pandemic. This led to a community support initiative helping those shielding with activities including shopping and collecting prescriptions. Through this initiative, it became apparent that there was a food poverty problem within the community that had been perpetuated by the pandemic. Consequently, SEnt3 and her church counterparts began providing food parcels to those in need, purchasing contents from local supermarkets. While beneficial, SEnt3 recalled coming to the realisation that it was not sustainable, nor did people want handouts. Furthermore, the contents provided were not conducive to a healthy diet. With lockdown measures easing and people recommencing doing their own shopping, SEnt3 had more free time to explore other ways of tackling food poverty throughout the local community. Then, having learnt about FF, the idea of launching a CFRP was born. Initially, there was insufficient finance available to launch under the FF franchise. Consequently, SEnt3 set up their own CFRP to explore whether there was sufficient demand to make it sustainable. Despite previously distributing food parcels, demand was not assured due to the differences between

giving food away for free and asking people to pay for it. The trial CFRP ran for 2 months from March to April 2021. It involved sourcing food from ReFood Wales, including fresh, frozen, chilled, and tinned goods, for approximately 20 people. Due to COVID-19 restrictions laid out by the UK Government, coupled with a lack of glass-front fridges, members were not allowed to select produce themselves. Instead, members would come to the door, pay £3, and receive a pre-packed food box with a value well over that paid. Whilst working on a sustainable community venues project, SEnt4 stated that it became apparent that during the first UK Government lockdown people had considerable difficulty accessing a reliable and sustainable food supply. This was particularly the case in rural areas throughout the county. This realisation led SEnt4 to pilot a CFRP targeting areas where there was limited access to services including supermarkets and cash points. The decision to adopt a membership model followed research into UK CFRPs, where membership models represented the leading strategy. Additionally, SEnt4 spoke of consulting census data, as well as conducting research applying the Welsh Index of Multiple Deprivation, to identify those communities in the greatest need.

From the above, the establishment of the CFRPs was demand driven, occurring as a direct result of an identified need for greater access to fresh and affordable food, a need that was worsened by the COVID-19 pandemic.

In conducting market research, each of the CFRPs collaborated vertically (Johnson et al. 2013; Leat and Revoredo-Giha 2013; Scholten et al. 2014; Manning and Soon 2016; Hendry et al. 2019) with their local communities (GHK 2005; Islam 2007; Shaw and Carter 2007; Royce 2007; Patel and Mehta 2011), as their prospective target markets (Spear 2006; Seanor and Meaton 2008; Von der Weppen and Cochrane 2012; Doherty et al. 2014). This satisfied calls for increased vertical collaboration (Manning and Soon 2016) among PPSCs (Ali et al. 2017b;

2018). For example, CFRP1 were *"keen to have as many voices in involvement in how we were actually going to run the project"*. Consequently, the local community had substantial input during the co-design phase of CFRP1. This ensured the CFRP was designed in a way that made sense for the community. Alternatively, CFRP2 conducted several activities in collaboration with the local community to explore the challenges faced by residents. This included a year-long community research project into the day-to-day struggles of its BAME communities, where 25 local families were trained to conduct community research. These families then worked with 3-4 other families within their networks to explore (1) their feelings about being part of the community, (2) their struggles, and (3) the practical solutions. Consequently, keeping up with everyday costs was identified as a prominent struggle, especially for large families and parents on variable hour contracts. This provided the topic of discussion for the series of workshops led by SEnt2 above. Thus, in line with Patel and Mehta (2011, p. 226), by collaborating with their local communities, the CFRPs became *"locally tuned"*, providing them with an understanding of the needs of their target markets. This is coupled with enhanced legitimacy and credibility (Granados and Rivera 2018).

In addition to the local communities, collaboration with other organisations (Spear 2006; Sharir and Lerner 2006; Peattie and Morley 2008a; Sodhi and Tang 2011), particularly NPOs (BRASS 2004; GHK 2005; Peattie and Morley 2008a; Granados and Rivera 2018; White et al. 2022), promoted the use of market research. FF encouraged market research among the franchisee CFRPs, requiring potential franchisees to have an estimated demand for a CFRP within their target area. FF attributed the lack of a need for comprehensive market research beyond this estimation to the role of location in the franchise model. With franchisees established in communities with significant numbers of people on low incomes, coupled with limited access to fresh and affordable food, it was concluded that:

“In practice, the likelihood is the number of potential members in terms of people that are in a low-income serving food will be a multiple of the numbers that you need to make it sustainable” – FF’s Director.

FoodCore were heavily involved in the market research of CFRP1 as the network’s first CFRP. FoodCore arranged for a feasibility study (FPWG 2018) (stressed as important by Islam (2007)) by a local AC into the viability of a CFRP in the community surrounding what would become CFRP1. Consequently, CFRP1 conducted market research in collaboration with a local AC. This *“joint relationship effort”* (Scholten and Schilder 2015, p. 478-479), saw the AC conduct interviews with members of the community local to CFRP1 as potential members. FF contributed to this feasibility study (FPWG 2018) by arranging for the AC to conduct interviews with the staff and members of FF CFRPs. WellNourished contributed to the market research of CFRP1 and CFRP2 by supporting the identification of communities with the greatest need for such projects, to increase impact. WellNourished attributed this support to their community work, which enabled them to build up connections across the city as well as providing them with an understanding of the challenges and barriers present throughout several communities. The risk of false demand because of respondents feigning interest and providing positive feedback (Rykaszewski et al. 2013) may have been reduced due to the nature of WellNourished’s work throughout the communities, coupled with the absence of a direct association to the CFRPs. Prior to the establishment of CFRP4’s CFRPs, SEnt4 consulted with those *“working on the ground in the communities”* to gauge the local need (Patel and Mehta 2011). This included collaborating with the public sector (Desa 2010; Ali et al. 2017b; 2018) through community coordinators, of which there were 3 throughout the borough.

The collaborative efforts above supported the CFRPs to use methods other than surveys when conducting market research (Rykaszewski et al. 2013), instead, establishing demand through interviews (Rykaszewski et al. 2013) and / or market testing (Sharir and Lerner 2006; Islam 2007). Furthermore, through their involvement in market, the above nodes also contributed to grant acquisition through evidencing (5.2.1.2.4 Evidencing). This is because, through their contribution to market research, the CFRPs acquired a deep understanding of their target market and an accurate projection of demand, thus, making funding applications more convincing from a funder's perspective (Rykaszewski et al. 2013).

5.4.3.2 Financial Planning

Those involved in market research across the case network (5.4.3.1 Market Research) subsequently contributed to financial planning. This is because market research reduced the possibility of nodes being established with insufficient capital (BRASS 2004; Rykaszewski et al. 2013). Furthermore, in supporting the identification of a sustainable clientele base (Rykaszewski et al. 2013), market research facilitated the necessary move away from a dependence on grant funding (Sharir and Lerner 2006) (5.2.1.2.1 Forms of Finance).

Several nodes across the case network contributed to the financial planning of the CFRPs beyond their involvement in market research. ReFood Wales provided information relating to food provision, including allocation options and the costs associated. FF provided the franchisee CFRPs with a breakdown of the costs involved in setting up the CFRP. This included costs associated with creating an appropriate space for the CFRP should one not be readily available. The franchisee CFRPs received further financial planning support by collaborating with FF on membership projection and membership fee calculation. This "*joint relationship effort*" (Scholten and Schilder 2015, p. 478-479) involved FF supporting the franchisee CFRPs to set their weekly membership fee at an amount which

would enable them to cover operating costs whilst providing surplus funding as well as being affordable to the local community. Thus, counteracting a lack of understanding around pricing dynamics among SEs as well as a tendency to under-price products and services (White et al. 2018). Membership fees are set at varying amounts across the franchisee CFRPs (Table 21). For CFRP3, taking into consideration the £3 charged per week when trialling a CFRP, coupled with supply and franchise costs, the minimum membership fee recommended by FF was £3.50. This amount also accommodated those needing a crisis provision of one free week. SEnt3 acknowledged that some CFRPs charge £4-5 per week, however, it was argued that one must take into consideration the social demographic of the area in which the CFRP is located, tailoring membership to that demographic. Consequently, CFRP3 chose to adopt the minimum membership fee advised by FF. CFRP1's membership fee was also decided in consultation with the local community as their target market. Membership fees were a key point of discussion during CFRP1's co-design sessions, with SEnt1 stating *"we really wanted people to input in, we didn't want the membership fee to be too high that people wouldn't be able to access the CFRP"*. Both SEnt1 and FoodCore argued that the involvement of community members in these discussions enabled CFRP1 to set its membership fee appropriately first time. CFRP2 were the only CFRP in this study to adjust its membership fee. CFRP2 began charging £2.50 for 4 bags of shopping. This included 1 bag of fruit and vegetables, 1 bag of cupboard, ambient and tinned goods, 1 bag of halal meat or meat alternative and 1 refrigerated bag of dairy products. While the average value of these four bags equated to more than £20, CFRP2 charged less than other CFRPs because, unlike the other CFRPs, members were not able to choose the items that went into those bags. This was a conscious decision by CFRP2 amid the health and safety concerns surrounding COVID. It was believed that starting with reduced membership fees would provide people with an understanding of what things might be on offer whilst recognising this absence of choice. In July

2020, CFRP2 received government funding which meant that, from July 2020 until March 2021, membership was free. When this government funding ceased, CFRP2 reinstated membership fees, charging £5. The transition from paid, to free, then back to paid was said to be detrimental to CFRP2. This included causing a fluctuation in membership due to members reassessing whether they wanted to maintain their membership, whether they could afford it having adjusted their lifestyles in line with the free provision.

In addition to their involvement in market research, an AC contributed to financial planning through their involvement in CFRP1's co-design workshops. During these they supported CFRP1 with financial forecasting.

The above illustrates how ties to the NPOs in the form of ReFood Wales, FF and an AC supported the CFRPs in generating a sustainable revenue stream (Rykaszewski et al. 2013), as well as reducing the possibility of being established without the initial capital required (BRASS 2004).

5.4.3.3 Operational Planning

With thorough market research conducted and demand established, each of the CFRPs engaged in operational planning, again, with the support of nodes across the network.

FF contributed to the operational planning of the franchisee CFRPs by verifying the presence of a sustainable supply line. This was done through a formal partnership with ReFood Wales's parent company. This enabled FF to communicate with ReFood Wales prior to the establishment of CFRP1, CFRP2 and CFRP3 to verify that supply to each of these CFRPs was achievable. With a viable supply line established, a series of visits would take place. Firstly, FF conduct a site visit to talk through the franchise model with the social entrepreneurs representing potential franchisees and to establish whether sufficient space is available. If prospective

franchisees have not got a suitable premises identified, FF do not help in identifying one, stating “*we rely entirely on their local knowledge*”. While not core to the franchise model, it was stated that many of the franchise’s CFRPs are located within a multi-purpose community hub, consisting of a range of facilities used by a variety of people. The resulting footfall was said to create a ready-made membership base for franchisees. Once this is established, FF provide support in drawing up plans for the creation of an appropriate space. Potential franchisees are then invited to visit existing FF CFRPs to see them in operation. CFRP1 accepted this invitation, being accompanied on this visit by ReFood Wales. From here, potential franchisees are required to sign a memorandum of understanding, asserting their desire to become a franchisee. Following signing the memorandum of understanding, FF make a second site visit, providing franchisees with the intellectual property of the franchise. This included official branding and the franchise manual. FF then works through the franchise manual with the franchisee’s respective social entrepreneurs. This included guiding franchisees through the franchise model’s process of operations, a breakdown of the necessary spatial configurations coupled with the equipment required and where to source it. Peattie and Morley (2008a) attribute the lack of planning undertaken by SEs to the absence of an established roadmap for the organisational development of such ventures. With this, the presence of planning among the CFRPs could be attributed, at least in part, to the established roadmap for setting up a CFRP, as outlined by FF.

CFRP4 did not receive the organisational planning support of FF as the other CFRPs. However, SEnt4 stated that in conducting research of her own in how to tackle food poverty, these types of CFRPs were the dominant approach. This again illustrates the existence of an established roadmap for setting up CFRPs. Furthermore, SEnt4 did attribute much of the success in setting up CFRP4 to the involvement of and working alongside others.

"You can't build a social enterprise in isolation" – SEnt4.

By collaborating with community coordinators, CFRP4 gained an understanding of the environment and its customs (Patel and Mehta 2011) through their extensive knowledge of the communities throughout the borough, including prominent figures within those communities (Islam 2007). This understanding was crucial to the organisational planning of CFRP4's CFRPs. While CFRPs in the local city (CFRP1; CFRP2) can serve large areas, the *"territorial"* (SEnt4) nature and deep community attachment among residents of the communities targeted by CFRP4 meant it was crucial to have smaller CFRPs serving each community. This was compounded by the identified difficulties in accessing food in these communities, attributed to the absence of nearby supermarkets and / or sufficient transport links. This also illustrates how, by collaborating with representatives of the local community represented a source of credibility (Shaw and Carter 2007; Patel and Mehta 2011; Von der Weppen and Cochrane 2012; Granados and Rivera 2018).

CFRP1's operational planning involved a co-design phase including a series of 3 *"co-design workshops"* (SEnt1). These workshops generated operational planning of CFRP1 as a collaborative effort involving several parties. FoodCore, ReFood Wales, WellNourished and an AC were ever-present for these.

Once in operation, CFRP1 and FoodCore continued to collaborate through *"joint relationship effort"* and *"joint knowledge creation"* (Scholten and Schilder 2015, p. 479).

"We don't see this CFRP just sitting here by itself... it's also connected to FoodCore, and FoodCore is supporting our work and potentially the work of developing CFRPs in other areas" – SEnt1.

FoodCore were heavily involved in the strategic planning of CFRP1, holding regular meetings and being in regular email communication “*every couple of weeks*” with SEnt1. This included developing CFRP1’s services through incorporating the Healthy Start Voucher (HSV) initiative, which entitles those on benefits, who are either pregnant or have a child under the age of 4, to a voucher of varying value, which can be redeemed at most supermarkets and several retailers throughout the city. FoodCore worked closely with SEnt1 to incorporate the acceptance of these vouchers into their service, supporting those who could not afford the weekly membership. However, due to restrictions placed on what produce the vouchers can be used for, this was not a straightforward processual change. Hence, FoodCore supported CFRP1 to be compliant with relevant legislation, another area where support is commonly required by SEs (BRASS 2004).

This supports Juttner and Maklan’s (2011) claim that organisational collaboration improves strategic thinking. FoodCore's role as a planning catalyst was demonstrated by them encouraging CFRP1 to develop a predetermined succession plan, something Royce (2007) identifies as typically lacking amongst SEs.

The flow of knowledge, support and learning between the two was not unidirectional. There was also “*joint knowledge creation*” (Scholten and Schilder 2015, p. 479) between the two, with FoodCore learning from the experiences of working with CFRP1, which benefitted their provision of support to CFRP2.

In line with Peattie and Morley (2008a), CFRP2 spoke of the support they received from fellow SE, and CFRP, CFRP1 during the planning process (BRASS 2004; GHK 2005). On maturity, CFRP1 were well-positioned to provide planning support to other CFRPs. SEnt2 worked with CFRP1 prior

to the launch of CFRP2, accompanying colleagues to visit CFRP1 and see the CFRP in operation. This mirrored that experience of SEnt1 and his colleagues when they made the trip to the North of England to see an FF CFRP in operation.

“We are really lucky with CFRP1, we’ve been able to work with them closely from the start” – SEnt2.

During this visit, SEnt2 stated gaining an understanding of what the needs of the community surrounding CFRP1 were, as well as how people felt about the CFRP. This was coupled with SEnt1 sharing his experiences with CFRP1, including what they have tried, what worked and what did not. This was something SEnt2 valued highly, stating they (CFRP2) would not have had the confidence to set up the CFRP had they not seen what CFRP1 were doing. Thus, illustrating the importance of learning from the experience of others.

5.4.3.4 Upscaling

Each of the CFRPs plan to upscale operations by increasing membership at a manageable rate. In discussing their intentions to upscale, three of the four CFRPs (CFRP1; CFRP2; CFRP3) cited hurdles in the storage capacity of their current premises. Consequently, both CFRP1 and CFRP3 were exploring the possibility of implementing additional opening times. Furthermore, CFRP3 hope to move premises in the future, with the vision of turning it into an every-day CFRP akin to a traditional food store.

In addition to increasing their membership base, both CFRP2 and CFRP4 cited plans to diversify their activities beyond their current service. For CFRP2, this included the introduction of a community café, hoping to create more of a community centre experience where people can come and chat, share problems and find out what else is going on in the community. Alternatively, CFRP4 were in the process of developing a CFRP

toolkit, with the long-term objective being to sell the toolkit as a form of social franchising (Litalien 2006; Doherty et al. 2014; Cumberland and Litalien 2018; Naatu and Alon 2019). Thus, contrary to Royce (2007), each of the CFRPs were seen to partake in some form of medium and / or long-term planning.

