The process of early social relationship initiation within an entrepreneurial technological community in a micro city context

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Abstract

For technological entrepreneurs, collaboration capabilities and access to networks which lead to the building of resources and sharing of tacit knowledge are crucial success factors, keeping them a step ahead of competition by bringing together diverse perspectives, skills and experiences to create innovative solutions to complex problems. Informal innovation communities and social relationships outside the workplace are considered crucial for technological innovation to emerge, with some of the more complex challenges within high-tech industries requiring innovative ideas from efficacious collaborative efforts that extend beyond formal contractual exchanges to 'a sea of informal' interactions, emerging from ongoing informal and non-premeditated relationships.

This qualitative study investigates the process of dyadic social relationship initiation amongst a group of technological entrepreneurs in an Irish micro city from pre-interaction to the early social interactions which, if the relationship is successfully initiated, lay the groundwork for future collaboration and engagement. In the industrial marketing and purchasing (IMP) research tradition, the study considers a dyad a natural starting-point for network research as it represents a concrete and important level of business exchange. An action research methodology is employed, using local, in-person technology or 'tech' meetups as a point of entry to the community, semi-structured interviews to inductively explore the phenomenon, and grounded theory to analyse the data.

Through the analytic lens of social exchange theory, the study develops a model of social relationship initiation amongst business actors and identifies 'social comfort', 'prosocial enculturation' and 'social belonging' as three inherent subprocesses, as actors move from the pre-interaction phase, before direct communication or engagement occurs, to nascent interpersonal interactions at informal, socially-situated events. A process-approach is taken to conceptualise the 'social interaction space' and its four metaphorical 'rooms' in which new relationships begin as dynamic and evolving environments impacted by human agency, environmental factors and temporal dimensions that facilitate interpersonal connections and foster community cohesion.

The findings build on understanding of the processual and contextual dimensions of social relationship initiation amongst business actors and the conditions that impact initiation, offering new empirical evidence on how optimal conditions at informal, social events in urban environments are directly relevant and integral to the shaping of interactions and associated outcomes. The study proposes a new way of thinking about how nascent social bonds are shaped by environmental stimuli, societal circumstances, norms, cultural influences and affective factors. This has managerial implications for policy-makers in urban areas, particularly micro city environments, who are interested in supporting relationship initiation amongst business actors in new ways and developing innovation-focused communities and innovation initiatives within these communities.

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Declaration

I hereby certify that this material, which I now submit for assessment on the programme of study leading to the award of Doctor of Philosophy, is entirely my own work and has not been taken from the work of others, save to the extent that such work has been cited and acknowledged within the text of my work.

Signed: Michelle Clancy

Date: 14th June 2024

Table of Contents

List of Tables

List of Figures

List of Appendices

List of Abbreviations

RA	Research aim
PO	Practice objective
AR	Action research
ID	Innovation district
SET	Social exchange theory
IMP Group	Industrial Marketing and Purchasing Group
CoP	Community of practice
PO1	Participant observation 1 dataset
EO dataset	Event organiser dataset
EA dataset	Event attendee dataset

Chapter 1: FRAMING THE STUDY

1.1 Introduction

Managing innovation has become increasingly complex, with new collaborative organisational constructs required to support the multiple actors who interact to create new products and knowledge (Ollila and Yström, 2020; Dougherty and Dunne, 2011). In a world where competition is the norm, some of the more complex challenges within high-tech industries require innovative ideas from efficacious collaborative efforts that extend beyond formal contractual exchanges to 'a sea of informal' interactions (Powell *et al.*, 1996, p. 120), emerging from ongoing informal and non-premeditated relationships (Hippel, 1988; Håkansson, 1990).

Business communities support open innovation by facilitating engagement, social support, sense-making, knowledge sharing and collective action (O'Mahony and Lakhani, 2011). The flow and transformation of knowledge and ideas has been viewed as a prerequisite for innovation in both formal and informal, everyday practices (Ellström, 2010), with cooperation across firm boundaries (Håkansson, 2014) and informal communication and social relationships outside the workplace (Salavisa *et al.*, 2012) considered crucial for technological innovation to emerge. For technological entrepreneurs, collaboration capabilities and access to networks which lead to the building of resources and sharing of tacit knowledge are important success factors, keeping them a step ahead of competition by bringing together diverse perspectives, skills and experiences to create innovative solutions to complex problems (Zukin, 2020b). Technological communities rely on their collaborative networks to address complex challenges, develop cutting-edge technologies and drive industry growth, with collaborative endeavours within technological communities shown to foster cross-disciplinary partnerships (Bietz *et al.*, 2010). Within-community relationships have been pivotal in supporting community growth and collective learning amongst firms (Saxenian, 1994), while the external connections of tech employees within the broader tech community are associated with sustained growth, through the flow of people, information and tacit knowledge (Saxenian and Hsu, 2001).

Informal, socialising interactions outside the workplace can facilitate the exchange of resources and diffusion of knowledge not traditionally associated with formal ties (Feld, 1981). Observations on informal communication spaces in Silicon Valley's 'Wheel Bar' (Saxenian, 1996) describe how informal, socially-situated interaction created a culture of

openness and horizontal information exchange, offering a source of inspiration and innovation for technological innovators and opportunity for relationships with people from divergent backgrounds and experiences. Oldenburg's (2001) 'third spaces', which includes informal public gatherings, are considered important sites of idea exchange and relationship building. Inclusive activities that welcome aspiring, first-time and experienced entrepreneurs are considered crucial in engaging the start-up community (Feld, 2012). Informal social events such as hackathons, technology, or 'tech', meetups and coffee clubs have been shown to provide a tangible set of activities that establish social bonds amongst the entire technological entrepreneurial community (Feld, 2012; Zukin, 2020b).

1.2 Background and context of the problem

Cities are considered cauldrons and catalysers of innovative activities, interactions and relationships (Leon, 2008; Asheim *et al.*, 2007; Athey *et al.*, 2008; Johnson, 2008; Porter, 1990; Glaeser, 2012), acting as agglomerative urban hubs that provide local links to formal and informal networks that can be critical in enhancing the innovation process (Athey *et al.*, 2008). The creation of urban innovation neighbourhoods or districts has been viewed as a policy response to the increasingly spatial and urban dimensions of the knowledge economy (Carrillo *et al.*, 2014; Yigitcanlar *et al.*, 2008; Pancholi *et al.*, 2020; Kayanan, 2021). This place-based urban development strategy has successfully regenerated under-performing city neighbourhoods and accelerated technological innovation processes by strategically clustering communities of entrepreneurs and start-up companies in a geographical area alongside academic research institutes and firms (Pancholi *et al.*, 2015; Katz and Wagner, 2014; Morisson, 2020b; Esmaeilpoorarabi *et al.*, 2018b).