Patel and Mehta (2011) cite this scaling up of operations, so to achieve greater impact, whilst maintaining sight of its primary mission, as a prominent challenge for a SE. However, this was found to be mitigated by the membership model adopted by the CFRPs. This meant the social and financial objectives of the projects are intrinsically linked, removing the risk of mission drift. This supports White et al.'s (2022) claim that there isn't necessarily a trade-off between the financial and social objectives of SEs.

Like the CFRPs, FF also plans to upscale by gradually expanding their franchise network nationwide and enhancing their franchise offerings. They aim to replicate the success of a flagship CFRP leading to a network of CFRPs, with the West Midland area identified as a potential location. FF also aims to promote sharing learning among franchisees, including a stock value tool developed by two other FF franchisees, potentially online for all franchisees.

5.4.4 Risk Management

Risk management was found to be a network-wide effort, with the CFRPs collaborating with a variety of network stakeholders to anticipate, identify, mitigate, and prevent risks (Chowdhury and Quaddus 2016; Adobor 2019; Sawyerr and Harrison 2020). This included collaborating vertically (Johnson et al. 2013; Leat and Revoredo-Giha 2013; Scholten et al. 2014; Manning and Soon 2016; Ali et al. 2017b; 2018; Hendry et al. 2019) upward with primary supplier, ReFood Wales, and downward with

members and the local community (Islam 2007), as well as with other organisations (Spear 2006; Sharir and Lerner 2006; Peattie and Morley 2008a; Sodhi and Tang 2011) from the third (BRASS 2004; GHK 2005; Peattie and Morley 2008a) and public sector (Desa 2010; Ali et al. 2017b; 2018).

“One of the best ways of actually mitigating risk overall is by having lots of really good partners” – SEnt4.

5.4.4.1 Assessment of Vulnerabilities

Risk assessments were a regular occurrence across the case network. This could be attributed in part to the COVID-19 pandemic, representing an ever-present health risk.

“Risk assessments are going to be the flavour of you know [...]. I mean, there are an ongoing process” – SEnt4.

While CFRP1 was established prior to the COVID-19 pandemic, risk assessments were a regular part of their process, conducted on a quarterly basis. This involved the team getting together to discuss occurrences within the CFRP, if there had been any complaints etc, as well as a check of equipment. SEnt3 instigated the undertaking of regular risk assessments by CFRP3. An integral part of her paid work as a social worker, SEnt3 stated *“risk assessment is very important to me”*. Consequently, SEnt3 undertook monthly risk assessments for the first three months in operation, before moving to on a quarterly basis. Moreover, the background checks of all staff and volunteers were conducted by a church-paid administrator. ReFood Wales assesses risks during board meetings held on a monthly / quarterly basis.

Several nodes across the case network contributed to the assessment of vulnerabilities through broadening SC understanding / knowledge (5.2.2.4

SC Understanding / Knowledge) and subsequently to the development of a risk averse SC (Christopher and Peck 2004). For example, in sharing updates on inventory levels (Scholten et al. 2014), ReFood Wales aided the detection of potential and impending disruptions (Blackhurst et al. 2011; Tukamuhabwa et al. 2015; Ali et al. 2017a; Jain et al. 2017) such as reduced access to surplus food supplies. This was crucial during the COVID-19 pandemic with ReFood Wales upfront about their current SC issues due to the pandemic.

FF were found to have assessed the vulnerabilities (Sheffi and Rice 2005) associated with the franchise model on behalf of the franchisee CFRPs, as outlined in the franchise manual. This package outlined the risks associated with the model, including those relating to the supply, storage, and distribution of food. By formulating this within the franchise manual, FF developed what could be described as an “*enterprise vulnerability map*” (Sheffi and Rice 2005, p. 44). In addition to outlining the risks associated with the franchise model, this package provided material to support the franchisee CFRPs to conduct their own risk assessments. This included franchise-adapted risk assessment forms as well as guidance on conducting assessments. This proved of great use to the CFRPs, with SEnt1 stating “[the guidance] *supported us to think about risk associated with a food project that we wouldn’t have necessarily thought about*” and therefore supporting future assessments of vulnerabilities (Sheffi and Rice 2005). FF further supported with the assessment of vulnerabilities via the provision of the attendance recording software. With no mandatory requirements placed on members to attend the CFRPs on a weekly basis, there is no guarantee members will pay their membership fee weekly. Failure to identify those no longer attending compromises the CFRP’s ability to operate to capacity as well as its financial sustainability.

FoodCore contributed to the assessment of vulnerabilities by exploring the risks associated with food supply. This included conversing with primary

supplier ReFood Wales on behalf of CFRP1. FoodCore subsequently played down the risk associated with the supply of food from ReFood Wales, stating:

“I think in the long run it’s [food supply] maybe an area [of concern], like in the next 20-30 years sort of time. In the next 5 years, from speaking to ReFood Wales, from what they’ve said, it seems to be that there’s plenty”.

Whilst this reaffirms the presence of trust (5.2.2.2 Trust) within the case network, it also raises the question of whether too much trust can be a risk. Despite FoodCore playing down concerns regarding food supply, the network (FoodCore included) has since placed greater focus on methods of diversifying supply, with the CFRPs acknowledging seeing a decline in the quality and variety of food received from ReFood Wales.

“It will come to a point where we'll have to say there isn't any more food today. First come, first served and it will have to be. Unless we can find some major suppliers” – SEnt4.

In not owning their premises, the risk assessments of CFRP3 were supported by the church in which they were based, who, as owners, were responsible for conducting activities such as PAT testing.

The above illustrates how nodes across the case network contributed to “*tactical knowledge*” (Christopher and Peck 2004, p. 9), and therefore SC Understanding / Knowledge (5.2.2.4 SC Understanding / Knowledge) through assessing operational risks. The assessment of vulnerabilities, and therefore risk management (Sheffi and Rice 2005), was supported by a limited geographical scope (5.3.1.1 Scope) and high SC density (Craighead et al. 2007; Falasca et al. 2008; Chowdhury and Quaddus 2017) (5.3.1.2 Density). Thus, reducing the chance of disruptions

occurring (Sheffi 2005, cited in Purvis et al. 2016) as well as minimising internal vulnerabilities (Saenz et al 2018).

5.4.4.2 Risks

Several notable risks were identified in relation to the case network, some specific to the network's context, while others were more conventional to those handling food. Firstly, food supply represented a leading risk to the operations of both the CFRPs and primary supplier ReFood Wales.

It is important to note that the risk of food supply was not just due to a lack of food, it also includes an issue of access. This was because, whilst ReFood Wales can do deliveries, occasionally they are incapable of delivering additional food. On most occasions, this was attributed not to a lack of available food, rather a lack of delivery capacity.

Secondly, health and safety risks were found to be a multi-faceted. Firstly, given the nature of the products provided, food hygiene / safety was a prominent risk across the case network, due to the handling of chilled and frozen food. This was coupled with COVID-19, which represented a constant health risk for the best part of 2 years. Beyond the obvious health risks, COVID-19 caused greater challenges in food supply. This was because of the impact the COVID-19 pandemic had on SCs. This had a knock-on effect of primary supplier ReFood Wales, with the variety in food received becoming "*quite poor*" SEnt4. This was at a time when their service was more vital than usual, despite ReFood Wales previously stating that they had not experienced any trouble with satisfying orders "*for the last few years*".

Thirdly, according to WellNourished, a common risk among those with social objectives relating to food poverty is falling into a mindset of "as long as they are getting something to eat, then its ok". This can inadvertently lead to increased inequality and additional health problems.

Whilst said to not occur maliciously, WellNourished's Clinical Lead shared stories of what was described as non-informed good intentions, whereby food provision service recipients were given unhealthy food such as sweets, chocolates, and crisps as a way of compensating for their other struggles.

Another notable risk was that of sunk time and costs. The risk of sunk time and costs related to setting up the projects and accessing funding. Firstly, setting up any project can be both time and finance consuming. Due to the financial constraints and limited workforce at the disposal of the CFRPs, to set up a new project represented considerable risk to each of the CFRPs. Regarding accessing funding, the risk of sunk time and costs was a result of the time spent identifying funding and completing applications, only to get rejected. This was of utmost concern given the reliance on grant funding during the initial stages of the projects (5.2.1.2.1 Forms of Finance). For example, while acknowledging that CFRP4 had been fortunate in accessing funding to date, it was cited as "*always a challenge*" (SEnt4). This was attributed to the considerable number of people "*chasing the same pots*" (SEnt4).

There was also the risk of reputational damage (Shaw and Carter 2007), both for FF and for the CFRPs. FF placed significant importance on the interpersonal qualities of the social entrepreneurs looking to front a franchisee and that they understood the ethos of the franchise model. Failing to understand this ethos was viewed as a major risk to FF. Furthermore, each of the CFRPs spoke of the accountability they feel towards their local communities.

5.4.4.3 Risk Management Strategies

With the holding of surplus stock (Table 9) being minimal across the case network (5.2.3.1 Holding of Buffer / Safety Stock), the implementation of buffer stock as a risk management strategy (Colicchia et al. 2010) was,

as hypothesised, inappropriate for the CFRPs (due to the associated costs and perishability). Instead, as hypothesised, risk management revolved around reducing the probability and impact of risks using mitigation strategies and contingency plans (Colicchia et al. 2010).

5.4.4.3.1 Managing Risk: Food Supply

With food supply representing a significant risk for the SC, multi-sourcing (5.2.3.2 Multi-sourcing) (Tukamuhabwa et al. 2015; Kamalahmadi and Parast 2016; Stone and Rahimifard 2018; Sa et al. 2020; Sawyerr and Harrison 2020) represented a key risk management strategy for the case network. Consequently, those that contributed to the presence of multi-sourcing (5.2.3.2 Multi-sourcing) also contributed to the existence of a supply base strategy conducive to the presence of a SC with risk reduction built-in (Christopher and Peck 2004). In addition to the CFRPs, ReFood Wales also managed risks associated with the acquisition of food through multi-sourcing. This included working with a variety of suppliers through both their ReFood Wales network affiliation and local sourcing.

Of these multiple suppliers, local supermarkets represented somewhat of a contingency plan for the CFRPs (Colicchia et al. 2010; Stone and Rahimifard 2018; Polyviou et al. 2020). This is because the CFRPs only sought to source food from these suppliers as a 'last resort' (5.2.3.2 Multi-sourcing). As a contingency plan, local supermarkets also represented a source of greater velocity (Blackhurst et al. 2011; Scholten et al. 2014; Hohenstein et al. 2015). FoodCore further contributed to multi-sourcing as a risk management strategy through a webpage offering advice and support in accessing food during the COVID-19 pandemic. This resource has gone on to be the most viewed page on their website. This also illustrates how I.T. contributed to risk management.

Redundancy, in the form of alternative modes and routes of transportation (5.2.3.6 Alternative Modes and Routes of Transportation), also

represented a risk management strategy in relation to food supply. Alternative modes of transport in the form of a grant-funded electric vehicle (CFRP1; CFRP2), volunteer's personal vehicles, and business vehicles of collaborating organisations (CFRP4) supported the CFRPs to mitigate risks to supply by being able to collect food themselves, as opposed to relying on the delivery capabilities of suppliers.

5.4.4.3.2 Managing Risk: Food Safety

ReFood Wales works to the same food safety standards and procedures as the ReFood UK network. This sees ReFood Wales adhere to a food safety manual against which they are audited each year. As part of the food safety manual, ReFood Wales are responsible for maintaining appropriate temperatures of food, and a contract is in place to ensure regular maintenance checks occur. Operating under the same regulations as the wider food industry means ReFood Wales are required to be able to demonstrate full traceability in the event of a product recall. Therefore, once received, ReFood Wales log all items, to then be logged out on departure to members. This was crucial because, as the food was not being sold, ReFood Wales retained a degree of liability over the food redistributed to the CFRPs. This led ReFood Wales to provide the training in the safe storage, handling and distribution of food provided to the CFRPs (5.4.2.2 Training), thus representing risk management education / training (Rice and Caniato 2003; Blackhurst et al. 2011; Scholten et al. 2014). This illustrates how ReFood Wales were able to mitigate against temperature breakdown, occurring due to negligence or a lack of training, as a critical risk for PPSCs (Ali et al. 2018).

Furthermore, each of the CFRPs claimed to be able to contact ReFood Wales should they have any queries. An example of this followed a meeting where CFRP4's procedures were called into question, with concerns raised about being in violation of 'Natasha's Law'. Coming into effect in 2021, 'Natasha's Law' stipulates that food outlets have complete

ingredient lists and clear allergy labelling on all PDSS (Pre-Packed for Direct Sale) food, that is, food packaged / prepared and sold / provided on-site (Natasha Allergy Research Foundation 2022). SEnt4 spoke of being able to reach out to ReFood Wales immediately after the meeting for guidance, where she was met with speedy assurance over the way they operate because 'Natasha's Law' is concerned with prepared food, and the CFRPs aren't preparing food.

The above illustrates how ReFood Wales actively supported the CFRPs to anticipate, identify, mitigate, and reduce risks associated with the redistributed food (Chowdhury and Quaddus 2016; Adobor 2019; Sawyerr and Harrison 2020) through the provision of behavioural guidelines to volunteers (Adobor 2019).

To aid both ReFood Wales and the CFRPs with the safe storage of produce, FF issued the franchisee CFRPs with fridge-freezer thermometers. This way, the franchisees could reassure ReFood Wales, or indeed any other surplus food supplier, that the food will be stored appropriately. Thus, illustrates how FF supported both ReFood Wales and the franchisee CFRPs to mitigate and prevent risks.

5.4.4.3.3 Managing Risk: COVID-19

Fortunately, under COVID restrictions, community venues were able to remain open to the public for the provision of food. Each of the CFRPs were therefore able to continue operating throughout the pandemic, albeit, in ways that evolved in line with UK government lockdown restrictions. This saw each of the CFRPs implementing social distancing strategies to both mitigate the health risks of COVID-19 as well as maintain operation.

While CFRP1 was established prior to the COVID-19 pandemic, COVID-19 meant the CFRP had to change its operational process in line with

evolving government restrictions as well as ever-present health concerns. Social distancing rules were abided by through providing members with individual designated shopping slots of 10 minutes, with a strict one in, one out, policy. A designated area was taped off for members to stand in while choosing their items, which were then collected by a volunteer, ensuring their safety and that of their members. In addition to this, the CFRP began carrying out deliveries for those members deemed 'High Risk' or who were shielding.

At the time of interview, CFRP3 had always operated under social distancing measures, allowing only one member (or familial 'bubble') in the CFRP, the pay and pack area and the waiting area at any one time. This was coupled with having one volunteer in the shopping area and two volunteers in the waiting area. COVID prevention signage was displayed throughout the CFRP emphasising all the above.

CFRP2 also implemented restrictions on the number of people allowed in the CFRP in line with government social distancing rules. Initially, CFRP2 did not utilise volunteers, with SEnt2 stating that, as paid members of staff, they knew they had a greater responsibility to ensure their safety. With increased confidence in COVID procedures, CFRP2 introduced volunteers, with a maximum of 3 people allowed at any one time to maintain social distancing. In maintaining social distancing, SEnt2 spoke of the need to utilise greater internal space, having to ensure fridges and freezers were 2 metres apart to minimise the risk of infection.

During phases of lockdown where restrictions were at their tightest, both CFRP2 and CFRP4 stripped back their service to providing members with a pre-packed bag of food at the door to the CFRP. This removed members' ability to come into the CFRP and select their own produce (excluding a choice of vegetarian or Halal meat in the case of CFRP2). This decision was made to minimise the risk to CFRP workers and members alike, in

view of government guidelines and the fact that many of the venues were small. Choice was reintroduced into the CFRP's offerings once restrictions eased.

In addition to social distancing, each of the CFRPs implemented broader cleaning routines involving deep cleans of the premises and sanitation measures. On arrival at the CFRPs, members were asked to sanitise their hands at one of the provided sanitation stations prior to collecting a basket and doing their shopping. After each member has concluded their shop their baskets, as well as the handles of the fridges and freezers, are sanitised. In addition to mitigating the risks associated with COVID-19, these cleaning routines also represented a food safety measure. For example, in conducting regular deep cleans of the premises, the CFRPs were also able to mitigate risks associated with food handling and storage.

The CFRPs were seen to benefit from collaborating with other organisations (Spear 2006; Sharir and Lerner 2006; Peattie and Morley 2008a; Sodhi and Tang 2011), particularly NPOs (BRASS 2004; GHK 2005; Peattie and Morley 2008a; Granados and Rivera 2018; White et al. 2022) to identify, mitigate and prevent risks (Chowdhury and Quaddus 2016; Adobor 2019; Sawyerr and Harrison 2020). Both CFRP1 and CFRP2 benefitted from risk management support in relation to COVID-19 from their local TSSA. This TSSA supported CFRPs to navigate the COVID-19 pandemic through the provision of a directory of support and services operating throughout the pandemic, as well as COVID-19 relief funding. This was coupled with guidance for working with volunteers and vulnerable and at-risk groups. Furthermore, this TSSA provided provide guidance to the CFRPs in navigating the easing of lockdown measures. This included support for individuals returning to work as well as support for groups and organisations looking to re-open to the public. Outside of COVID-19 risk management support, the TSSA provided information on

undertaking DBS checks and safeguarding more generally. Both also accessed risk management support in relation to COVID-19 from government agents (Spear 2006; Desa 2010), with a local council representative providing guidance in abiding to the ever-changing lockdown restrictions throughout the COVID-19 pandemic. This included making members aware of impending lockdowns, as well as how, if at all, it impacts on the CFRP's operations.

5.4.4.3.4 Managing Risk: Inequality and Health Problems

Education / training (Rice and Caniato 2003; Blackhurst et al. 2011; Scholten et al. 2014) played a key role in mitigating against the risk of inadvertently facilitating increased inequality and additional health problems. WellNourished achieved this by consulting with CFRP1, CFRP2 and ReFood Wales to ensure health was a constant component of their services provided. This mitigated against the risk of inadvertently facilitating increased inequality and additional health problems. This was done with the backing of nutritional research-backed guidelines (Adobor 2019), educating the organisations on health, nutrition, and wellbeing, providing structure around the food to be provided by the CFRPs. Furthermore, WellNourished provided both CFRP1 and CFRP2 with recipe pamphlets. These were handed out to members to inform them about how to make healthier choices in the food they selected through the service.

5.4.4.3.5 Managing Risk: Sunk Time & Cost

Market research, particularly market testing, was a risk management strategy that mitigated the risk of sunk time and costs (Chowdhury and Quaddus 2016; Adobor 2019; Sawyerr and Harrison 2020) among the CFRPs. For example, in providing the tried-and-tested franchise model, FF supported the franchisee CFRPs by mitigating the risks associated with the substantial staff time involved in setting up a new and untested

project from scratch. This was time that franchisees otherwise did not have to invest “*because it was all there for us*” SEnt1. Such is this risk, SEnt1 stated “*if we had just tried to do it from scratch, we wouldn't have been able to take the risk. It would have been too risky*”. Therefore, those involved in market research (5.4.3.1 Market Research) also contributed to risk management.

5.4.4.3.6 Managing Risk: Mission Drift

Despite being susceptible to mission drift (Spear et al. 2009; Doherty et al. 2014; Ebrahim et al. 2014), a trade-off between social and financial objectives was absent among the CFRPs. SEnt2 spoke of the personal difficulty she had experienced in simultaneously managing social and financial objectives throughout her career. However, this was no longer the case with the adoption of a membership model. As membership organisations, the social and financial objectives of the CFRPs were intertwined, with the target beneficiaries of their social mission representing the target consumers of their commercial activities. Thus, representing integrated hybrid organisations (Ebrahim et al. 2014). This meant that income building was only achievable through increasing membership, which in turn satisfies the social as well as the financial objective of the CFRPs.

In eliminating the risk of mission drift, the need for close monitoring of the two objectives, along with the development of control strategies (Ebrahim et al. 2014) was also eliminated. This is coupled with removing the challenge of acquiring the necessary skills to manage such a trade-off (Royce 2007; Peattie and Morley 2008a; Patel and Mehta 2011; Von der Weppen and Cochrane 2012; Ebrahim et al. 2014; Zainon et al. 2014). This supports the earlier rejection of Von der Weppen and Cochrane’s (2012) claim that having paying customers separate from beneficiaries is critical to the success of SEs. Furthermore, by adopting a membership

model, the CFRPs were able to ease the challenge of managing various stakeholders (Spear et al. 2009; Doherty et al. 2014; Roumpi et al. 2020). Through membership fees, the CFRPs no longer relied on grant funding (5.2.1.2.1 Forms of Finance) and therefore no longer needed to manage or respond to the needs of funding bodies (Spear et al. 2009). This was coupled with consolidating consumers and beneficiaries into a single stakeholder (Spear et al. 2009).

5.4.5 Culture

The existence of a risk management culture was facilitated, in part, by the occurrence of the COVID-19 pandemic. The ever-present health risks posed by the pandemic meant that risk was forefront in the minds of network members, evident through the regular undertaking of risk assessments (5.4.4.1 Assessment of Vulnerabilities). This also meant that risk management was present in decision-making at all levels (Christopher and Peck 2004; Adobor 2019; Polyviou et al. 2020). There was evidence to suggest that an RMC can be facilitated by the social entrepreneur. For example, while not obliged to do so, CFRP3 was the only CFRP to conduct background checks on all prospective volunteers. This included collecting references as well as conducting DBS / CRB checks, which SEnt3 saw as a form of good practice. DBS / CRB checks were also considered by SEnt4, however, they decided that their CFRPs mirrored that of a shop, so such checks were not necessary. Concluding that *"vulnerable people may use the CFRPs, but vulnerable people use shops"* (SEnt4).

A culture of distributed responsibility was also evident across the CFRPs (5.4.1.2 Delegated Responsibility). This was achieved through an open culture consisting of two-way communication between volunteers, employees, and management (Spear 2006; Shaw and Carter 2007; Patel and Mehta 2011; Von der Weppen and Cochrane 2012; Rykaszewski et al.

2013). This often took place during end of day debriefs. Risk management education / training in relation to food safety (5.4.4.3.2 Managing Risk: Food Safety), COVID-19 (5.4.4.3.3 Managing Risk: COVID-19) and inequality and health problems (5.4.4.3.4 Managing Risk: Inequality and Health Problems) provided to staff and volunteers alike ensured the presence of an RMC in line with a culture of distributed responsibility.

Culture was found to play a significant role in CFRPs beyond that of an RMC and a culture of distributed responsibility. In discussing the dual management of social and financial goals, SEnt1 stated *"It is an issue, and it is an interesting culture change to the organisation"*, albeit a positive one. This cultural change involved needing *"to develop more of a social enterprise approach"*, with SEnt1 emphasising the importance of having a business mindset. This was attributed to the organisation having relied solely upon considerable, stable government funding *"which meant that we didn't always have to think like business"* (SEnt1). The development of a business mindset was said to have been aided by working in collaboration with an AC. In this sense, it could be argued that the AC enabled SEnt1 to transition to that of a *"dollars social entrepreneur"* (Vega and Kidwell 2007, p. 22), recognising the need to generate income, thus, focused on running the SE as a business to achieve its social objective. Furthermore, culture impacted on the food the CFRPs provided. With many of the CFRPs embedded in diverse multinational, multicultural communities, they needed to meet contrasting cultural food needs. WellNourished provided guidance around food for diverse cultures to both CFRP1 and CFRP2 with CFRP2 sourcing halal meat.

5.5 Flexibility

In line with the SE literature (Royce 2007; Patel and Mehta 2011; Von der Weppen and Cochrane 2012; Doherty et al. 2014), flexibility was a

characteristic of the CFRPs. In addition to their hybrid identity (Doherty et al. 2014) and the leveraging of multiple funding streams (Lyon et al. 2019 (5.2.1.2.1 Forms of Finance)), the CFRPs demonstrated both operational and sourcing flexibility (Stone and Rahimifard 2018; Sawyerr and Harrison 2020).

5.5.1 Operational Flexibility

5.5.1.1 Process Flexibility

Each of the CFRPs demonstrated operational flexibility (Sawyerr and Harrison 2020) through process flexibility (Stone and Rahimifard 2018). Process flexibility was achieved with the adoption of minimalistic processes (Patel and Mehta 2011). This enabled the CFRPs to continue operating throughout the duration of the COVID-19 pandemic, adapting their processes in line with ever-changing government restrictions, including implementing social distancing measures, removing choice, and conducting deliveries. For the franchisee CFRPs, this could be attributed to collaborating with FF. This “*joint relationship effort*” (Scholten and Schilder 2015, p. 478-479) involved the provision of a standardised franchise package, including process of operation and set of branding material.

While there were aspects of the franchise model that were treated as non-negotiables, FF demonstrated leniency and flexibility in its interpretation among franchisees. Aspects such as the membership structure and franchise branding were non-negotiables in the truest sense, the element of choice, which was initially described as a core component of the model, was allowed to be sacrificed with good reason. One reason being the COVID-19 pandemic and subsequent lockdown measures. Similarly, while the provision of fresh, chilled, and frozen food was presented as a core component of the franchise model, FF again appeared willing to compromise on this component when the opportunity for a mobile CFRP arose. With this mobile CFRP, the provision of fresh, chilled, and frozen

food together would not be feasible. FF subsequently concluded that only when in an area where access to fresh, chilled, and frozen is possible, coupled with the ability to store it appropriately, would it be core to the model. Furthermore, FF allowed franchisees autonomy over the 'hearts and diamonds' approach to produce. CFRP1 replaced the 'hearts and diamonds' with a green and blue colouring system. Green labels indicate 'high value items', of which members are allowed 2, and blue labels indicate 'regular items', of which members are allowed 8. Franchisees were also allowed autonomy over what was characterised as high and low value items based on stock levels. This meant that should franchisees come into possession of an abundance of produce that has a retail value over £1.50, they could classify it as lower-value item so to shift the stock more effectively. Such was the case with CFRP3. Hence, the 'hearts and diamonds' systems created order fulfilment flexibility (Tukamuhabwa et al. 2015; Sa et al. 2020) among the franchisee CFRPs. This illustrates how, even with social franchising (Litalien 2006; Doherty et al. 2014; Cumberland and Litalien 2018; Naatu and Alon 2019) and the provision of a proven concept that must not be compromised (Litalien 2006; Doherty et al. 2014), FF gave the franchisees process flexibility (Von der Weppen and Cochrane 2012).

5.5.1.2 Conversion Flexibility

Both process flexibility (Stone and Rahimifard 2018) and operational flexibility (Sawyerr and Harrison 2020) were further evident through conversion flexibility. Conversion flexibility was evident through the existence of back-up sites (5.2.3.5 Back-up Sites). This was supported by the presence of standardised (Sheffi and Rice 2005; Wicher and Lenort 2012; Polyviou et al. 2020) and minimalistic processes (Patel and Mehta 2011), with SEnt3 stating "*as long as we had a building, we would move everything down and open the front door*".

5.5.1.3 Flexible Labour Arrangements

Each of the CFRPs demonstrated operational flexibility through flexible labour arrangements (Tukamuhabwa et al. 2015; Kamalahmadi and Parast 2016). This was evident through decentralised management (Juttner and Maklan 2011), with responsibility delegated to volunteers (5.4.1.2 Delegated Responsibility), enabling the volunteers to use their initiative (Sheffi and Rice 2005). For CFRP1, CFRP2 and CFRP4, this was achieved also through broad job descriptions (Johnson et al. 2013) (5.2.3.3 Broad Job Descriptions). Alternatively, for CFRP3, having well-defined roles for its volunteers was a way to cater for their individual needs, i.e. those who wish to volunteer but work during the day can support with stock collection on a Monday evening. Despite having well-defined roles, CFRP3 also benefitted from flexible labour arrangements (Tukamuhabwa et al. 2015; Kamalahmadi and Parast 2016), with volunteers described as flexible and willing to be called upon at short notice. This was coupled with a widespread willingness to undertake any roles as and when needed among volunteers across the CFRPs (5.2.3.4 Multi-Skilled Workers). Consequently, each of the CFRPs have processes in place so that, should volunteers not turn up, others, described as “*super subs*” (SEnt3), are on standby to provide cover.

5.5.1.4 Distribution and Customer-Facing Activities

When it came to distribution and customer-facing activities (Sheffi and Rice 2005), the CFRPs demonstrated flexibility through prioritisation (Sheffi and Rice 2005; Bradaschia and Pereira 2015). Prioritisation was based on vulnerability, as opposed to profitability or importance. When prioritising consumers, Sheffi and Rice (2005) emphasise fair allocation to maintain long-term relationships. The CFRPs achieved this by collaborating with other non-profit organisations (BRASS 2004; GHK 2005; Spear 2006; Sharir and Lerner 2006; Peattie and Morley 2008a; Sodhi and Tang 2011), with these collaborators identifying those in the

direst need. This often occurred as a by-product of membership referrals (5.2.2.3.3 Referrals). Consequently, those identified as being in-need most received priority treatment in the form of quicker access to membership. CFRP1 displayed further flexibility in regard to distribution and customer-facing activities by supporting members to identify and access alternative suppliers (Sheffi and Rice 2005) with the CFRP trained to carry out food bank assessments. Furthermore, each of the franchisee CFRPs displayed flexibility in relation to distribution and customer-facing activities (Sheffi and Rice 2005) through waiting lists (5.2.3.7 Waiting Lists).

5.5.2 Sourcing Flexibility

5.5.2.1 Multi-Sourcing

Sourcing flexibility (Stone and Rahimifard 2018; Sawyerr and Harrison 2020) was evident through multi-sourcing (Tukamuhabwa et al. 2015; Kamalahmadi and Parast 2016; Stone and Rahimifard 2018; Sa et al. 2020; Sawyerr and Harrison 2020) (5.2.3.2 Multi-Sourcing).

Consequently, those that contributed to the presence of multi-sourcing (5.2.3.2 Multi-Sourcing) also contributed to the presence of flexibility.

5.5.2.2 Flexible Contracts Arrangements

While each of the CFRPs are allocated the same amount of food in weight each week from ReFood Wales, the type and quantity of food is subject to weekly change. Despite a lack of control over the food available for redistribution, ReFood Wales worked extensively with the CFRPs to adapt deliveries to their individual needs. This included developing a spreadsheet of member's key information including their wants and dislikes, concluding that "*we kind of get to know everybody, you know, everybody is different*". This personal knowledge of customers contrasts with today's 'big data' dominated approaches to customer service. Furthermore, ReFood Wales have at times, contacted the CFRPs

unprompted, offering additional food. Consequently, CFRP3 stated that, should their supplies be lacking, they could reach out to ReFood Wales for additional food. This illustrates how ReFood Wales instilled sourcing flexibility (Stone and Rahimifard 2018; Sawyerr and Harrison 2020) through flexible contracts arrangements (Tukamuhabwa et al. 2017; Adobor and McMullen 2018; Stone and Rahimifard 2018; Sawyerr and Harrison 2020).

5.6 Agility

Agility was present across the case network primarily through the existence of visibility (5.3.2 Visibility) and velocity (5.3.3 Velocity) (Kamalahmadi and Parast 2016). Visibility was achieved through vertical collaboration between the CFRPs and their primary supplier ReFood Wales. This was coupled with input from both NPOs (BRASS 2004; GHK 2005; Peattie and Morley 2008a; Granados and Rivera 2018; White et al. 2022) and public sector entities (Desa 2010; Ali et al. 2017b; 2018). Velocity was enhanced through high node density (Wicher and Lenort 2012), including local sourcing (Saenz et al. 2018). Thus, reducing in-bound times (Saenz et al. 2018) as well as the quick turnover of produce. Furthermore, agility was evidenced by a high degree of market orientation and a customer focus (Mandal 2012), illustrated by the network-wide involvement in market research (5.4.3.1 Market Research).

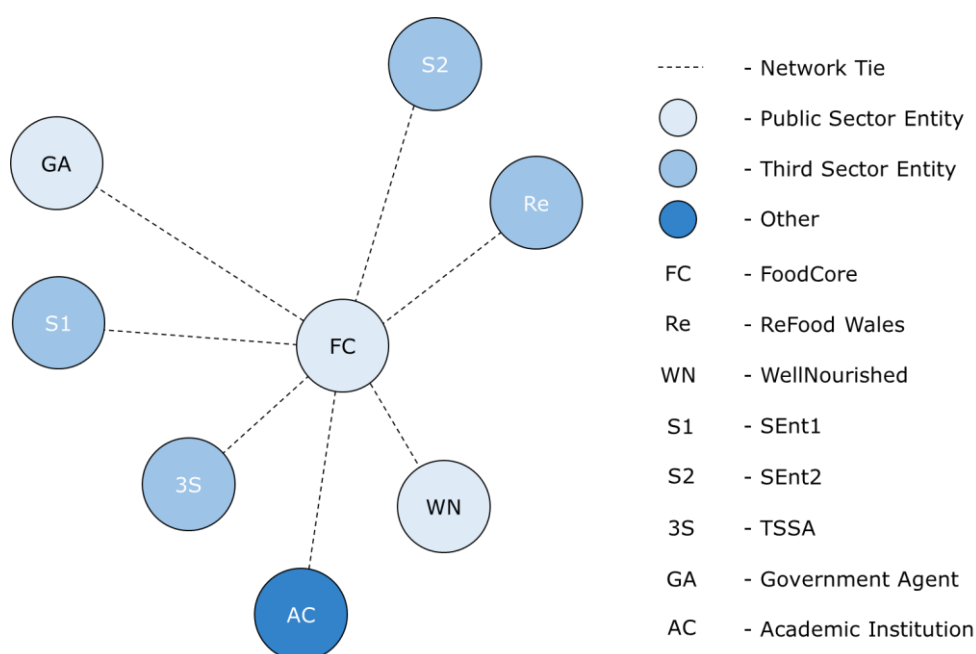
5.7 Network Creation

In addition to identifying how ties across the case network contributed to the development of SOSCRes, this study was able to identify how the creation of a network conducive to SOSCRes can be instigated by a single orchestrating organisation. Through the formulation of their FPWG, FoodCore played an orchestrating role in the creation of both the social food SC and the network from which it generated SOSCRes.