Similarly, the creation of urban cultural quarters in cities globally has been credited with acting as a catalyst in the regeneration process, integrating cultural and economic strategies to encourage greater cultural provision and economic development (McManus and Carruthers, 2014; Montgomery, 2003), provide high-quality employment and contribute to place image enhancement (McCarthy, 2005), promote social solidarity and provide economic boosters (Gunay and Dokmeci, 2012). Blurred boundaries between work and place have led to the creation of physical spaces for learning, fun, culture and networks (Yigitcanlar, 2010) in these neighbourhoods, with knowledge workers

particularly valuing amenity-rich urban configurations that include a diverse restaurant and café offering, interesting cultural opportunities and dynamic street- and nightlife (Asheim and Hansen, 2009).Entrepreneurial activity in Ireland remains robust, reflecting a strong national commitment to business creation and innovation. Recent data from the Global Entrepreneurship Monitor shows that around one in seven people in Ireland aspire to start a business. Ireland ranks third in Europe for entrepreneurs with high job growth expectations and the number of young entrepreneurs is also on the rise, with the proportion of early-stage entrepreneurs aged 18-24 increasing to 16.4% in 2021 from just 6.7% in 2018 (GEM, 2022). Technological entrepreneurs represent a significant and growing proportion of the overall entrepreneurial landscape, with approximately 2,200 indigenous tech start-up and scale-up companies employing more than 52,000 people in Ireland in 2024 (Kennedy, 2024) out of a total of 22, 581 new start-ups registered (Enterprise Ireland, 2024). Tech-focused enterprises are particularly dominant in urban centres, with 943 tech start-up companies based outside the capital city, Dublin (Kennedy, 2024). Cities such as Dublin and Galway have adopted the urban innovation district model by concentrating tech giants such as Google and Facebook alongside the local start-up ecosystem.

Waterford city, where this study took place, is a compact urban area of 50.4 km^2 land size with a population of 60,000 (Census, 2022). It can be characterised as a micro city in that, despite its size and population, it exhibits characteristics of a larger city, such as a mixture of residential, commercial and activities and urban infrastructure and amenities, albeit on a much smaller scale. Waterford acts as an economic hub to the south east region of Ireland, providing residents with access to educational and employment opportunities, services and social networks within that geographic area. It was designated one of Ireland's five 'Strategic Metropolitan Areas' in the Irish Government's National Planning Framework (2019), and has a population of over 600,000 living within a 60-minute catchment.

Waterford has lost economic activity over the past two decades due to the departure of capital and labour intensive manufacturing businesses, and the decline of inner city areas. There are new demands on labour force skills and a need for innovative, entrepreneurial thinking to navigate the changing economic environment. The local entrepreneurial ecosystem is supported by the government-funded Waterford Local Enterprise Office, which provided financial grants to 178 new start-ups from 2019 to 2023 and supported

an average of 300 core client companies per annum in the same time period (Waterford Local Enterprise Office, 2024). Precise numbers on the proportion of tech start-ups compared to general start-ups in Waterford are not reported.

Local government authority Waterford Council, which delivers services supported by national taxation and has an elected council, has embarked upon an ambitious urban regeneration project to develop an urban Cultural Quarter in a former industrial neighbourhood close to its quayside shipping district. This Quarter will be built upon place-making and collaborative community action and driven by the key aim of delivering inclusive and sustainable innovation (Waterford Cultural Quarter Strategic Plan, 2021-2025).

The impetus for this research study arose out of Waterford Council's dual goals of affecting changes in its approach to innovation generation in the city through working with innovation communities, and developing knowledge of the process. Central to these goals were plans to create a city-based innovation footprint within its new Cultural Quarter through the development of a start-up-focused innovation building and other innovation-focused initiatives. With these plans, the ambition of the Council was to generate economic opportunities for the city by leveraging innovation and technology, and position it as a site for future urban innovation and experimentation in new forms of business and enterprise, retail, creative activity and community. This new innovation building, a smart city urban lab, when it is completed, will offer a unique environment for technologically-focused entrepreneurs to develop innovative and sustainable concepts for the 'city of the future' through the application of analytics and technology. It will provide physical spaces and resources for interdisciplinary collaboration, such as a high-tech prototype workshop, 3D visualisation, and a Digital Media makerspace testbed.

Arising from these plans, Waterford Council was interested in supporting PhD research that would: i) gather insights into collaboration amongst technological entrepreneurs in the micro city; ii) explore best practice in supporting the development of existing and new innovation-focused business communities who could influence the design and operationalisation of an innovation footprint in Waterford city; and iii) investigate whether the elements that support the development of entrepreneurial communities could be dynamically configured in order to improve outcomes.

Thus the practice-based aim of this research study was formed and Waterford Council became the research study's 'enterprise research partner', through the offices of its Cultural Quarter and its Local Enterprise Office, which provides infrastructural supports to start-up and scale-up businesses and engages with entrepreneurial actors in the microcity. As enterprise partner, Waterford Council has provided infrastructural and financial supports to the action research interventions that have taken place during the study's lifetime.

1.3 Research aims and objectives

This inductive, action research study attempts to purposefully support the creation of a community of technology-focused entrepreneurs as part of its research design, in order to bring a process perspective to the initiation of social relationships through interactions within this community. The dual research and practice-based aims and objectives are clearly defined, to avoid a hierarchy level among them (Erro-Garcés and Alfaro-Tanco, 2020):

Research-based aims:

RA1) To employ practical action research to explore and elucidate the dynamic process of social relationship initiation, and how individual actors navigate the journey from outsider status to integration within an urban business community at a socially-situated site of interaction, emphasising the iterative and emergent nature of the social relationship initiation process;

RA2) To uncover the contextual factors, social dynamics and temporal dimensions that shape the initiation of social relationships in technologically-focused entrepreneurial communities that originate in informal, socially-situated settings, accounting for the unique characteristics of these environments;

RA3) To contribute to the advancement of theory on the process of social relationship initiation within business communities by grounding the study in empirical data and theoretical insights derived from the lived experiences of a community.

Practice-based aim:

PA1) To provide actionable insights and practical recommendations for community organisers, policymakers and stakeholders seeking to foster inclusive and supportive environments for relationship initiation within technologically-focused entrepreneurial communities in micro cities.