5.7.1 Step 1: Formulation of the Food Poverty Working Group

The first step in developing a network conducive to the development of SOSCRes was the creation of the FPWG. In formulating this group, FoodCore brought together a variety of organisations and individuals, all of whom share a common goal of tackling food poverty. This included SEnt1, SEnt2, ReFood Wales, WellNourished, government agents, a local TSSA, an AC, and eventually this researcher (Figure 23).

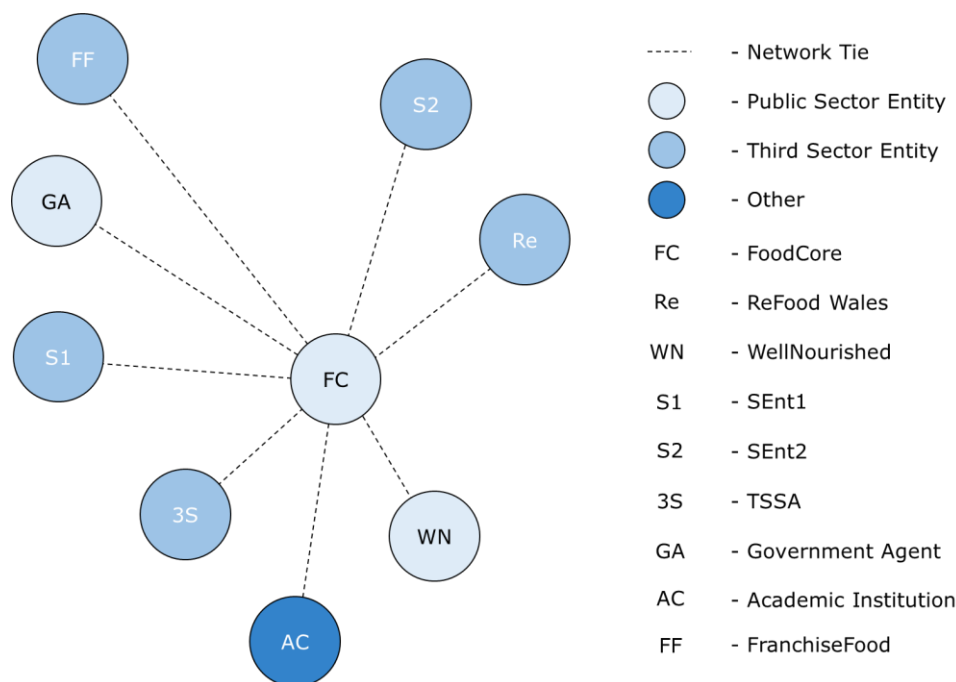
Figure 23: Network creation: Step 1



5.7.2 Step 2: Introduction of the Franchise Model

Having brought stakeholders together under the umbrella of the FPWG, FoodCore then brought the FF franchise model to their attention. The franchise model was first brought to the attention of FoodCore's SFPC by an external source at a national level, who then decided to share the idea locally (Figure 24).

Figure 24: Network creation: Step 2



The franchise model was then introduced during an FPWG meeting by FoodCore’s SFPC, with the intention of exploring the potential for piloting the franchise model within the city.

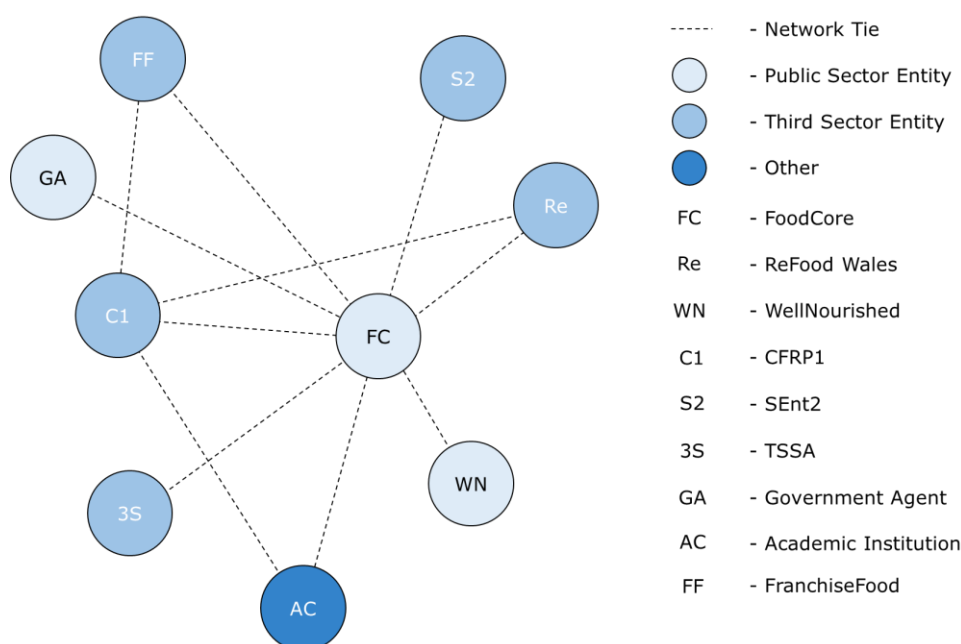
“Without FoodCore we probably wouldn’t have heard of it [The FF franchise], so FoodCore has been an important instigator and that is exactly what networks like FoodCore should be doing because it is about helping organisations” - SEnt1.

5.7.3 Step 3: Market Research and CFRP Trial

Having introduced the franchise model, several efforts were made by FoodCore to establish the feasibility of trialling a CFRP. This included holding discussions with ReFood Wales regarding the viability of supplying a CFRP and finding someone willing to carry out the trial. With a viable supply established and someone found to oversee the trial CFRP in SEnt1, FoodCore played an instigating role in market research, arranging with a

local AC for the feasibility study (FPWG 2018) to be conducted into the community local to what would become CFRP1 (Figure 25).

Figure 25: Network creation: Step 3



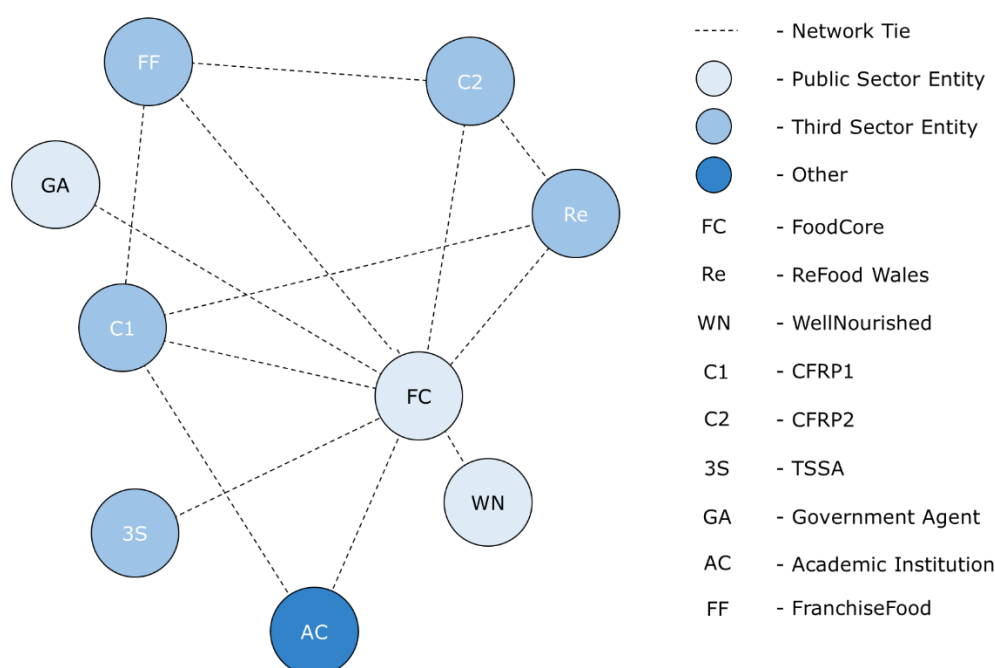
Following the launch of CFRP1, FoodCore proceeded to work closely with the project across its first 6 months in operation, as discussed above. This joint effort was a result of FoodCore's invested interest in CFRP1 as the city's first CFRP, as well as representing a learning opportunity. As such, CFRP1 represented a cornerstone of FoodCore's "*resilience building strategy*", with the expansion of the number of CFRPs being a basic aim of their "*Food Security Strategy*" (FoodCore's SFPC).

5.7.4 Step 4: Network Expansion

Reflecting on what they had learnt from working with CFRP1, FoodCore's focus turned to how CFRP1 could be replicated. This led to meetings with FF to discuss the rollout of the franchise model across the city, including exploring whether franchise support could be delivered locally, as opposed to from the North of England, where FF are based, as well as the idea of pop-up CFRPs at local schools and community hubs supported by CFRP1.

In addition to this, FoodCore worked to identify locations for future CFRPs. This saw FoodCore publicise the success of CFRP1 as well as promoting the model by hosting FPWG meetings at CFRP1, providing attendees with a tour, along with a run through of its process of operations. This sparked interest in the model, supporting FoodCore in identifying potential locations for further CFRPs, including organisations such as churches and housing associations, as well as CFRP2 (Figure 26).

Figure 26: Network creation: Step 4

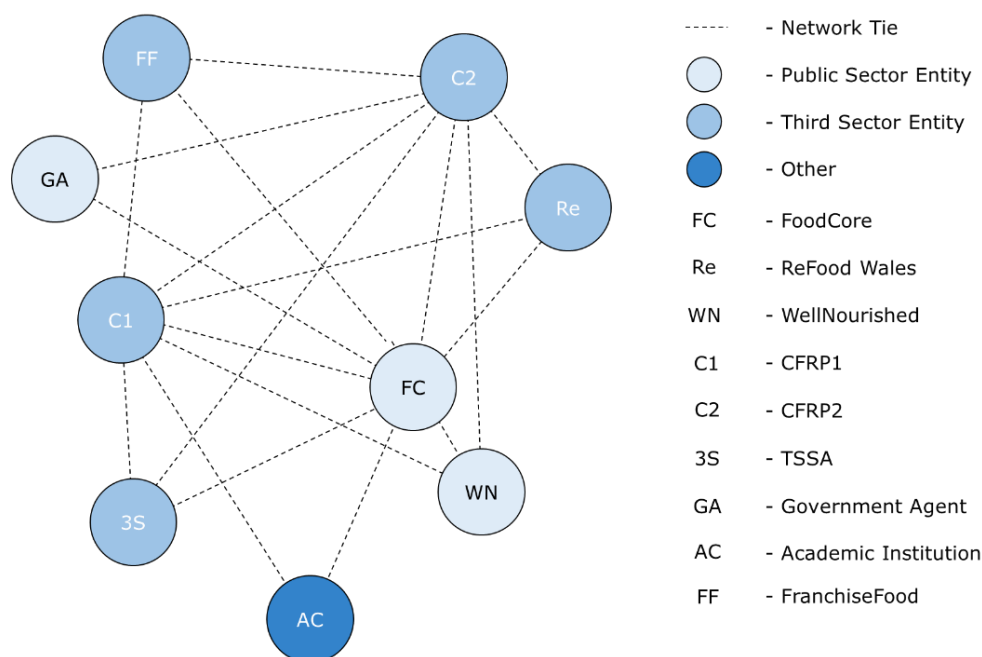


5.7.5 Step 5: Fostering Support and Collaboration

Following the rollout of the CFRPs, FoodCore focused on fostering continued support and collaboration across the network. This included establishing two additional working groups, the CTF in response to the COVID-19 pandemic, and the CFRN following a surge in CFRPs across the city. In line with Scholten et al. (2014), in creating these working groups, FoodCore facilitated vertical and horizontal collaboration through formulating groups consisting of intra-and-inter organisational members of the SC. Furthermore, these groups represented industry associations akin to those identified by Johnson et al. (2013), as well as being a

source of consortium support for the case network (Ali et al. 2017b). Consequently, FoodCore supported the ongoing resilience of the SC by facilitating “*moral, technical and financial support*” for its members (Ali et al. 2017b) as well as trust building (Johnson et al. 2013).

Figure 27: Network creation: Step 5



5.8 Summary

This chapter examined the ties present across the case network and how they benefitted both the CFRPs and the network. Network ties, and the collaboration that occurred through these ties, contributed significantly to the development of the resources, structure and management / decision making capabilities necessary generate SOSCRes. In examining the collaborative efforts of the network, this chapter was able to illustrate how the creation of a network conducive to SOSCRes can be instigated by a single orchestrating organisation. In establishing their FPWG, FoodCore were able to bring together a variety of stakeholders under a common objective of tackling food poverty. In doing so, FoodCore facilitated the creation of both the social food SC at the heart of this study, and the network from which it generated SOSCRes.

CHAPTER 6: DISCUSSION & CONCLUSION

6.1 Introduction

This chapter begins by addressing the primary RQ: “*How can resilience be built into alternative food supply chains that help alleviate the food poverty problem?*”. To do this, a summary of the findings is presented, along with a discussion of these findings in comparison to that identified within the literature, following which, a revised, empirically tested framework for SOSCRes is presented. From here, the theoretical, practical and policy implications of this research are outlined along with its limitations. The chapter concludes by outlining several opportunities for further research.

6.2 Building Social Supply Chain Resilience

This study sought out to answer the following question:

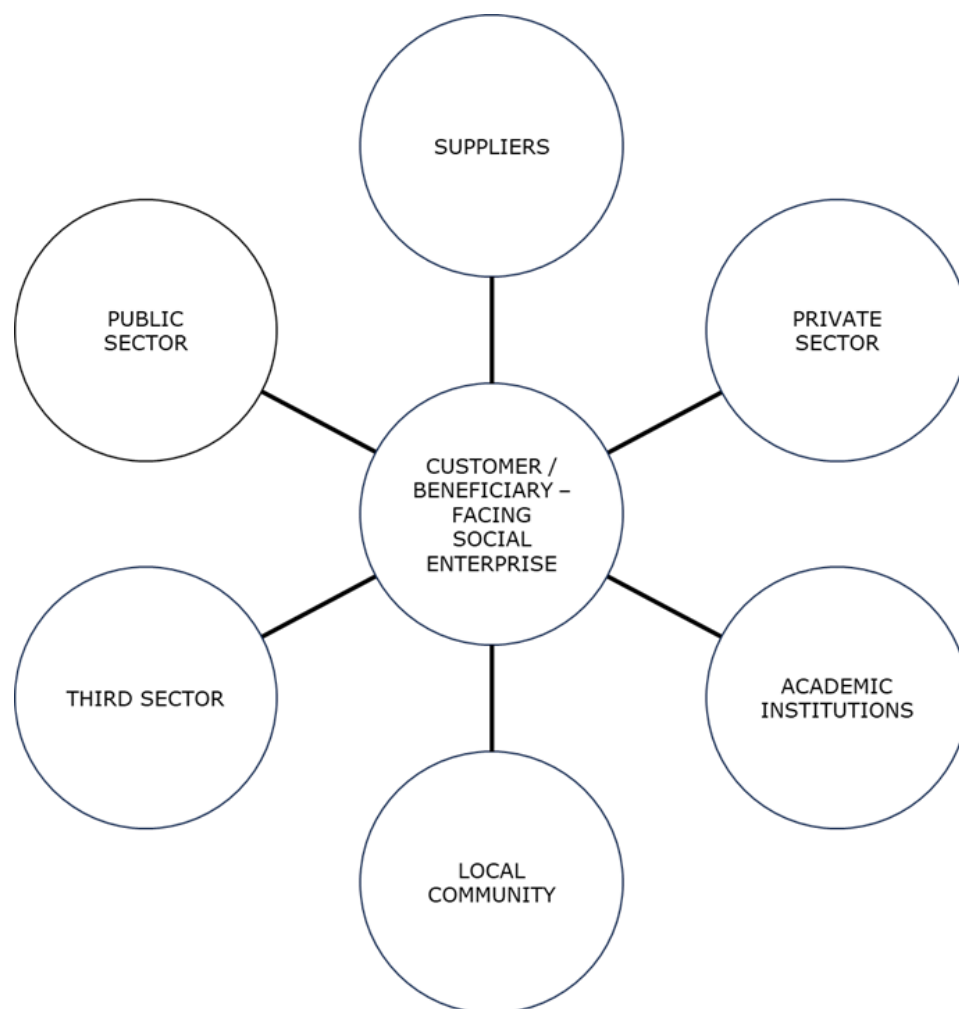
“How can resilience be built into alternative food supply chains that help alleviate the food poverty problem?”

To answer this question, AR was conducted into a social food supply network operating throughout South Wales. This involved comparing a LR-informed conceptual framework for SOSCRes (Figure 11) against that of this network. In doing so, the findings of this study confirmed the presence of each of the strategies / elements shown in Figure 11. In addition to this, novel insight was gained into how these strategies / elements can be implemented, while additional elements were also identified.

Like that of entrepreneurship (Spear 2006; Shaw and Carter 2007), within a social context, SCRes was found to be a collective effort. In developing SOSCRes, the CFRPs collaborated with a wide range of

network stakeholders, including other organisations (Spear 2006; Sharir and Lerner 2006; Peattie and Morley 2008a; Sodhi and Tang 2011) from the public, private (Desa 2010; Ali et al. 2017b; 2018), and third sectors, as well as with both members of the local community as beneficiaries (Spear 2006; Seanor and Meaton 2008; Von der Weppen and Cochrane 2012; Doherty et al. 2014) and members of the local community more generally (Islam 2007) (Figure 22). For conciseness, the key focal SE stakeholder relationships identified have been summarised below (Figure 28).

Figure 28: Key focal SE stakeholder relationships.



This resulted in high levels of information sharing, as well as “*joint relationship effort*” and “*joint knowledge creation*” (Scholten and Schilder 2015, p. 478-479) between nodes across the case network. However, as

hypothesised, there was little evidence of mutual dependency, providing further justification for its earlier omission. While information sharing occurred in several ways, it was most prevalent through the various communication channels of the FPWG, CTF, and CFRN. The most notable form of “*joint relationship effort*” (Scholten and Schilder 2015, p. 478-479) identified within the case network was the franchise model provided by FF (Scholten and Schilder 2015, p. 478-479). Alternatively, “*joint knowledge creation*” was evident in CFRP1 and FoodCore’s collaborative approach to the development of CFRP1 as the case network’s flagship CFRP.

Table 22: ‘Collaboration’ Findings overview

	‘Collaboration’ Findings		
	Information Sharing	“ <i>Joint relationship effort</i> ”	“ <i>Joint knowledge creation</i> ”
In LR?	✓	✓	✓
Example Authors	Christopher and Peck (2004)	Scholten and Schilder (2015, p. 478-479)	
In Empirical Data?	✓	✓	✓
Confirm LR (+) Disconfirm LR (-) Novel (n)	+	+	+
Network Example	Monthly meetings of the FPWG, CTF, and CFRN (+)	Provision of the franchise model by FF to CFRP1-3 (+)	Collaborative approach to CFRP1 between CFRP1 and FoodCore (+)

As hypothesised, the social entrepreneurs represented key human resources for their respective SEs, taking up the role of “*champion*” (Rykaszewski et al. 2013, p. 24), and acting as the ‘face of the CFRPs. In addition to social entrepreneurs, each of the CFRPs utilised a hybrid workforce consisting of both paid and unpaid labour (IFF Research 2005; Sharir and Lerner 2006; Royce 2007; Doherty et al. 2014; Lyon et al. 2019; Roumpi et al. 2020). Furthermore, the CFRPs benefitted from external human resources. This novel insight illustrated how the CFRPs were able to outsource some of their operations to public and third sector organisations. In doing so, the CFRPs were able to both resist and respond to disruptions relating to the delivery of food. For example, with the support of a mental health charity, CFRP4 were able to collect additional food supplies to that delivered by ReFood Wales, while the local probation service enabled CFRP2 to respond to a need for increased delivery capacity as a result of local lockdown measures.

Table 23: ‘Human Resources’ Findings overview

	‘Human Resources’ Findings			
	The Social Entrepreneur	Employees (Paid Labour)	Volunteers (Unpaid Labour)	External Human Resources
In LR?	✓	✓	✓	X
Example Authors	Sharir and Lerner (2006); Peattie and Morley (2008a; 2008b); Young and Lecy (2014)	Sharir and Lerner (2006); Peattie and Morley (2008a; 2008b)	Sharir and Lerner (2006); Royce (2007); Peattie and Morley (2008a; 2008b);	N/A

			Doherty et al. (2014)	
In Empirical Data?	✓	✓	✓	✓
Confirm LR (+)				
Disconfirm LR (-)	+	+	+	n
Novel (n)				
Network Example	• SEnt1 • SEnt2 • SEnt3 • SEnt4 (+)	Each CFRP utilised a hybrid workforce (+)		• Probation service (n) • Placement students (n) • Mental health charity (n)

In line with the conceptual framework, each of the CFRPs leveraged multiple sources of finance (Shaw and Carter 2007; Lyon et al. 2019; Social Enterprise UK 2019) across their evolutionary cycle (Harding 2007), including grants, donations and memberships. The case network provided novel insight into how stakeholders can represent funding gatekeepers akin to that of the support agencies proposed by Seanor and Meaton (2008). This was achieved through signposting the CFRPs to funding opportunities, collaborating with them on funding bids, and supporting them in evidencing social impact. In doing so, these stakeholders supported the CFRPs to both access grant funding and move away from a reliance on such funding. This, in turn, supported the CFRPs to minimise the risk of funding gaps and an over-reliance on grant funding.

Table 24: 'Finance' Findings overview

	'Finance' Findings			
	Grant Funding	Donations	Memberships	Funding Gatekeepers
In LR?	✓	✓	✓	✓
Example Authors	BRASS (2004); IFF Research (2005); Harding (2007); Shaw and Carter (2007); Peattie and Morley (2008a; 2008b); Social Enterprise UK (2019)			
In Empirical Data?	✓	✓	✓	✓
Confirm LR (+)	+	+	+	+ / n
Disconfirm LR (-)				
Novel (n)				
Network Example	Each of the CFRPs utilised grant funding (+)	Each of the CFRPs utilised donations (+)	Each of the CFRPs sourced funding through memberships (+)	Funding gatekeepers supported the CFRPs to source finance through partnership bids, evidencing and signposting (n)

As a PPSC, sustained access to perishable food products was critical to the continuation of the CFRP's services. Primary supplier ReFood Wales were a

vital source of produce for each of the CFRPs. However, following disruptions to their own SC due to Brexit / COVID, CFRPs experienced a decline in the variety and quality of the produce received. The CFRPs were able to respond to this disruption through redundancy in the form of multi-sourcing. Furthermore, novel insight was gained into how FF were able to increase the legitimacy of the franchisee CFRPs through providing franchise branding material. This branding material added an element of professionalism to operations, thus combatting the stigma associated with alternative food provision.

Table 25: 'Materials' Findings overview

	'Materials' Findings	
	Perishable Food Products	Franchise Branding Material
In LR?	✓	x
Example Authors	Ali et al. (2018)	N/A
In Empirical Data?	✓	✓
Confirm LR (+) Disconfirm LR (-) Novel (n)	+	n
Network Example	Each of the CFRPs sourced perishable food products via ReFood Wales. This was coupled with multi-sourcing from other local suppliers (+)	The franchisee CFRPs received franchise branding material from FF, which resulted in increased legitimacy (n)

Transport, as expected, played a crucial role in accessing perishable food products. While ReFood Wales were responsible for delivering supplies to the CFRPs, they did so under limited delivery capacity. Both volunteers and external human resources (e.g. the local probation service, mental health charity and voluntary transport service), provided the CFRPs with access to transport which could be used to collect additional supplies. As a form of redundancy, these alternative modes of transport enhanced flexibility, supporting the CFRPs to both resist and respond to disruptions to food supply.

Table 26: 'Transport' Findings overview

	'Transport' Findings		
	Cold Chain Logistics (CCL)	Volunteers	External Transport Services
In LR?	✓	✗	✗
Example Authors	Ali et al. (2018)	N/A	
In Empirical Data?	✓	✓	✓
Confirm LR (+) Disconfirm LR (-) Novel (n)	+	n	n
Network Example	Food was delivered to the CFRPs by primary supplier ReFood Wales with the use of CCL. (+)	Volunteers used their personal vehicles to collect and deliver food. (n)	Some of the CFRPs benefited from external transport services such as a mental Health charity and the probation Service. (n)

In line with the conceptual framework, I.T. played a fundamental role in aiding collaboration across the case network (Jain et al. 2017). Crucially, I.T. enabled the case network to continue to collaborate despite the COVID-19 pandemic, which severely hindered communication, particularly face-to-face communication, because of lockdown measures. For example, through Zoom, monthly meetings of the FPWG and CFRN were able to continue. In addition to aiding collaboration, the case network provided novel insight into how I.T. can contribute to finance. FF software supported the franchisee CFRPs to measure performance and social impact through collecting customer and market data. This data could then be used to strengthen funding applications, again minimising the risk of funding gaps.

Table 27: 'I.T.' Findings overview

	'I.T.' Findings	
	Aiding Collaboration	Evidencing
In LR?	✓	x
Example Authors	Jain et al. (2017); Adobor and McMullen (2018); Dubey et al. (2019)	N/A
In Empirical Data?	✓	✓
Confirm LR (+) Disconfirm LR (-) Novel (n)	+	n

Network Example	Microsoft Outlook and Teams, as well as Zoom, were widely used to communicate across the network (+)	Market data from FF software used in grant application (n)
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Social capital was evident across the case network in the form of structural, cognitive and relational capital (Johnson et al. 2013; Golgeci and Kuivalainen 2020; Polyviou et al. 2020). In line with the conceptual framework, structural capital was generated through close geographical proximity with all but one of the nodes in the case network being situated in the South Wales area. This contributed to collaboration by enabling face-to-face meetings. Again, in line with the conceptual framework, cognitive capital was generated through low turnover and long employee turnover, as well as through involvement in industry associations (Johnson et al. 2013). Involvement in industry associations primarily occurred through network-wide involvement in FoodCore's FPWG, CTF, and CFRN. The case network provided new insight into the development of cognitive capital through long employee tenure. Each of the CFRPs displayed close relationships between colleagues, along with an accumulation of knowledge and experience (Polyviou et al. 2020) despite being relatively young. This was due to most of the workforce (the social entrepreneur, employees and volunteers) having worked together on other projects. Finally, relational capital was evident through applicable experience. In line with the literature, this experience gave the CFRPs credibility, coupled with dense personal networks from which they sourced a variety of resources (Sharir and Lerner 2006; Desa 2010; Von der Weppen and Cochrane 2012). Most notably, these personal networks represented a source of human resource, especially volunteers. The case network provided further insight into how the CFRPs benefitted from relational capital, illustrating how dense networks could be leveraged to source contingencies in the form of back-ups sites. This enhanced the ability to

respond to disruptions relating to premises, such as structural damage, or flooding.

Table 28: 'Social Capital' Findings overview

	'Social Capital' Findings		
	Structural Capital	Cognitive Capital	Relational Capital
In LR?	✓	✓	✓
Example Authors	Johnson et al. (2013); Golgeci and Kuivalainen (2020); Polyviou et al. (2020)		
In Empirical Data?	✓	✓	✓
Confirm LR (+) Disconfirm LR (-) Novel (n)	+	+ / n	+ / n
Network Example	Close geographical proximity (+)	- Industry Associations (+) - Long Employee Tenure (n)	- Experience (+) - Contingency Planning (e.g. Back-up Sites) (n) - Clustering (n)

The existence of trust was inferred from the presence of collaboration across the case network. This was supported by limited evidence of formal agreements, which, according to Seanor and Meaton (2008) would be needed for collaboration to take place in the absence of trust. While trust is viewed as conducive to collaboration, a novel insight gained from this study was the possibility for trust to represent a risk. FoodCore displayed considerable trust in ReFood Wales' ability to meet the supply needs of the CFRPs for the foreseeable future. However, the CFRPs

experienced a decline in the quality and variety of the food received from ReFood Wales as a result of the COVID-19 pandemic. Fortunately, the CFRPs were able to respond to this disruption through multi-sourcing, however, it highlights the potential risk of trust when it comes to critical nodes.

Table 29: 'Trust' Findings overview

	'Trust' Findings		
	Cross-network collaboration	Limited evidence of formal agreements	Trust as a risk
In LR?	✓	✓	x
Example Authors	Seanor and Meaton (2008); Johnson et al. (2013)		N/A
In Empirical Data?	✓	✓	✓
Confirm LR (+) Disconfirm LR (-) Novel (n)	+	+	n
Network Example	- Close geographical proximity (+) - High node density (+)	Memorandum of understanding signed by the franchisee CFRPs. (+)	Decline in the quality and variety of the food received from ReFood Wales. (n)

The amalgamation of the necessary skills was found to be a collective effort. The social entrepreneurs represented a key source of expertise for their respective CFRPs, with each being experienced in tackling social

issues. In addition to their experience in tackling social issues, there was evidence that the skills they leveraged crossed boundaries, with SEnt3 using their experience and skills from their public sector role to the benefit of CFRP3. Through their network ties, the CFRPs were also able to access financial expertise, specifically in applying for and securing grant funding. This expertise supported the CFRPs in accessing the finance necessary to operate. In doing so, they again supported the CFRPs to reduce the possibility of funding gaps. In addition to accessing finance, the CFRPs also benefitted from support in attracting members. FF supported each of the franchisee CFRPs to build an online presence, setting up various social media pages for the projects. While marketing is cited as an area of expertise often lacking among SEs (Sodhi and Tang 2011; White et al. 2018; Social Enterprise 2019), there was evidence to suggest that this expertise was not needed due to a lack of competition. Instead, each of the CFRP's membership base grew naturally through the word of mouth of both members and community members generally.

Table 30: 'Skills / Expertise' Findings overview

	'Skills / Expertise' Findings		
	Tackling Social Issues	Finance	Marketing
In LR?	✓	✓	X
Example Authors	Sharir and Lerner (2006); Spear (2006); Shaw and Carter (2007); Peattie and Morley (2008a; 2008b); Desa (2010); Von der Weppen and Cochrane (2012); Social Enterprise UK (2019)		N/A
In Empirical Data?	✓	✓	✓

Confirm LR (+) Disconfirm LR (-) Novel (n)	+	+	n
Network Example	Each of the social entrepreneurs were experienced in tackling social issues (+)	Expertise in applying for grant funding (+)	• Online presence (n) • Word of mouth (n) • Referrals (n) • Clustering (n)

SC understanding / knowledge was evident across the case network in the form of strategic, tactical, and operational knowledge (Christopher and Peck 2004), as well as an understanding of the political, cultural and territorial context in which the SC is embedded (Tukamuhabwa et al. 2017). This knowledge and understanding were rooted in collaboration, specifically information sharing, primarily occurring through the FPWG, CTF, and CFRN communication channels. This knowledge enhanced the SC's ability to both resist and respond to disruptions. For example, in sharing strategic knowledge surrounding the COVID-19 pandemic, such as impending lockdown measures, the CFRPs were able to prepare appropriately.

Table 31: 'SC Understanding / Knowledge' Findings overview

	'SC Understanding / Knowledge' Findings			
	Strategic Knowledge	Tactical Knowledge	Operational Knowledge	Political, cultural and territorial context
In LR?	✓	✓	✓	✓

Example Authors	Christopher and Peck (2004); Tukamuhabwa et al. (2017)			
In Empirical Data?	✓	✓	✓	✓
Confirm LR (+)				
Disconfirm LR (-)	+	+	+	+
Novel (n)				
Network Example	Trends, forecasts, and issues (+)	Supply and demand knowledge (+)	Physical structure of the SC and inventory levels (+)	Brexit and COVID-19 updates (+)

In line with the conceptual framework presented, the holding of surplus stock was minimal across the case network, attributable to the cost associated, coupled with its inappropriateness due to the perishable nature of the SC. Instead, redundancy primarily took the form of multi-sourcing, as discussed above. In addition to providing redundancy in the form of alternative modes of transport, human resources also contributed to the presence of redundancy through the utilisation of broad job descriptions. The use of broad job descriptions was enabled in part by the willingness of human resources to undertake a variety of activities as and when required. In doing so, further redundancy was evident among the CFRPs in the form of a multi-skilled workforce. Furthermore, novel insight was gained into the way CFRPs used waiting lists as a form membership redundancy. Due to the lack of competition, the CFRPs were able call upon those on its waiting list whenever membership visit declined. This

illustrates how waiting lists enabled the CFRPs to respond to disruption in membership attendance.