Research-based objectives:

RO1) To conduct an extensive review of existing literature on the creation of urban innovation neighbourhoods and the relevance of business communities within these settings, in order to inform the contextual background of the study and action research design;

RO2) To recruit participants from a technological entrepreneurial background;

RO3) To engage in iterative cycles of qualitative data collection and analysis using inductive action research methods, in order to generate rich, contextually embedded insights on the initiation of social relationships;

RO4) To design, implement and monitor appropriate action research change interventions that support the initiation of social relationships;

RO5) To utilise grounded theory techniques to systematically analyse the collected data, identify key categories, themes, and relationships related to the initiation of social relationships and iteratively refine emerging findings to ensure rigour and credibility in the research process;

RO6) To conduct an extensive review of existing literature on the dynamics of social relationship initiation within business communities in order to to inform the conceptual framework and research;

RO7) To synthesise research findings into a comprehensive narrative that defines and conceptualises the process of social relationship initiation within the context of technologically-focused entrepreneurial communities that originate in an urban, informal, social setting, and identifies how it works in conjunction with processes extant in the literature.

RO8) To contribute to academic discourse and inform practice in the field of social relationship initiation amongst business actors by disseminating research

findings through scholarly publications, conference presentations and community engagement activities;

RO9) To engage in reflective practice in order to actively evaluate thoughts, actions and practices throughout the research study, critically examine study limitations and propose avenues for future research.

Practice-based objectives

PO1) To contribute to the activation of innovation initiatives in an Irish micro city by engaging with, and supporting the initiation of social relationships within, a technological entrepreneurial community through informal, socially-situated events;

PO2) To empirically verify actionable, practical recommendations for community organisers, policymakers and stakeholders involved in supporting relationship initiation within business actors in the future based on the identified process of social relationship initiation, emphasising approaches that foster inclusivity and collaboration.

1.4 Research questions

The following research questions were designed to address each of the specified research objectives and guide the study into in-depth exploration of the subprocesses, or practices and routines, of social relationship initiation amongst business actors. They incorporate elements of process-oriented inquiry, empirical, action research investigation and theoretical development grounded in the lived experiences of community members. The author embraced an inductive approach to generating research questions to ensure the study was grounded in the realities and complexities of the research context, that a deep understanding of the phenomena under investigation could be facilitated, and that meaningful action and change could be empirically informed.

The first RQ was developed through stakeholder engagement in the research process, seeking contextual background and the input and perspectives of officials from Waterford Council. This ensured relevance and applicability to the context:

RQ1) *What are the key conditions, factors and actors identified as helping to drive or shape the creation of an urban innovation district, and how do business communities contribute to these settings?* To meet RO1.

After directly shaping the first RQ, Waterford Council's involvement in the study from that point onwards was as to provide infrastructural and financial supports for the action research interventions that were inductively developed and implemented by the author.

The following RQs were developed to allow the author to immerse herself in the data, systematically coding and categorising information to identify emerging patterns, connections or recurring phenomena. These patterns would serve as the basis for developing further RQs.

RQ2) *How do individuals from a technological entrepreneurial background perceive and experience the initiation of social relationships as they navigate the social structures, norms, and cultural dynamics of urban innovation communities; and what factors influence their decision to participate?* To meet RO2, RO3, RO7 and PO1; addressed initially during Cycle 1 but also during cycles 2 and 3.

Through iterative data analysis and reflexive inquiry, critically reflecting on observations, interpretations and assumptions, the following RQs emerged based on initial findings and the ongoing research process:

RQ3) *What action research interventions and activities contribute to the initiation of social relationships within technologically-focused entrepreneurial communities, and how can these insights inform the development of policies and initiatives aimed at promoting inclusive and supportive environments for entrepreneurial communities?* To meet RO4, RO7 and PO2; addressed during action research cycles 2 and 3.

RQ4) *What are the emergent categories, themes and relationships identified through grounded theory analysis of data on the initiation of social relationships within technologically-focused entrepreneurial communities?* To meet RO5; addressed during action research cycles 2 and 3.

The remaining, central questions for this research were finalised through ongoing reflection, dialogue and analysis, to capture the key issues identified through the inductive process. These RQs guided subsequent data collection, analysis and interpretation:

RQ5) *What are the dynamic subprocesses of social relationship initiation in the context of technologically-focused entrepreneurial communities that originate in informal, social settings, and how do these findings progress existing knowledge?*

RQ6) *What contextual factors and environmental conditions influence the initiation of social relationships in technologically-focused entrepreneurial communities?*

To meet RO6, RO7, RO8 and PO2. Addressed during Cycle 3.

Finally, in keeping with the methodological approach, the following RQ was guided by the reflective practice adopted:

RQ7) *How does reflective practice contribute to the evaluation of thoughts, actions, and practices throughout this research study, and what limitations and future research directions does it reveal?* To meet RO9.

1.5 Methodology

The study adopts a practical action research approach (Holter and Schwartz-Barcott, 1993; McKernan, 1996) to support social relationship initiation amongst a group of technology-focused entrepreneurs. Three iterative cycles involving planning and implementing interventions in the field, qualitative data gathering, analysis and evaluation (Dickens and Watkins, 1999; Herr and Anderson, 2014; Becker and Geer, 1957; Yin, 2015; Reason and Bradbury, 2001) are deployed over a 25-month period, from May 2021 to June 2023, to address the foreshadowed research question of 'how' social relationships are initiated, and 'how to' improve this initiation (Herr and Anderson, 2014).

Local in-person technology or 'tech' meetups, informal socialising events often credited with cultivating a strong and open business networking culture and playing a crucial role in creating tech communities (Cukier *et al.*, 2016; Rossi and Di Bella, 2017), are used as a point of entry to the local community. Reflecting an interpretivist philosophy, interviews are the main form of data collection, to understand the lived experience of participants and their social worlds. Congruent with the action research methodology, data is also collected through observation of 'real time' tech meetups and the digital

interactions of organisers, in order to facilitate an exploration of participant behaviour and views within the context in which they occurred (Rubin and Rubin, 2011). Observational data is used to help inform interview questions and provide contextual background. Drawing from grounded theory (Charmaz, 2014), an iterative approach is taken to analyse data and explain the relationship between informal, socially-based interactions and the initiation of social relationships.