Table 32: 'Redundancy' Findings overview

	'Redundancy' Findings				
	Multi-sourcing	Broad Job Descriptions	Multi-skilled Workforce	Alternative modes and routes of transportation	Waiting Lists
In LR?	✓	✓	✓	✓	X
Example Authors	Johnson et al. (2013); Kamalahmadi and Parast (2016); Sa et al. (2020); Sawyerr and Harrison (2020)				N/A
In Empirical Data?	✓	✓	✓	✓	✓
Confirm LR (+)					
Disconfirm LR (-)	+	+	+	+	n
Novel (n)					
Network Example	Each of the CFRPs engaged in multi-sourcing. (+)	Staff (both paid and unpaid) undertook a variety of tasks (+)	Broad job activities led to a multi-skilled workforce (+)	Volunteer's personal vehicles and transportation charities (+)	Membership waiting lists (n)

In line with the conceptual framework, the case network demonstrated a limited geographical scope, with the social and commercial activities of the CFRPs tied to their local communities. As expected, this resulted in close geographical proximity and high node density across the case network. By being situated in the communities they service, the CFRPs were able to generate trust throughout said communities as a result of the positive impact they were working to achieve. As the primary supplier to each of the CFRP in the network, ReFood Wales represented a critical node. As suggested under the conceptual framework, this criticality was reduced through redundancy, specifically multi-sourcing. While under the conceptual framework it was argued that node complexity should be minimised except for through multi-sourcing, node complexity was found to be considerably higher within the case network. This was attributed to the vast amount of collaboration that took place across the case network. In addition to this, an additional key element of SC configuration was identified: Clustering. Through clustering the CFRPs were able to mitigate a reluctance among funding bodies to fund premises acquisition (BRASS 2004; Sharir and Lerner 2006). A further financial benefit of clustering was the sharing of utility bills (GHK 2005; Peattie and Morley 2008a). The CFRPs were also able to reap marketing benefits through clustering, such as leveraging already established media presence such as websites and social media pages.

Table 33: 'Configuration' Findings overview

	'Configuration' Findings				
	Scope	Density	Complexity	Criticality	Clustering
In LR?	✓	✓	✓	✓	X
Example Authors	Craighead et al. (2007); Shaw and Carter (2007); Falasca et al. (2008); Peattie and Morley (2008a); Chowdhury and Quaddus (2017)				N/A

In Empirical Data?	✓	✓	✓	✓	✓
Confirm LR (+)					
Disconfirm LR (-)	+	+	n	+	n
Novel (n)					
Network Example	Social and commercial activities of CFRP1-3 tied to their local communities (+)	High node density and close geographical proximity (+)	High complexity due to reliance on collaboration (n)	Suppliers, reduced through multi-sourcing (+)	Clustering occurred through sharing premises with other organisations. (n)

In line with the conceptual framework, SC visibility was primarily achieved through vertical collaboration. Each of the CFRPs collaborated vertically with both their primary supplier, ReFood Wales, as well as the local community as the target beneficiaries of their services (Johnson et al. 2013; Leat and Revoredo-Giha 2013; Scholten et al. 2014; Manning and Soon 2016; Hendry et al. 2019), satisfying calls for increased vertical collaboration, both upstream and downstream, within PPSCs (Ali et al. 2017b; 2018). SC visibility further benefitted from collaboration with third and public sector entities, including FoodCore and local council representatives. These stakeholders kept the SC informed about the latest developments regarding COVID-19 and Brexit, thus supporting the CFRPs to resist and respond to large scale disruptions to the UK food SC.

Table 34: 'Visibility' Findings overview

	'Visibility' Findings	
	Vertical Collaboration	Horizontal Collaboration
In LR?	✓	✓
Example Authors	Tukamuhabwa et al. (2015); Adobor and McMullen (2018); Stone and Rahimifard (2018)	
In Empirical Data?	✓	✓
Confirm LR (+) Disconfirm LR (-) Novel (n)	+	+
Network Example	Vertical collaboration occurred between the CFRPs and ReFood Wales; between the CFRPs and their members (+)	Horizontal collaboration between occurred between the CFRPs: CFRP1 & CFRP2 (+)

Each of the CFRPs engaged in local sourcing. In doing so, velocity was enhanced, ensuring that perishable food products were sourced in a timely manner. Furthermore, as hypothesised, velocity was enhanced within the case network through high node density. This ensured that, in addition to sourcing food in a timely manner, they were also able to distribute the food effectively.

Table 35: 'Velocity' Findings overview

	'Velocity' Findings	
	Local Sourcing	High Node Density
In LR?	✓	✓
Example Authors	Christopher and Peck (2004); Wicher and Lenort (2012); Saenz et al. (2018)	
In Empirical Data?	✓	✓
Confirm LR (+) Disconfirm LR (-) Novel (n)	+	+
Network Example	Each of the CFRPs engaged in local sourcing (+)	There was close geographical proximity with all but one of the nodes situated in South Wales (+)

Each of the CFRPs were governed by a management team / committee board. In doing so, they were able to mitigate against over-involvement by the social entrepreneur, coupled with alleviating any uncertainty that would accompany their departure. This was supported by each of the social entrepreneurs reducing their involvement in the CFRPs, while SEnt2 left the organisation altogether. This was further supported by the distribution of responsibility, which saw the involvement of all human resources in the management of CFRPs. Consequently, as expected, each of the CFRPs were run under a multi-stakeholder governance structure.

Table 36: 'Governance' Findings overview

	'Governance' Findings		
	Management Teams / Committee Boards	Delegated Responsibility	Multi-Stakeholder Governance Structure
In LR?	✓	✓	X
Example Authors	Shaw and Carter (2007); Spear et al. (2009); Von der Weppen and Cochrane (2012); Social Enterprise UK (2019)		
In Empirical Data?	✓	✓	✓
Confirm LR (+) Disconfirm LR (-) Novel (n)	+	+	+
Network Example	Each of the CFRPs had a management team / committee board (+)	Responsibility was delegated among volunteers in each of the CFRPs. (+)	Governance involved the social entrepreneurs, employees, volunteers and members (+)

With limited financial resources, the CFRPs primarily focused on recruiting volunteers. Despite being situated in areas of high deprivation, where SEs experience the greatest difficulty in filling vacancies (Social Enterprise UK 2019), none of the CFRPs struggled with recruitment. This was attributed to CFRP's novel approach to recruitment, opting to recruit primarily from

the membership base. Consequently, each of the CFRP's workforce were predominantly from the local area. In addition to recruiting volunteers from the membership base, each of the CFRPs benefitted from volunteer referrals, suggesting that the recruitment of volunteers was a collaborative effort. Like recruitment, the training of both paid and unpaid labour was also a collaborative effort, with the CFRPs accessing training from a variety of NPOs, including WellNourished, FF and TSSA. This training contributed to the development of redundancy through facilitating the development of a multi-skilled workforce. With the presence of volunteers, HRM involved managing a hybrid workforce. This involved establishing a relationship with volunteers based on mutual benefit, whereby the CFRPs explored how they could be of equal benefit to the volunteers. The managing of a hybrid workforce also benefitted from broad job descriptions, which gave volunteers freedom over the activities they carried out, thus managing an expectation among volunteers to not be managed through traditional hierarchical bureaucratic norms (Molyneux 2004). The managing of a hybrid workforce further benefitted from recruiting from the membership base. In doing so, the CFRPs were able to balance both member and public interest.

Table 37: 'HRM; Findings overview

	'HRM' Findings		
	Recruitment	Training	Managing a Hybrid Workforce
In LR?	✓	✓	✓
Example Authors	BRASS (2004); Molyneux (2004); Royce (2007); Peattie and Morley (2008a; 2008b); Von der Weppen and Cochrane (2012)		
In Empirical Data?	✓	✓	✓

Confirm LR (+) Disconfirm LR (-) Novel (n)	+ / n	+	+
Network Example	Each of the CFRPs recruitment members through Referrals (n)	Training was provided to the CFRPs by WellNourished; FF; TSSA (+)	Each of the CFRPs utilised both paid and unpaid labour (+)

While formal planning is argued to be lacking among SEs (Sharir and Lerner 2006; Royce 2007), a significant amount of time and effort was found to be invested into planning by the case network. This could be attributed to the presence of an established organisation development roadmap in the form of the franchise model. A core component of the planning process was market research. Market research was found to occur through market testing and community research. Integral to both these approaches to market research was the involvement of the local community.

Table 38: 'Planning' Findings overview

	'Planning' Findings			
	Market Research	Financial Planning	Operational Planning	Upscaling
In LR?	✓	✓	✓	✓
Example Authors	Sharir and Lerner (2006); Islam (2007); Von der Weppen and Cochrane (2012); Rykaszewski et al. (2013)			Seanor and Meaton (2008)

In Empirical Data?	✓	✓	✓	✓
Confirm LR (+) Disconfirm LR (-) Novel (n)	+	+ / n		+
Network Example	- Community research (+) - Market Testing (+)	- Market Testing (+) - Franchise model (n)		Plans to increase membership among CFRPs

Risk management across the case network consisted of 3 components, (1) the assessment of vulnerabilities, (2) the identification of risks, and (3) the implementation of mitigation and prevention strategies. The case network provided several novel insights into the risks associated with alternative food supply chain provision. Food supply and health & safety risks were described as more 'conventional' risks, while increased inequality and health problems were more specific to alternative food provision. In addition to these, the risk of reputational damage and sunken time and costs were pronounced as a result of being a social impact SC. The case network was able mitigate these risks in several ways. Firstly, the case network was able mitigate risk around food supply through multi-sourcing. Planning, specifically market research, was found to play a crucial in mitigating risks associated with sunken time and costs. Through training, specifically nutrition education / training, the case network was able mitigate against inadvertently increasing inequality and health problems whilst in the pursuit of tackling food poverty.

Table 39: 'Risk Management' Findings overview

	'Risk Management' Findings	
	Anticipation	Mitigation & Prevention
In LR?	✓	✓
Example Authors	Sheffi and Rice (2005); Chowdhury and Quaddus (2016); Adobor (2019); Sawyerr and Harrison (2020)	
In Empirical Data?	✓	✓
Confirm LR (+) Disconfirm LR (-) Novel (n)	+ / n	+
Network Example	• Assessment of vulnerabilities • Risk Identification ○ Food supply (n) ○ Health & Safety (n) ○ Increased inequality and additional health problems (n) ○ Sunken Time & Costs (n) ○ Reputational Damage (+)	• Multi-sourcing (+) • Nutrition education / training (n) • Social distancing (n) • Market research (+) • Membership model (n)

With nodes at all levels of the SC found to be engaging in risk management, an RMC was evident in the case network. This was believed to be facilitated in part by the COVID-19 pandemic, which, as a result of its ever-present health risks, ensured risk management was at the forefront of the minds of the network members. In addition to an RMC, there was also evidence of a culture of distributed responsibility, achieved through the presence of multi-stakeholder governance structures.

Table 40: 'Culture' Findings overview

	'Culture' Findings	
	RMC	Distributed Responsibility
In LR?	✓	✓
Example Authors	Christopher and Peck (2004); Rykaszewski et al. (2013); Adobor (2019); Polyviou et al. (2020)	
In Empirical Data?	✓	✓
Confirm LR (+) Disconfirm LR (-) Novel (n)	+	+
Network Example	A preoccupation with risk was present across the network, facilitated in part by the COVID pandemic (+)	A culture of distributed responsibility was present among the CFRPs, with there being delegated responsibility among volunteers (+)

Flexibility was evident across the case network in the form of both operational and sourcing flexibility. Operational flexibility was generated

through a combination of process flexibility, conversion flexibility, order fulfilment flexibility, flexible labour arrangements and prioritisation. Process flexibility was achieved through minimalistic processes (Patel and Mehta 2011). These minimalistic processes combined with back-up sites to generate conversion flexibility. Flexible labour arrangements were facilitated by decentralised management and broad job descriptions. When it came to the distribution and customer-facing activities (Sheffi and Rice 2005) of the CFRPs, flexibility came in the form of prioritisation. Prioritisation was based on vulnerability, opposed to profitability or importance, with those identified as being most in-need receiving priority treatment in the form of quicker access to membership. This was done with the support of collaboration, using referrals from other organisations to gauge need. Sourcing flexibility was generated through multi-sourcing, coupled with flexible contract arrangement. Flexible contract arrangements were facilitated by ReFood Wales, who worked extensively to adapt deliveries to the individual needs of the CFRPs.

Table 41: 'Flexibility' Findings overview

	'Flexibility' Findings	
	Operational Flexibility	Sourcing Flexibility
In LR?	✓	✓
Example Authors	Stone and Rahimifard (2018); Sawyerr and Harrison (2020)	
In Empirical Data?	✓	✓
Confirm LR (+) Disconfirm LR (-)	+	+

Novel (n)		
Network Example	• Process flexibility (+) • Conversion flexibility (n) • Order fulfilment flexibility (n) • Decentralised management (+) • Flexible labour arrangements (+) • Prioritisation (+)	• Multi-sourcing (+) • Flexible contract arrangements (+)

Finally, the case network displayed agility through the presence of both visibility and velocity. Hence, agility is believed to be rooted in vertical collaboration between the CFRPs and both ReFood Wales and the local community (visibility), and high node density and local sourcing (velocity).

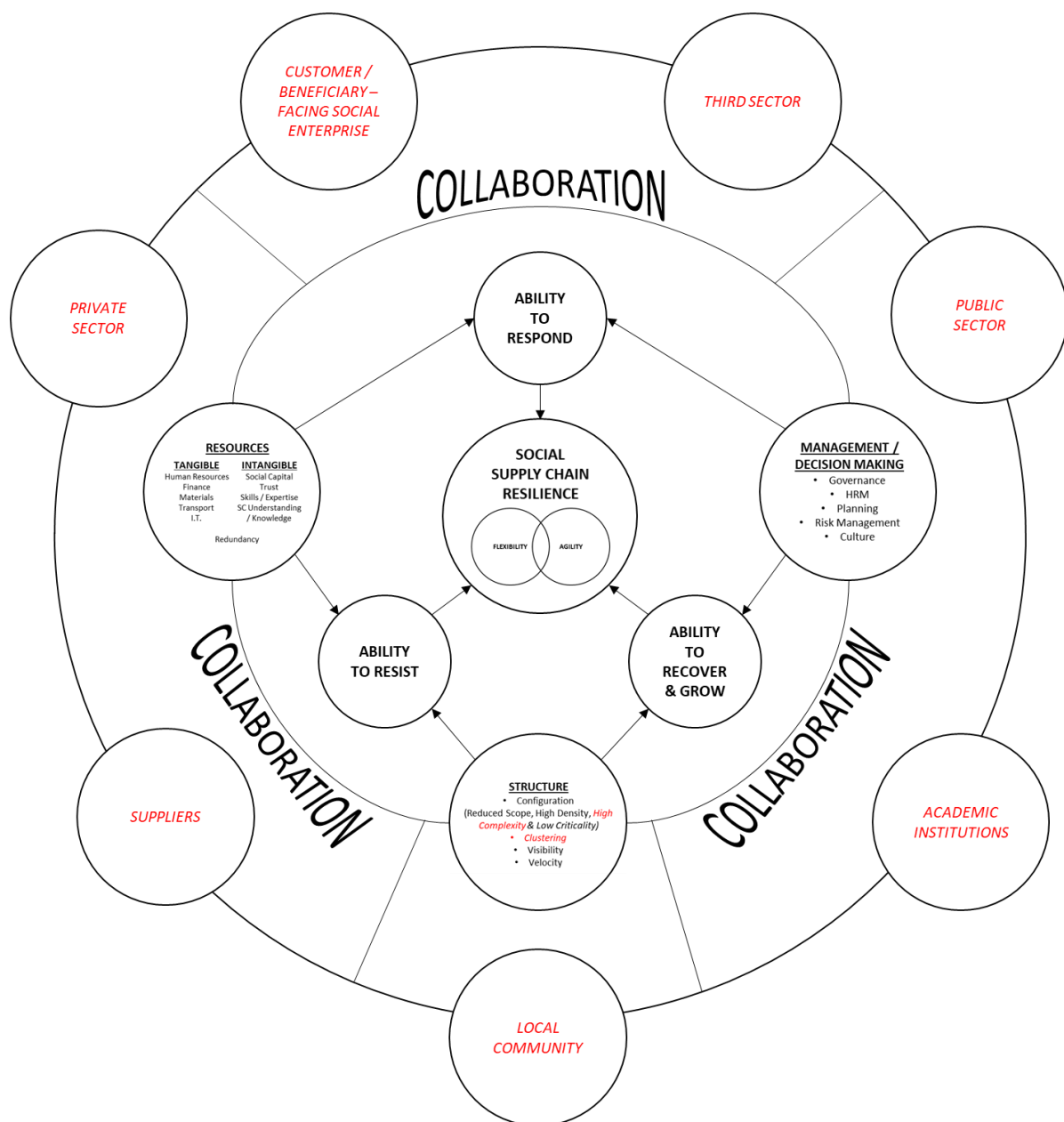
Table 42: 'Agility' Findings overview

	'Agility' Findings	
	Visibility	Velocity
In LR?	✓	✓
Example Authors	Kamalahmadi and Parast (2016); Purvis et al. (2016)	
In Empirical Data?	✓	✓
Confirm LR (+) Disconfirm LR (-)	+	+

Novel (n)		
Network Example	• Vertical collaboration (+) • Horizontal collaboration (+)	• High node density (+) • Local sourcing (+)

From these findings, this research was able to validate and refine the LR-informed conceptual framework for SOSCRes (Figure 11). In doing so, this study presents an empirically tested framework for SOSCRes (Figure 29).