1.6 Significance

How entrepreneurs initiate business relationships, and how such initial connections affect other future relationships, are considered important topics in industrial marketing and purchasing (IMP) research (Aaboen *et al.*, 2017; Baraldi *et al.*, 2019). However much of the academic attention to date on the process of relationship initiation has been limited in scope to inter-organisational relationships based on exchange behaviour (Ford and Håkansson, 2006; La Rocca *et al.*, 2013; Edvardsson *et al.*, 2008; Frazier, 1983), with initiation seen as commencing when companies in a potential relationship, the buyer and seller, recognise each other. The nuances and determinants of this pivotal precursor to fostering enduring business connections remains an understudied area of scholarly inquiry (Fraboni, 2023; Mandják *et al.*, 2015), with even a clear definition of relationship initiation lacking in the literature (Aaboen and Aarikka-Stenroos, 2017). Relationship initiation is considered a difficult phase to study because it has many potential beginnings (Holmen *et al.*, 2005) and ascertaining which particular contacts between parties brought about initiation is not always an easy task.

Within organisations, individuals representing both the buyer and seller are connected through their interactions and activities (Granovetter, 1985), with the initiation of dyadic personal relationships often serving as the foundation for establishing mutually beneficial connections and partnerships between individuals, organisations, and other stakeholders (Halinen and Salmi, 2001; Halinen and Törnroos, 1998). Such personal interactions are considered a key element of interaction between organisations in the interaction approach (Håkansson, 1982; Mainela and Ulkuniemi, 2013) with close, open business relationships linked to personal interactions between representatives of organisations (Ford, 1986) and stronger personal bonds between buyers and sellers associated with greater commitment

to maintain the relationship (Wilson and Mummalaneni, 1986). Yet the personal, social bonds within marketing relationships has always been an understudied area amongst IMP scholars (Witkowski and Thibodeau, 1999; Krolikowska and Kuenzel, 2024) and empirical works that consider the processual character of initial dyadic relationships to form the networks considered crucial to growth and survival (Håkansson and Snehota, 1995; Uzzi, 2018) are particularly rare. Given the importance of informal, social and personal relationships in the critical initiation phase, such as when an existing personal relation provides a first contact and access to a new business partner (Halinen and Salmi, 2001), or new exchange partners are identified via existing social ties (Ellis, 2000), this clear knowledge gap merits closer attention. Similarly, although there has been some IMP attention directed to the social aspect of business relationships (Halinen and Salmi, 2001; Bories, 2009), scant in the literature is empirical research that explores the contextual, environmental conditions impacting relationship initiation within business communities, particularly in an informal, social setting, that tie individuals together, impacting the community's nature, distinctiveness and culture-creating character.

This study takes a novel approach by considering the preliminary phase of dyadic social relationship initiation amongst individual business actors, from pre-interaction to early relationship initiation, where initial social interactions lay the groundwork for future collaboration and engagement. The study adopts the IMP position that a dyad is a natural starting-point for network research, as it represents a concrete and important level of business exchange (Halinen and Törnroos, 1998; Håkansson and Snehota, 1995). By taking the individual actor's perspective (Håkansson and Snehota, 1995; Håkansson *et al.*, 2009) of their actions within the social structure of the community, this study provides new insights into how to enhance the capacity of the actor to experience social relationship initiation. In the IMP tradition, due attention is paid to how participants mutually interpret their actions and reactions to new contacts within this social structure, and how the substance of the social relationship initiated affects the formation of new social bonds (Håkansson and Snehota, 1995).

The study creates new knowledge regarding how early social relationship initiation moves from a pre-interaction phase, before direct communication or engagement occurs, to nascent interpersonal interactions at informal, socially-situated events, and how this process is shaped by environmental stimuli, societal circumstances, norms and cultural influences and affective factors (Håkansson *et al.*, 2009). It identifies and describes three

distinct but interconnected subprocesses of early social relationship initiation, 'social comfort', 'prosocial enculturation' and 'social belonging', and develops a model which elucidates the workings of those subprocesses, including what occurs before and during the earliest interactions and the resultant changes that contribute to social relationship initiation. It proposes the contextual environment, or 'social interaction space' in which interactions occur, as directly relevant and integral to the shaping of interactions and associated outcomes. It finds informal, social interactions to be an effective starting point for business relationships, and informal settings a socio-contextual enabler of new relationships in business communities. The findings also show how an informal system of community governance or norm, which manifests itself through a shared prosocial outlook driven by the needs and aspirations of community members and contributing to individuals' well-being and resilience, affects individual behaviour and serves as a mechanism for fostering cohesion and solidarity, and nurturing a culture of community.

The findings have managerial implications for policymakers and organisations who are strategically seeking innovative approaches to developing business communities, suggesting they should focus on informal, socially-situated activities that target community outcomes, such as engagement, psychological safety and trust, rather than commercial outcomes such as branding and promotion, as well as new forms of governance that promote personal autonomy, belonging and group security.

1.7 Structural layout of thesis

This dissertation is organised as follows.

Chapter 1 includes the introduction to the main purpose of this research, the research questions, a summary of methods, and significance. Chapter 2 provides a contextual framework for this localised, context-specific study by exploring the creation of urban innovation neighbourhoods, and the communities that inhabit these neighbourhoods. Chapter 3 is the methods section, which explicates the qualitative, action research approach undertaken. Chapter 4 describes the findings, which are then discussed in the context of extant knowledge relevant to this study in Chapter 5. Chapter 6 offers final conclusions, including contributions to knowledge, study limitations, and future research.

Chapter 2: BUILDING A CONTEXTUAL FRAMEWORK

Technology-focused cities have proven to be engines of economic recovery (Glaeser, 2012; Moretti, 2012) and the strategic geographical concentration of high tech entrepreneurial activity and creative, innovative workers in cities is seen as a driving force of urban innovation (Forsyth, 2014; Blakely and Hu, 2019; Feld, 2012; Florida, 2002a). City planners are increasingly taking into consideration the planning of everyday sites of interaction, such as incubators and hubs (Morisson, 2020a) as well as parks and other amenities, that provide for sociability in public and semi-public spaces to encourage informational exchange and social interaction amongst knowledge workers (Charnock and Ribera-Fumaz, 2011). These 'third' (Oldenburg, 2001) and also online 'fourth' places (Simões Aelbrecht, 2016) draw on theories of urban sociology (Sheller and Urry, 2003; Putnam, 2000; Oldenburg, 2001) to provide informal social gathering spaces in communities that extend beyond the home and workplace.

Urban innovation districts are a new model of place-based, post-Fordist urban regeneration that involve a transition in inner city municipal planning from largescale manufacturing units and an industrial, hierarchical, top-down economy to the convergence of disparate, networked, high tech sectors and specialisations in under-performing downtown neighbourhoods. Ranging in size from 300 acres to 1,000 acres, these physically compact districts are often located close to a waterfront and offer mixed-use commercial, housing, office, retail and socio-cultural amenities, creating a critical mass at specific nodes. Through a mix of policy, planning and programming, urban innovation districts strategically cluster knowledge and creative companies and workers, start-ups, business accelerators and incubators alongside academic research institutes and firms with the goal of accelerating technological innovation processes and improving competitiveness (Pancholi *et al.*, 2015; Katz and Wagner, 2014; Esmaeilpoorarabi *et al.*, 2018b; Morisson, 2020a), as well as spurring city-wide economic development. They are characterised by their vibrant ambience and the presence of knowledge workers, who value prime amenities and a diversity of lifestyles and dynamic cultural and nightlife in downtown locations (Asheim and Hansen, 2009).

This chapter is laid out as follows:

Section 2.1 introduces urban innovation districts as a new model of urban regeneration, describing a systematic review of the literature on the creation of new urban innovation districts undertaken to provide contextual background for this study, and respond to the

practice-based priorities of the enterprise research partner, Waterford Council. This review categorises the literature on city-based innovation districts and identifies a distinct gap in the literature regarding the key actors involved in district creation.

Section 2.2 considers interaction and collaboration within technological entrepreneurial communities in cities, and how the use of informal events in socially-embedded spaces, namely tech meetups, have been used to support relationship initiation and enhance community connectedness.

2.1 Urban innovation districts: a new model of city regeneration

The concept of an 'urban innovation district' first emerged in Barcelona in 2000 with a government-led planning and urban regeneration programme to redevelop and renew the dilapidated, former industrial area of Poblenou into the 22@ Districte de la Innovació (Leon, 2008). This represented a departure from previous types of strategically-concentrated innovation district models such as science and technology parks like Silicon Valley, which were a type of suburban innovation district developed as a closed, isolated and single-purpose innovation system. The reimagined city area of 22@ adopted an open innovation system, using a triumvirate of physical, economic and networking assets (Katz and Wagner, 2014) to create a pipeline for innovation while also offering a high quality of work, life and learning conditions and the intensification of interprofessional networks (Charnock and Ribera-Fumaz, 2011) that encouraged informal interactions and spread knowledge. As attempts were made by cities globally to replicate the 'Barcelona model' (McNeill, 2005), it was adapted to respond to heterogeneous, localised socio-economic needs and differences in regional economics. The 'anchor plus' innovation district (Asgari *et al.*, 2021; Blakely and Hu, 2019) involved developing the district alongside a major university, such as Kendall Square in Cambridge, Massachusetts and the Cortex Innovation Community in St. Louis, Missouri. These global adaptions across a multiplicity of local contextual factors make typological analysis a challenge and the absence of a widely accepted typology in the literature (Adu-McVie *et al.*, 2022) presents a difficulty for cities wishing to adopt an urban innovation district model.

Attempts to explore the dynamics of rejuvenation within urban innovation districts have generally been confined to broad input indicators such as size, population, specialisations,

locational attributes and physical, economic and network features (Forsyth, 2014; Katz and Wagner, 2014; Blakely and Hu, 2019) or based on innovation process outcomes, such as patent data and new product announcements (Clark *et al.*, 2009; Boix and Galletto, 2009). Multidimensional approaches that comprehensively take into account district attributes, characteristics and the dynamics underlying knowledge-related activities between crucial innovation actors are rare (Adu-McVie *et al.*, 2022; Yigitcanlar *et al.*, 2020) and there is a clear need to advance knowledge regarding the antecedents of, and the factors affecting, district creation. Therefore the aim of this section is twofold:

i) to provide an overview of the extant literature on urban innovation districts in the business discipline and develop a literature classification framework derived from recurring themes in the most relevant publications regarding the key conditions and factors that drive or shape a district;
ii) to identify underrepresented areas or knowledge gaps in empirical knowledge which merit further examination (RO1).

2.1.1 Origins

Urban innovation districts have been likened to territorial models or concepts of innovation such as new industrial districts in Germany's Baden-Württemberg area (Hennings and Kunzmann, 1990), Silicon Valley and Boston's Route 128 (Hall and Markusen, 1985; Saxenian, 1996), regional clusters (Porter, 1990a), innovative milieus (Camagni, 1991; Aydalot and Keeble, 1988; Gössling and Rutten, 2007) and regional innovation systems (Cooke, 1992; Cooke *et al.*, 1998; Asheim and Gertler, 2005; Doloreux, 2004). This is due to overlapping causal explanations for urban innovation processes which point to both spatial and relational proximity of high tech workers, firms and research institutions, as well as unique localised characteristics and activities (Storper, 1997; Boschma, 2005; Breschi and Lissoni, 2003). Florida (2002b; 2005) links innovation with the 'creative classes', composed of entrepreneurs, academics, scientists and artists, who leverage network effects by creating attractive urban spaces and cultures of openness to new ideas which, in turn, attract more members of the creative classes to the area (Feld, 2012).

The crucial role of the system of economic and social interactions and networking abilities of key actors, including district workers and inhabitants, is a key theme in the business and management literature that also recurs in the social sciences (Yigitcanlar and Dur,

2013; Yigitcanlar *et al.*, 2008). In the latter field, however, the emphasis is more on how form and function support place-based knowledge diffusion by clustering and connecting research institutions, start-ups, business incubators and accelerators in urban neighbourhoods. Here, the origins of the innovation district are traced to theories of agglomeration economies, particularly the Marshallian industrial district's localisation of production (Marshall, 1920) and Porter's (1990a) Cluster Theory of local and regional development, which popularised the view that clusters can increase the productivity of local companies, stimulate new businesses and drive innovation, with economic activities embedded in social activities. Similarly, studies of regional economics highlight how 'tech' or innovation districts develop via the spillover of specialised knowledge through interactions and sharing, which in turn boosts agglomerative growth and regional advantage (Saxenian, 1996), underlining the importance of geographical location for knowledge generation and the generation of collaborative networks (Keeble, 2000).