Figure 29: Empirical framework for SOSCRes.



As Figure 29 illustrates, each of the key elements and strategies identified in the conceptual framework were validated by the case network. In validating these elements / strategies, the case network provided significant novel insight into how these elements / strategies can be manifested. Along with this validation, this research was able to identify another significant element in the development of SOSCRes: Clustering, while further clarification was provided surrounding configuration and the existence of high node complexity. Furthermore, in examining the network ties that benefitted both the CFRPs and the network (Figure 22), this study was able to elaborate on the conceptual framework and the role of collaboration (Figure 11) by incorporating what were found to be the key focal SE stakeholder relationships (Figure 28) in the development of SOSCRes.

With this empirically tested framework for SOSCRes (Figure 29), this research answers the primary RQ: 'How can resilience be built into alternative food supply chains that help alleviate the food poverty problem?'. Here, it is argued that to build resilience into an alternative food SC, social impact SCs must become both flexible and agile, developing the ability to resist, respond, and recover (as well as possibly grow) following a disruption. It is argued that to do this requires a combination of elements relating to resources, structure and management / decision making (Figure 29).

Resources elements include both the tangible and intangible (Figure 29). Tangible resources deemed crucial include; sufficient human resources (social entrepreneurs, staff and volunteers), multiple sources of finance (grants, donations and memberships), access to perishable food products, transportation for collecting supplies and I.T. Alternatively, intangible resources required include; social capital (structural, cognitive and relational capital), trust between nodes within the SC network, a combination of skills / expertise (experience in tackling social issues,

financial and marketing expertise) and knowledge and understanding of the SC (strategic, tactical and operational knowledge, political, cultural and territorial understanding). Furthermore, redundancy is required both tangibly (through multi-sourcing and alternative modes of transport) and intangibly (through broad job descriptions and a multi-skilled workforce).

To develop SOSCRes, a SC should be configured in such a way that is conducive to the development of resilience. Here, it is argued that alternative food SCs benefit from reduced scope, high density (by being situated close to their consumers / beneficiaries), high complexity (through increased collaboration), low criticality (through multi-sourcing) and clustering (through co-habitation). In addition to configuration, other structural elements conducive to SOSCRes include visibility (through vertical collaboration with suppliers and target beneficiaries) and velocity (through high node density, including local sourcing).

Finally, several management / decision making elements were found to be conducive to the development of resilience within an alternative food SC context (Figure 29). In regard to governance, the presence of a management team / committee board prevents an over-reliance on the social entrepreneur. Key elements of HRM within an alternative food SC include recruiting a sufficient number of volunteers, training and managing a hybrid workforce (due to the presence of volunteers). In addition to governance and HRM, planning, in particular market research (through market research / testing), risk management (through an assessment of vulnerabilities and the implementation of mitigation / prevention strategies) and an appropriate culture (one of risk management and distributed responsibility) were all identified as key elements of management / decision making (Figure 29).

Bringing together these resource, structure and management / decision making elements within an alternative food SC is believed to be a

collaborative effort, requiring seven distinct stakeholders: the customer / beneficiary-facing SE (1), their local community (2) and suppliers (3), the public (4), private (5) and third (6) sectors, and academic institutions (7). Such a collaborative effort involves information sharing, "*joint relationship effort*" and "*joint knowledge creation*" (Scholten and Schilder 2015, p. 478-479), whilst avoiding mutual dependencies.

6.3 Research Implications

6.3.1 Theoretical Contributions

This research provides several contributions to the body of literature. Firstly, to the researcher's knowledge, this is the first study of its kind to reconceptualise SCRes within a SE context. In doing so, this research contributes to both the SCRes and SE literature.

This research broadens the SCRes literature by taking its well-established concepts, which are predominantly grounded in for-profit contexts, and adapting them to the SE context. In doing so, this research was able to demonstrate how SCRes differs for SEs compared to for-profit organisations. Both the strategies for, and elements of SCRes found in the literature were found to play an integral role in developing SOSCRes, suggesting that they are cross contextual. However, it was in how these strategies / elements presented themselves, coupled with the introduction of additional elements, that the SE context was found to be influential. For example, SEs operate under stricter financial restrictions compared to traditional businesses, consequently, for SEs, SCRes involves a reliance on unpaid labour coupled with a greater reliance on collaboration and social capital. In contrast to the SCRes literature, the presence of volunteers, and their willingness to undertake a variety of roles, was integral to the presence of flexibility across the case network. The intrinsic link between volunteers and the locations that the SEs are set-up in and serve is just one example of why high node density is of a greater importance to SCRes within a SE context compared to for-profit contexts where there is more of a debate both for and against high node density. This suggests that the well-established concepts of SCRes provide a sound basis for creating SCRes in other contexts. The question then becomes what other elements specific to that context need to be taken into consideration. In presenting the empirical framework for social supply chain resilience, this research addresses a fundamental gap in operations and SC management

research that reflects an underdeveloped focus on SEs (Pullman et al. 2018; Longoni et al. 2019). Furthermore, this research answers calls for increased use of both case-based (Bhamra et al. 2011; Kamalahmadi and Parast 2016; Sawyerr and Harrison 2020) and longitudinal case (Tukamuhabwa et al. 2015; Kochan and Nowicki 2018) approaches to SCRes research. Moreover, with the adoption of SNT, this research contributes to the understanding of SCRes using alternative theories (Scholten et al. 2020).

From a SE perspective, this study expands on initial explorations of social impact supply chains, which have focused on how SEs can establish and manage them (Pullman et al. 2018; Longoni et al. 2019). This was done by addressing the research gap on how they can become resilient. Furthermore, SE research (and much of the research agenda setting around SE) is rather dominated by 'origin stories' (which this study also contributes to), i.e. where SEs come from, the gaps they address, the opportunities they recognise and exploit, how they secure resources and how they organise and innovate (e.g. Haugh 2005; Shaw and Carter 2007; Defourny and Nyssens 2010; Di Domenico et al. 2010; Cherrier et al. 2018). However, there is less clear understanding of how they survive. Although there is more research now on reasons for SE failure and dissolution (e.g. Seanor and Meaton 2008; Rykaszewski et al. 2013; Gras and Mendoza-Abarca 2014; Haugh et al. 2022), there is still a gap in our understanding of what SEs must do to be resilient and survive. There is a recognition of the need for more research into SE resilience, but existing studies have tended to focus on financial resilience (e.g. Searing 2021), on resilience in particular challenging settings like sub-Saharan Africa (e.g. Littlewood and Holt 2018) or in the specific context of the COVID-19 pandemic (e.g. Oberoi et al. 2021); whereas this research has made an important contribution to filling that gap on the SCRes side. Moreover, in outlining the leading role played by CFRP1 in the establishment of the case network and the roll out of the CFRP model, this study answers the

call from Haugh et al. (2022, p. 1237) for research to investigate “*the anchoring effects of high-profile SEs*”. Using Young and Lecy’s (2014) Zoo metaphor, this research also contributes to the SE literature in identifying and providing understanding of a specific ‘species’ of SE. That is, a species of SE which is endemic to the South Wales region. This species of SE draws its strength (and resilience) from its environment, thriving through both mutualism and commensalism involving other SEs as well as other ‘species’ outside of the Zoo walls (Young and Lecy 2014), such as both public and private sector organisations. Finally, this research contributes to the SE literature through shedding further light on the concept of social franchising (Cumberland and Litalien 2018; Naatu and Alon 2019). With FF, CFRP1, CFRP2, and CFRP3’s involvement in the case network, this study satisfies Cumberland and Litalien’s (2018) call for research investigating both; 1) the success factors of a social franchise / franchisees, and 2) the funding strategies which can predict success within a social franchising context (Cumberland and Litalien 2018). Furthermore, with the adoption of a network theory lens, this research provides a theoretical lens through which social franchising can be analysed (Cumberland and Litalien 2018).

In addition to SCRes and SE, this research also contributes to the SNT literature. To the best of this researcher’s knowledge, this is the first study to adopt a SNT approach in studying both a social impact supply chain generally, and a social food supply chain more specifically.

6.3.2 Practical Implications

As a form of AR, the primary practical implication of this research was its impact on the social food supply network at the heart of this study. By working in collaboration with practitioners, this study has influenced practice across South Wales’ community food landscape. This was primarily achieved through the cooperative management of the SC by its

stakeholders through their involvement in the FPWG, CTF and CFRN. This aided in the development of resilience in alternative food provision, and the tackling of food poverty across several communities.

For other SEs actively working to address food poverty, the empirical framework for SOSCRes provides guidance for developing resilience within their own SC. This includes outlining the elements of SOSCRes and how these elements can be instilled within the SC. For example, the types of support that can aid the SEs in acquiring the necessary finance, and where this support can be sourced from. Likewise, for SC managers working with SEs, this research provides insight into the SE context, and the types of support they require for the benefit of the entire SC. A notable takeaway from this research was the different ways in which strategies / elements of SCRes are implemented within a SE context compared to a for-profit one. This suggests that, despite well-reported isomorphic pressures (Nicholls and Cho 2006; Peattie and Morley 2008a; 2008b), the diversity of SEs may be enduring. For SC managers operating within a for-profit context, this research can inform their operations of alternative ways of developing resilience.

Finally, this research can act as a roadmap, guiding those looking to set up a similar local network elsewhere. This is achieved by outlining the 5-step approach to the creation of a network conducive to SOSCRes, instigated by a single orchestrating organisation, and the establishment of a working group with the necessary stakeholders.

6.3.3 Policy Implications

In addition to practical implications, this research is also believed to have implications for policy. This research illustrates how SEs can be an effective vehicle for tackling food poverty. Hence, it is recommended that policy makers looking to tackle food poverty turn to the SE sector as a

viable solution to the food poverty problem. In doing so, it is crucial that policy makers are aware of the significant role the public sector can play in the development of SOSCRes. It is believed that this research comprehensively outlines the support that SEs working to tackle food poverty require to develop SOSCRes and the ways in which the public sector can meet some of these needs. For example, with establishment of a working group, the public sector can bring together key stakeholders, foster collaboration and instigate a city-wide coordinated response to the food poverty crisis. In addition to this, by sharing funding opportunities and providing guidance on submitting funding applications, it can support SEs to access crucial funding during those initial stages. The public sector can also support as a training provider, ensuring that SEs working to tackle food poverty have the necessary skill base to operate correctly and effectively. Consequently, it is believed that this study can directly inform policy around the infrastructure of business support to the SE sector.

6.4 Research Limitations

While this research is believed to have made a valuable and original contribution to knowledge, like all research it has limitations, and there are a number of limitations that should be acknowledged.

Firstly, this research was conducted into a single network operating throughout South Wales, United Kingdom. While case selection was well-thought-out so to maximise this study's contribution to knowledge, the sample size places an obvious limitation on generalisability. Several efforts were made to increase the generalisability of this study. This included laying the foundation for "*analytic generalization*" (Yin 2018, p. 42) by adopting SNT as this study's theoretical lens, coupled with selecting a case which was both represented by a variety of organisations, positions and responsibilities, and susceptible to falsification (Flyvbjerg 2006). However, despite these efforts, it is important to acknowledge that

the findings of this study are based on a single network operating throughout a single geographical location.

Secondly, SCRes is a concept that cannot be simply observed.

Consequently, this research was limited by an inability to provide hard evidence, instead having to rely heavily on inference making. This raises concerns of subjectivity and internal validity. Every effort was made to address these concerns, including creating a transparent research process (Mariotto et al. 2014; Yin 2014), triangulation through a multi-method approach (Saunders et al. 2009; Ali et al. 2008; Ali and Golgeci 2019), and asking interviewees to review their interview transcripts (Guba and Lincoln 1994).

Thirdly, concerns of generalisability and internal validity were compounded by undertaking the study as AR. While flexibility is certainly a benefit of AR, it makes research conducted using an AR approach difficult to replicate. While efforts were made to increase generalisability, it is important to note that AR is situational, as is the knowledge it creates (Somekh 1995; Coughlan and Coughlan 2002). Furthermore, this research represents an initial step into an underdeveloped field, whereby the 'situational understanding' (Elliott 1993, cited in Somekh 1995) provided can provide a basis for future research in search of generalisability. Not too dissimilar to participant-observations, concerns around internal validity within AR stem from the potential for the researcher to 'go native', increasing the risk of biases. As the research progressed, my role within the case network became increasingly that of an advisor. To an extent, this could be considered 'going native' in that the role of an advisor was one adopted by the representatives of each of the organisations across the case network. However, it is believed that concerns of internal validity were equally negated as practitioners adopted my role as a researcher. It is believed that this collaborative effort with participants, coupled with

their shared stake in tackling the research problem, helped instil internal validity.

Finally, the COVID-19 pandemic provided a unique opportunity through which the concept of resilience could be studied. However, it logically placed some limitations on the undertaking of this research. Members of the CFRPs represented a significant stakeholder within the case network, as both the target beneficiaries of their social mission and the target consumers of their commercial activities. Consequently, the research intended to engage with members to better explore perceptions of, and feelings towards, the CFRPs. The various lockdown measures meant that it was not possible to engage with members in person. Unlike other stakeholders within the network, it was neither plausible to engage with members online, i.e. via an online survey. This was due to the disadvantaged nature of the communities the CFRPs served.

6.5 Opportunities for Further Research

This research belongs to an underdeveloped research field. Consequently, several opportunities for further research exist. Firstly, with this research conducted into a single network within South Wales, there is scope for further research, applying that found by this study to other alternative food SCs in other geographical locations. This would build on the findings of this study, adding generalisability, which could later contribute to the body of knowledge around social franchising.

Secondly, given the food context in which this study was undertaken, with the handling of perishable food providing its own challenges, it would be valuable to test the proposed framework in other contexts. This would provide further clarity around which elements of SOSCRes presented here are applicable to SEs generally, and which are specific to food-related SEs.

Thirdly, this study provides a useful basis for future research into SOSCRes using a SNT approach. Having identified how network ties can contribute to the development of SOSCRes, it could be beneficial to explore these ties further with the use of concepts within SNT. For example, Burt's (1992) 'structural hole' theory could provide insight into the benefit, if any, of having unconnected alters. It would be interesting to explore how relevant unconnected alters are as a source of novel information given that this study found that some nodes were able to consistently provide novel information (e.g. COVID updates from government agents) despite being connected to other nodes across the network. Alternatively, Granovetter's (1973) 'Strength of Weak Ties' theory could provide insight into which ties within the network should be prioritised as 'strong ties' (the ties you depend on), and which should represent 'weak ties' (those that provide access to novel ideas) (Galaskiewicz 2011).

Finally, this study involved a distinct 'species' of SE, one whose activities are tied to its local community. A future research opportunity would be to explore to what degree these SEs are representative of other SEs involved in alternative food provision. Furthermore, with SEs operating both nationally and internationally, there is an opportunity to explore the applicability of the SOSCRes framework presented here to food-related social impact SCs that operate at a national and / or international level. This is coupled with exploring SOSCRes more generally in a national / international context.

6.6 Closing Remarks

Food is a universal right that is not yet universally realised. With rising numbers of people living in food poverty, it has fallen on social enterprises to carry the burden of attempting to address this wicked problem. This research sought out to alleviate this burden by reconceptualising supply

chain resilience within a social enterprise context. In doing so, this research provides the foundations on which alternative food supply chains can develop the capabilities necessary to be able to continue providing healthy and affordable food to those who need it most.

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APPENDICES

Appendix 1: Research Ethics Approval



Cardiff Business School
Ysgol Busnes Caerdydd

Alexander Jones
Cardiff Business School
Cardiff University

02 March 2021

Dear Alexander Jones

Ethics Approval Reference: 2021016

Project Title: Taking Food Poverty: Building Resilience into Alternative Food Supply Chain Provision

I would like to confirm that your project has been granted ethics approval as it has met the review conditions.

Should there be a material change in the methods or circumstances of your project, you would in the first instance need to get in touch with us for re-consideration and further advice on the validity of the approval.

I wish you the best of luck on the completion of your research project.

Yours sincerely,

Electronic signature via email

Prof. Debbie Foster
Chair of the School Research Ethics Committee
Email: CARBSResearchEthics@cardiff.ac.uk

Appendix 2: Focus Group Consent Correspondence

From: Alexander Jones
Sent: Wednesday, July 6, 2022 2:43 PM
To: [REDACTED] Wales) <[REDACTED]@wales.nhs.uk>
Cc: Yingli Wang <WangY14@cardiff.ac.uk>
Subject: RE: Focus Groups Data - Consent

Dear Community Food Retail Network members,

I hope this email finds you well.