2.1.2 Contextual literature review

A systematic search and analysis of the urban innovation district driven by the following question was undertaken:

> *What are the key conditions and factors identified as helping to drive or shape the creation of an urban innovation district, and how do business communities contribute to these settings?* (RQ1)

This literature review was not an attempt to generate new knowledge regarding the creation of urban innovation districts. Instead, the objective was to comprehensively explore, compare and categorise articles (Briner and Denyer, 2012) and analyse the experiences, problems and principal debates (Tranfield *et al.*, 2003; Webster and Watson, 2002). Urban innovation districts in cities of all sizes were included in the review as there was concern that limiting the review to districts in micro cities would not yield a large number of articles. Braun and Clarke's (2006) framework was applied to identify and synthesise recurrent themes within the topic and develop an overview perspective. A systematic review of the Scopus and Web of Science databases was undertaken in April 2023, searching for the keywords 'urban innovation district' and relevant variations that refer to an urban innovation neighbourhood in abstract, keywords and/or titles. These databases were selected because of their broad data coverage. The total dataset, once duplicities were eliminated, was 266 publications. This was followed by a journal specific

search, using the Chartered ABS (2021) guide to rank all journals in the business discipline. Most articles outside of the business discipline were excluded at this point, to ensure focus. An exception was made for journals relating to land use policy, as these offered rich insights into the impact of district place-making on actors. This process brought the total number of articles to be reviewed to 64 (Appendix A). The selected pieces were then re-read, critically reviewed and categorised using manual analysis. Rather than accept the themes or subthemes reported in the given articles as the key results, a literature classification framework (Appendix B) was developed to synthesise and draw an interpretation of the results and determine each paper's key contribution.

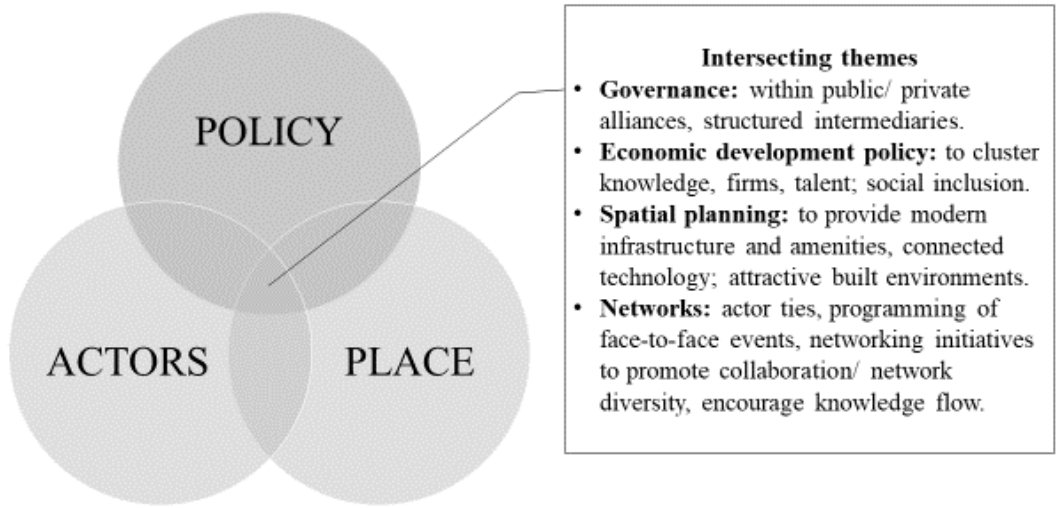
Findings and Discussion

The review identified three distinct key categories or strategic dimensions into which existing business and management literature falls: Policy, Place and Actors (Table 1 and appendices C-E)**.** The 'Major Themes' were extrapolated from these categories, along with identified knowledge gaps. An analysis was undertaken to identify the key areas intersecting all three categories (Figure 1), which exposed clear knowledge gaps regarding governance, network and actor ties and alliances, policy interventions and spatial planning. Also considered were the 'Key Interventions' made by cities to create a new district, and the 'Theory' underpinning major themes and interventions (to meet PA1, PO1 and PO2). Additionally, this review considered the main 'Methodological Approaches' taken and the 'Location' and 'Size' of the cities upon which empirical studies are based, to identify areas for future study.

Table 1 – Urban innovation district literature categories	
Category	**Definition**
Policy	Articles that examine targeted policies adopted, and strategic initiatives introduced, by cities.
Place	Articles that discuss functions and spatial characteristics including urban planning, design and place-based features.
Actors	Articles that focus on demographic composition, the key actors operating beneath policy-making, the proximity and connectivity of, and interactions between, these actors.

Source: created by author

Figure 1 – Intersecting themes within key 'Policy', 'Place' and 'Actor' articles



Source: created by author

i) Major themes

The key literature which considers the urban design, spatial qualities and physical characteristics of urban innovation districts (Appendix D) links place-based features and meaningful urban functions with the provision of built environments that specifically support activities which bring knowledge workers together to develop creative and innovation capabilities, foster new, technology-driven enterprises (Esmaeilpoorarabi *et al.*, 2018b) and access tacit knowledge that is not easy to obtain through formal channels (Tan *et al.*, 2023). Thus place-making emerges as a key strategy in attracting and retaining an innovation district's knowledge base (Yun *et al.*, 2018). Compactness, mixed land use, clustering of knowledge talent and firms, and accessibility (Charnock and Ribera-Fumaz, 2011; Hamidi and Zandiatashbar, 2019) attract, and encourage collaboration between, the

knowledge-based workers whose presence is associated with the successful development of urban innovation districts (Esmaeilpoorarabi *et al.*, 2018a). Knowledge workers are often introduced, and regularly interact, through a district's networking assets (Katz and Wagner, 2014) and are attracted by intangible characteristics such as a vibrant ambience (Katz and Bradley, 2013), high quality cultural amenities and diversity (Frenkel *et al.*, 2013). The social network of international knowledge workers in a district often extends back into their home country and other countries, which can be an important tool for increasing competitiveness (Leon, 2008).

A commonality in the creation of an urban innovation district through public intervention is the involvement of a diverse, synergic network of active local actors who play a crucial role in creating a knowledge transfer culture, developing partnership projects and programmes to promote innovative thinking and fostering interactions within an open innovation ecosystem. These include:

- Organised, strategically-focused actors player derived from the Triple Helix Model at the city, or decision-maker, scale, such as political actors, policymakers, or private firms. These actors often design a district's vision and value proposition, strive to strategically improve innovation outputs, shape investments and policies to stimulate the local economy or create public spaces that have an urban impact and drive partnerships (Gianoli and Palazzolo Henkes, 2020).
- Crucial supporting actors (Rapetti *et al.*, 2022), at the societal or user scale of the district (Carayannis and Campbell, 2009; 2010), including entrepreneurs and knowledge workers and local, mainly working class, district residents. The engagements of these actors are important elements of the connected networks and communities that drive district success.

Creating a shared sense of belonging amongst actors and enrolling science and technology into the collective project are viewed as crucial in facilitating the flow of knowledge across organisational boundaries and cultivating a sense of community over time (Pfotenhauer and Jasanoff, 2017). The strengthening of both formal and informal networks as important cross-fertilisers of ideas, opportunities and resource exchange is clearly articulated. Universities (Pancholi *et al.*, 2020), local government and state bodies (Heaphy and Wiig, 2020) often take on politico-organisational and socio-cultural dimensions by acting as facilitators of societal integration through bridging organisations

(Gianoli and Palazzolo Henkes, 2020), funded networking initiatives and the creation of new configurations of place. Blurred boundaries between work and daily activities meet the preference of knowledge workers for flexible working hours and environments (Blakely & Hu, 2019) and informal, non work-related activities (Kayanan, 2021). Providing opportunity for interaction amongst innovators at socio-cultural sites has been shown to generate informal, social networks essential for the transfer of knowledge, development of new ideas and instilling of trust (Zukin, 2020b). Supporting the development of these horizontal links connecting professionals and companies in a transversal way is considered particularly important during a district's growth and maturity stage (Pique *et al.*, 2019a). The arts and artistic clusters are viewed as attractors of knowledge workers and a facilitator of socio-cultural events, suggesting the importance of culture and the creative industries in the broader economic development of a district (Grodach *et al.*, 2014).

However the top-down implementation of innovation districts has shown limited consideration for the needs of both knowledge workers and the public, with gentrification and marginalisation often leading to socio-cultural tension. There is a growing interest in how districts can foster social identity and integrate local communities, though empirical works tend to focus on the challenges of engagement with the general public and low-income residents (Esmaeilpoorarabi and Yigitcanlar, 2023), and social coherency between international knowledge talent workers and the broader district community (Leon, 2008; Esmaeilpoorarabi *et al.*, 2020b; c).

Research gap in identified themes: although urban innovation districts are believed to be dynamic facilitators of unexpected, synergic encounters between talented knowledge workers who provide the foundation for innovation (Van Winden *et al.*, 2013), the literature takes a predominantly stakeholder-analytical perspective, limiting commentary to their roles, resources, activities and outputs. There is minimal empirical study of the micro-level collaborations between these crucial knowledge workers, the frequency of interactions and intensity of actor bonds, the bottom-up creation of synergies, sources of tension and conflict and the collaborative mechanisms between knowledge workers that could be cultivated to ensure the building of trust bonds and creation of 'epistemic communities' (Lissoni, 2001) within which knowledge is shared. The literature identifies the non-alignment between the top-down innovation imperative of economic growth embedded within key policy approaches and the 'on the ground' innovation amongst

start-ups and knowledge workers, often focusing on social-ecological innovation (Davidson *et al.*, 2023). However there is a shortage of empirical works that investigate governance and oversight within districts, particularly how policymakers align economic objectives with the social and environmental needs of the city and the impact of urban transformation on the local community, including the need to preserve existing heritage. Amidst concerns about the use of structured, collaborative intermediaries to facilitate interaction amongst knowledge-based actors and develop networks (Morisson, 2020), quality concerns exist regarding a lack of expertise within government-sponsored entities, policy cartels engaging in non-market actions to protect rents (Egan, 2022) and a lack of diversity in governance (Acuto *et al.*, 2019). This suggests a need for studies on the motivations, objectives and backgrounds of key actors within districts (Oh *et al.*, 2016; Liu and Huang, 2018; Cohen *et al.*, 2019).

ii) Interventions

Targeted start-up policy interventions aimed at developing ecosystem-support organisations and supporting collaboration have been shown to drive growth amongst high-tech firms in city innovation districts, while strategic co-location alongside a university with innovation-focused specifications often shapes district success (Asgari *et al.*, 2021). Initiatives that combine business supports, tax breaks, place-branding and network-building activities have successfully accelerated the agglomerative effects of clusters and the job counts of firms within them, particularly for younger, digital and technologically-focused activity (Nathan, 2020). However spatially-targeted fiscal incentives to stimulate the agglomeration of innovation activities, such as reducing the burden of taxes, regulation and planning, can result in the negative externality of companies relocating from districts once rebates run out (Wang *et al.*, 2021). Market-driven districts have received criticism for a number of policy-related negative externalities, including income, social and racial polarizations, gentrification and other forms of exclusion, resulting in higher rents, housing shortages and community displacement (Stehlin, 2016; Mirabal, 2009; Moulaert, 2000). Local governments have been criticised for pursuing a non-participative, undemocratic approach and neoliberal agenda (Swyngedouw *et al.*, 2002).

The creation of dedicated administrative structures separate from a municipal bureaucracy has been shown to promote faster, more fluid decision-making processes and

act as an accelerator for projects (Pique *et al.*, 2019a; Mohamed Khomsi, 2016; Mohamed Reda Khomsi, 2016). However, poorly performing initiatives formed through the delegation of district-support organisations by municipalities to non-profit and non-government bodies that lack expertise (Egan, 2022) can lower start-up success rate.

The provision of amenities extending beyond the conventional office setting that promote spatial proximity has been shown to create networking opportunities and stimulate social interaction and knowledge exchange (Arauzo-Carod, 2021; Esmaeilpoorarabi *et al.*, 2018b; Morisson, 2019). These include both retail and public spaces, restaurants, cafes, plazas and other open spaces, as well as vibrant nightlife and cultural institutions, which create ambience, establish identity, promote a district's place-based qualities and build authenticity (Taecharungroj and Millington, 2023). The proliferation of specialised knowledge hubs is a further step in the conceptualisation of spatial agglomerations of innovation activity through the clustering of knowledge-based activity and strengthening of local innovation ecosystems (Clark *et al.*, 2009a).

An absence of synergy and connectivity in earlier districts such as 22@ in Barcelona (Leon, 2008) and the Ruta N innovation district in Medellín, Colombia (Arenas *et al.*, 2020) led to recognition of the importance of local actors and governments working closely with public and private institutions to encourage shared development and governance strategies and mitigation policies aimed at connecting new communities with existing ones, and increasing inclusivity and integration (Morisson and Bevilacqua, 2019). Should cities wish to promote inclusivity, collaboration with district inhabitants, including knowledge workers and local residents, in partnerships and initiatives that promote greater engagement and differentiate the district from other parts of the city is encouraged (Pancholi *et al.*, 2020).