As you are aware, for some time now, with thanks to your support, I have been conducting research into resilience within social supply chains, primarily within a food context, under the supervision of Prof. Yingli Wang (CC'd).

Following on from the success of the co-design workshops series we held back in May-June 2021, which culminated in the publication of our brochure 'Building a Community Food Retail Project', myself and Yingli agreed that the content of those workshops provided key insight that would prove a valuable component of my ongoing research. That is why we are looking for your consent for your input in these workshops to be used in my research.

Should you be happy for your input in these workshops to be used in my research then you DO NOT have to do anything. If you do not consent however, then please feel free to contact myself informing me of this decision. In order to make to an informed decision, I have attached a copy of the research information sheet to this email for your convenience. Alternatively, if you have any questions then do not hesitate to contact either myself or Prof. Yingli Wang (WangY14@cardiff.ac.uk).

Kind regards,
Alex

Appendix 3: Example of Meeting Observation Notes

FPWG Meeting Notes

Date of Meeting: 06/10/20

Attendees: FoodCore (SFPC), ReFood Wales; WellNourished; TSSA (x2 representatives); Local Foodbank; Local Council (x2 representatives); Alexander Jones (AJ)

Updates:

- **Government Agent (Local Council):**
 - Local lockdown announced.
 - People are still allowed to go out and buy food under new lockdown measures.
 - Travel between counties is allowed when giving care / shopping for the vulnerable.
 - Still concerns about access to food as a result of the local lockdown.
 - Letters have gone out to those on shielding list providing advice going forward.
 - Free School Meals: Some local authorities providing food parcels to children self-isolating.
 - Working with WellNourished on the contents of the parcels.
 - Many families refusing them, possibly due to the stigma attached.
- **Local Foodbank:**
 - The local lockdown has seen an increase in the number of people attending the Foodbank.
 - Asks Government agent present if there are any changes they should be aware of in relation to the new local lockdown – Answer is no.
 - The local lockdown has caused extra issues as unable to open properly:
 - Not able to have users in for discussions, instead have to stick to coming in, collecting food, then leaving.

- o Donations still coming in and volunteers still providing considerable hours despite local lockdown.
- **ReFood Wales:**
 - o Steady increase in number of new members over the last few months, but nothing like the spike during first lockdown.
 - o Figures for last 6 months: 1.3m meals worth of food redistributed, which is equivalent to the whole of last year. Equal to 550 tonnes of food.
 - o Donations from supermarkets during the initial lockdown has ended.
- **WellNourished:**
 - o Receiving help in digitalising all training.
 - Moving to get Level 2 courses moved online.
 - Any interest in these courses, contact WellNourished's Clinical Lead.
- **TSSA:**
 - o Some projects are on hold due to the local lockdown.
 - o Of the emergency groups set up, some are stopping, while others are looking to become permanent.
 - The groups that are stopping is due to people going back to work / being allowed out more, so unable to volunteer.
 - o Working to deliver safeguarding training on the 19th November.
- **Alexander Jones (AJ):**
 - o Funding opportunity available:
 - If successful AJ can work more closely with FoodCore on scaling up the CFRPs.
- **FoodCore:**
 - o Three focus groups organised in September and October.
 - 42 people signed up for first focus group.
 - 60 signed up for second focus group.

Actions:

- AJ to email FoodCore's SFPC to request information to be included in funding application form.

Appendix 4: Interview Protocol

Case Study Interview Protocol

Researcher Name: Alexander James Jones (C1431103)

Research Project Title: Taking Food Poverty: Building Resilience into Alternative Food Supply Chain Provision

Research Question: How can resilience be built into alternative food supply chains that help alleviate the food poverty problem?

Case Study Interview Question List

1. Please could you start off by telling me about yourself?
2. Could you tell me about (**Insert case enterprise name**)?
3. What planning was undertaken prior to establishing (**Insert case enterprise name**)?
4. Who is involved in the running of (**Insert case enterprise name**)?
5. What risks and challenges does (**Insert case enterprise name**)?
6. Who does (**Insert case enterprise name**) collaborate with?
7. What are (**Insert case enterprise name**) plans moving forward?

Appendix 5: Interview Topic Checklist

Case Study Interview Protocol

(For Researcher ONLY)

Researcher Name: Alexander James Jones (C1431103)

Research Project Title: Taking Food Poverty: Building Resilience into Alternative Food Supply Chain Provision

Research Question: How can resilience be built into alternative food supply chains that help alleviate the food poverty problem?

Proposed Case Study Interview Question List:

1. Please could you start off by telling me about yourself?
 - How long they have been involved with (**Insert case enterprise name**) ☐
 - Their motivation for establishing / being involved with (**Insert case enterprise name**) ☐
 - Their links to the local area outside of (**Insert case enterprise name**) ☐
 - Previous work experience (**Insert case enterprise name**) ☐
 - The extent to which previous experience has supported them in this role? ☐
 - Their educational background ☐

2. Could you tell me about (**Insert case enterprise name**)?
 - Explanation of (**Insert case enterprise name**) process of operation ☐
 - Sources of income used ☐
 - Changes in sources of income used ☐
 - Who the target consumers are ☐
 - Whether target consumers are separate from the target of their social mission ☐
 - What customer eligibility process are in place ☐
 - Total consumers currently ☐
 - Whether its operating to consumer capacity ☐
 - How changing demands are managed ☐
 - Any consumer prioritisation present ☐
 - Who the suppliers are ☐
 - Who the supplier's suppliers are ☐
 - Alternative suppliers identified ☐
 - How social impact is measured ☐

3. What planning was undertaken prior to establishing (**Insert case enterprise name**)?

- Whether they consulted with prospective consumers ☐
- What marketing activities have / are being carried out ☐
- How was a premises secured? ☐
- Whether there are back up sites available ☐
- Whether operations could be relocated easily ☐

4. Who is involved in the running of (**Insert case enterprise name**)?

- Number of paid staff employed ☐
- The role of paid staff ☐
- Number of volunteers ☐
- The role of volunteers ☐
- What is looked for in successful applicants ☐
- How staff and volunteers are attracted ☐
- The length of tenure on average ☐
- In-house training provided ☐
- The presence of the necessary in-house skills and values ☐
- Presence of sole manager or management team ☐
- Who they feel accountable to? ☐
- Others involved in running of the enterprise:
 - o Customers ☐
 - o Employees ☐
 - o Suppliers ☐
 - o The local community ☐
 - o And other collaborators ☐
- How both social and financial objectives are managed ☐

5. What risks and challenges does (**Insert case enterprise name**) face?

- Challenges in acquiring workers, both paid and voluntary, with the required skill set and values? ☐
 - o How has this effected the enterprise? ☐
 - o Why do you think these challenges exist? ☐
 - o How have you combated these challenges? ☐
- Whether there have been challenges in accessing funding ☐
- How risks were identified ☐
- The processes put in place to mitigate these risks and challenges ☐
- The regularity of risk assessments ☐
- Working throughout COVID-19 ☐

6. Who does (**Insert case enterprise name**) collaborate with?

- Suppliers ☐
- Customers ☐
- Beneficiaries (If separate from customers) ☐
- The local community ☐
- Public organisations ☐
- Private organisations ☐
- Social enterprises ☐
- Government agents ☐
- Industry associations ☐
- Others ☐

7. What are (**Insert case enterprise name**) plans moving forward?

- Plans for upscaling ☐

Appendix 6: Focus Group 1 Structure

Session 1:

Introduction to Community Food Retail Projects

Structure:

- What is a "Community Food Retail Project"
- Why is it needed?
 - Affordability
 - Access
 - Added Value
- Models available:
 - Bag and Box Schemes
 - Food Co-ops
 - Community Fridges
 - Social Supermarkets
 - FF Franchise Model
- FF Franchise Model
 - How it works
 - Key learning points
- CFRP1 Case Study
 - Our journey so far
 - Successes
 - Challenges
 - What we've learnt
- CFRP2 Case Study
- Q&A

Appendix 7: Focus Group 2 Structure

Session 2:

Practical Considerations for a Community Food Retail Project

Structure:

- Session 1 Recap
- Practical Considerations
 - Business case and co-design
 - Legal and Health and Safety
 - Equipment and Set-up
 - Volunteer recruitment and training
 - Marketing and communications
 - Operations
- Supply
 - ReFood Wales
 - Local businesses
 - Community growing / individual produce donations
- Q&A

Appendix 8: Focus Group 3 Structure

Session 3:

Getting Ready to Go

Structure:

- Session 1 + 2 Recap
- Co-designing / Co-delivering your Project
 - Involving Community and Stakeholders
 - Membership – Recruitment and Involvement
 - Feedback and developing your project
- Supporting Healthy Choices and Cooking Skills
 - WellNourished
 - Food related benefits training
- Cooking Project in Practice
 - CFRP2
- Q&A

Appendix 9: Focus Group 4 & 5 Structure



Timeline

- o) Online Survey (May 21st): What should go into the brochure? i.e., the building blocks / themes – Essential things we must include / Nice things that could be included.
- 1) Online Workshop 1 (May 28th): For each theme identified from online survey: what worked well? Lessons learnt? Which case examples / testimonials can we include?
- 2) Online Workshop 2 (June 25th): Presentation of draft protocol for comment.
- 3) Synthesis comments from workshop 2 to improve protocol and produce final draft of brochure (End of July).

Appendix 10: Documentary Evidence – Meeting Minutes (Anonymised)

Food Poverty Working Group Meeting Notes of the meeting held at 11.00am on Tuesday 3rd November 2020

Attendance:

- FoodCore – SFPC (Chair)
- ReFood Wales
- TSSA
- Local Council Representative (1)
- Local Council Representative (2)
- WellNourished
- Alexander Jones – Cardiff University
- Yingli Wang – Cardiff University
- Dedicated Minutes Taker

1. Group Updates	Actions
<u>Local Council Representative (1):</u> - <u>Free School Meals:</u> Most schools are now providing hot meals. 9 schools not providing any provision, one hoping to start after Christmas. Primary schools are having problems with space, meals are being served in classrooms, as dining halls are being used for other things. Sandwiches, baguettes and pasta pots provided in these schools. - Increasing amount of pupils are self-isolating. This week two primary schools are closed due to staff shortages. - Supermarket vouchers and food parcels being delivered to free school meal families. <u>ReFood Wales:</u> - Steady increase in food need, and members during this fire break period. - Received food donations for all areas of Wales. Currently working on a project with a food wholesaler. - Volunteer numbers increased last week. <u>Local Council Representative (2):</u> - Receiving an increase in calls as the Hubs are currently closed. - Majority of the Team's work is with the foodbank. Considering ways to help clients, being more lenient with the Foodbank process. - There has been an increase in the number of people requesting home deliveries. - Has had discussions with the Foodbank re: Christmas food parcels, if needed. - WellNourished noted two organisations that may be able to help with the delivery of nutritious meals. Local Council Representative (2) will contact them. - Confirmation that electronic vouchers, using the voucher code only, will soon be available, removing the need for paper vouchers. Information available via the Foodbank database. <u>FoodCore:</u> - Tesco have announced that they are going to uplift the Healthy Start Voucher amount, by offering an extra £1.00 to be spent on fruit and veg. https://www.tescopl.com/news/2020/tesco-to-offer-free-fruit-and-veg-to-500-000-healthy-start-families/ - Iceland have announced a similar project. The Peas Please Project Board are working with other retailers to offer the same kind of scheme. <u>TSSA:</u> - Fire break has affected some projects that were due to start.	

- Advocacy networks have raised concerns about lack of referrals at a time when referrals should be high. - Safeguarding week is from the 16th to 20th November. - 59 nominations received for the Volunteer Awards. Ceremony taking place on 13th November.] - Action: Planning support over Christmas to be discussed at the next meeting. - ReFood Wales noted that they have confirmed their Christmas plans, will only be closed on Christmas Day, Boxing Day and New Year's Day. - <u>Service Mapping:</u> FoodCore's SFPC noted that she will re-establish the link on FoodCore Website, will highlight those services that are closed as well as open. WellNourished: - Have recently received funding for the whole training programme to be digitalised, hoping that this will be done by March 2021. - Part of the programme will be ready for delivery by the beginning of December, with a mix of virtual face to face sessions with a dietitian, using some of the digital resources already developed. - Cooking classes have been piloted with one project. Looking to work with another to deliver one off sessions. Youth Services are interested in receiving advice on cooking in the home. <u>Alexander Jones: Cardiff University:</u> - Funding has been secured for accelerating business collaboration between Cardiff University and businesses. Grant of £2,000 will be used to fund FoodCore with support and workshops going forward.	SFPC
FoodCore: <u>Setting Up a Community Food Retail Project Focus Groups:</u> - Organised three, one hour Zoom Focus Groups in September and October, through Eventbrite. Circa 40 attendees per workshop. - Evaluation forms to be sent out shortly. - Want to gauge interest from people looking to set up these sorts of projects across South Wales, and what are the barriers, and resources needed. - Seems to be an appetite from people doing these projects, for networking opportunities and troubleshooting sessions. <u>New CFRP:</u> - These are similar to the FF Franchise model. - Looking to launch in Bristol this week and London before Christmas. - Funded by Barclays to set up six locally. Currently looking at schools and childcare settings. - Have identified two potential partners in South Wales, hoping to launch after Christmas. - Recruiting one Development Officer and two Support Workers. - Action: SFPC will share these details for this group to circulate. <u>Funding:</u> - CFRP1 has secured UNICEF Covid funding of £17,000, to be shared between CFRP1, CFRP2 and others. - The funding is to provide 100 pre-cooked meals per week, between November 2020 and March 2021, to those most in need. - The meals will also include a recipe card and maybe an ingredients pack, for the recipient to make the meal at home. - Work is currently ongoing to set this project up.	SFPC

<u>Peoples Assembly for Food and Farming:</u> - FoodCore is working with Cardiff University to host this Assembly. It is being held this Saturday 7 th November 2020. - The question is: <i>'What would you like to see change in the City region food system by 2040, and what are the challenges?'</i> The 'region' includes the Vale, and circa ten local authorities around the South Wales area. - Action: SFPC will share these details. - SFPC would like to use this as a starting point for the FoodCore plan for the next three years.	SFPC
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2. Any Other Business	
None	

3. Date of Next Meeting	
Next Microsoft Teams Meeting Tuesday 1 st December 11.00am till 12.00pm.	

Appendix 11: Documentary Evidence – Email Correspondence (Anonymised)

Food poverty working group and funding

 **[REDACTED]** ([REDACTED] Wales) <[REDACTED]@wales.nhs.uk>  

To: [REDACTED] <[REDACTED]@wales.nhs.uk>; Alexander Jones; **+7 others** Mon 7/12/2021 5:35 PM

Cc: [REDACTED] <[REDACTED].gov.uk>; **+4 others**

 EU Transition Funding outlin... 13 KB

External email to Cardiff University - Take care when replying/opening attachments or links.
Nid ebost mewnol o Brifysgol Caerdydd yw hwn - Cymerwch ofal wrth ateb/agor atodiadau neu ddolenni.

Hi all,

You might have seen that Welsh Government have released a funding round to tackle food poverty <https://gov.wales/food-poverty-and-food-insecurity-grant-scheme>

[REDACTED], with partners including [REDACTED] Council, [REDACTED], [REDACTED], [REDACTED] and our community food retail network members are looking to put in a bid.

I thought we could use the meeting tomorrow to discuss further. I've attached a spreadsheet with some of our current thinking. **Deadline is 19th July so it's a tight one**

Thanks

[REDACTED]

 Reply  Reply all  Forward

Community Food Retail Package - priority booking open

 **[REDACTED]** ([REDACTED] Wales) <[REDACTED]@wales.nhs.uk>  

To: [REDACTED] <[REDACTED]@wales.nhs.uk>; **+20 others** Wed 2/16/2022 11:37 AM

Cc: [REDACTED] <[REDACTED].org.uk>

 Community Food Retail Prog... 2 MB

External email to Cardiff University - Take care when replying/opening attachments or links.
Nid ebost mewnol o Brifysgol Caerdydd yw hwn - Cymerwch ofal wrth ateb/agor atodiadau neu ddolenni.

Hi Community Food Retail Network Members,

Really excited to say that booking is now open for our free Community Food Retail Training Package. As members of the network you'll have priority booking until next week.

There are 5 modules that you/staff/volunteers can choose from, and if you attend 5+ hours your project will be eligible for a £70 grant for cooking equipment.

More details attached and here: [https://\[REDACTED\].org.uk/community-food-retail-training-package/](https://[REDACTED].org.uk/community-food-retail-training-package/)

If you have any questions please contact [REDACTED] cc'd.

Note – please book as many places as you like, however if we are oversubscribed we will cap it at 2 spaces per group.

Best wishes | Cofion gorau,

[REDACTED]
she/her | hi/ei
[REDACTED] Co-ordinator | [REDACTED]