Research gap in identified interventions: There is an absence of empirical studies that consider influencing interventions that cumulatively impact policy, place and actors in the shaping process of innovation districts. Empirical studies are often confined to generic interventions applicable to all districts that fail to take into account localised socio-cultural context or characteristics. There is a need for new empirical work on identifying, and assessing the impact of, context-specific interventions, the challenges associated with them, and their internal dynamics.

iii) Theoretical underpinnings

The theoretical underpinnings of the identified articles were examined to investigate whether a common understanding of the creation of urban innovation districts exists. Policy-focused articles (Appendix C) frequently reference conceptual frameworks derived from Porter's (1998) geographical proximity of interconnected firms and workers, such as clusters of innovation (COI), as well as Triple and Quadruple Helix models (Etzkowitz and Leydesdorff, 1998; Etzkowitz and Zhou, 2017), and the strategic initiatives and interventions of leaders to create new technologies and market solutions across specialisations and generate economic development. Place-focused articles (Appendix D) are often underpinned by theories relevant to the diversified function played by districts. Several authors, notably in the urban studies and land use fields, examine Knight's (1995) knowledge-based urban development (KBUD) paradigm (Yigitcanlar *et al.*, 2008; Esmaeilpoorarabi *et al.*, 2020a; Carrillo *et al.*, 2014) of upgrading infrastructure and creating an attractive urban environment for knowledge workers (Yigitcanlar and Dur, 2013; Heaphy and Wiig, 2020). Recurrent in the actor-related literature (Appendix E) is theory relating to the main stakeholders implicated in the creation of innovation districts, the public sector, private sector and universities (Triple Helix approach), with some articles advancing the governance concept to add users/ citizens in a Quadruple Helix approach. This focus on actor roles advances the need to align vision agendas at governance level (Pique *et al.*, 2019b). Actor-focused articles that link innovation within these districts to human endeavour frequently refer to knowledge workers, or Florida's (2002b) 'creative classes', and their personal and diverse networks, as well as the clustering policy that creates opportunity for shared inputs, collaborative problem-solving systems and innovation acceleration.

Research gap in theoretical underpinnings: given that the majority of papers identified are empirical in nature, there is a shortage of theoretical papers that explicitly consider the nature, constituents and dimensions of the topic. Though the 'innovation district model' is increasingly discussed, the contextual literature review makes clear that a common theoretical framework does not exist with respect to the creation of these districts. A possible explanation for this is that alternate views on district creation have developed in different directions due to the differentiated focus of articles, on policy, place and actors. However utilising a single theoretical mechanism does not capture a

full explanation of the creation of these districts. Notably absent are theoretical studies which consider the social dynamics of innovation districts, such as the reciprocal relationship between districts and the public they serve (Esmaeilpoorarabi *et al.*, 2018b), or the theoretical lenses that underpin interactions between actors, particularly interactions between the knowledge workers which the literature identifies as so crucial to district creation. This has implications for cities who wish to create a new district, as a common theoretical framework would ensure implementation processes were more goal-oriented and efficient. Another problem stemming from a lack of a common theoretical framework is how to measure and evaluate districts. To fully understand the creation of urban innovation districts, a broader, more holistic research perspective is needed to account for the simultaneous considerations across theoretical domains.

iv) Methodology, city location and size

Descriptive and exploratory qualitative case studies represent the most prevalent type of research design, providing empirically rich accounts of this contemporary phenomenon in depth and within its real-life context (Yin, 2009), in a specific, spatially-bounded system (Stake, 1995). There is a strong propensity to focus on a single, well-established district in a single country (Arauzo-Carod, 2021; Leon, 2008; Pique *et al.*, 2019a), or multiple cases within a single geographic area (Esmaeilpoorarabi and Yigitcanlar, 2023; Esmaeilpoorarabi *et al.*, 2020b), with only a small handful comparing cases from two or more world regions (Heaphy and Wiig, 2020; Kayanan, 2021; Morisson, 2019). The vast majority of empirical studies examine districts in larger cities, with a notable shortage of works that specifically investigate the phenomenon in smaller or micro city contexts. There is a shortage of peer-reviewed articles describing districts in the European context, aside from those that focus on Barcelona. This risks truncating the range of variation represented by the full population of cases, limiting generalisability and raising issues of reliability and replicability. In addition, the vast majority of these empirical studies took place at a single point in time or over a delimited time period. Notably absent are longitudinal studies that consider the dynamics of change as districts evolve.

Research gap in methodology and location: noting how the boundaries between the urban innovation district phenomenon and localised context are not yet clearly evident, there is merit in using single case studies for the level of detail and understanding they provide. However more diversity is needed in research design, perhaps through the use

of an embedded case design that considers multiple units of analysis that look to a multitude of strategic dimensions or indicators, or that consider the phenomenon longitudinally, to allow for a more thorough analysis of a complex and particularistic nature. There is also an abundance of single case studies that focus on 'success' stories, with limited empirical study of 'failure' stories. Further empirical work is required on the reasons these districts fail to progress. Multi-case studies, including works comparing successful districts with those that failed, would help to strengthen validity and generalisability by demonstrating how the phenomenon varies or remains consistent across different contexts, settings, or situations. Also interesting would be cross-regional contextualised comparisons that generate awareness of local complexities and context conditions by adopting mixed-method strategies, triangulating qualitative research focused on the localised context with formal modelling or statistical analysis to uncover broader, cross-regional patterns.

2.1.4 Contextual literature review conclusion

This systematic review and theoretical thematic analysis considers the key conditions and factors identified as helping to drive or shape the creation of an urban innovation district or neighbourhood. It exposes a number of key insights which suggest that cities should consider the use of targeted start-up policy and interventions and development of physical spaces and events that enhance relationship-building to distribute innovative activities and facilitate the transfer of the codified and tacit knowledge exchange that drive innovation (Faems *et al.*, 2005). Articles reviewed overwhelmingly extol a socially-cohesive approach that promotes lasting community-building opportunities through policy and placemaking and the structuring and co-ordination of actor interactions through organisational, institutional and social networks. This will be of relevance to academics and policy-makers alike who are interested in creating the internal and external conditions in which an innovation district and urban knowledge community can thrive.

However, while the role of social constructs like networks, targeted networking events sponsored or supported by a district's institutional partners (Read and Sanderford, 2017) and place-based social activities for entrepreneurs (Kayanan *et al.*, 2022) are recognised, there is a tendency to neglect the human agency within these activities. There is a clear knowledge gap regarding the relationships of the actors charting the boundaries of networks in these districts, the processes of interaction between them (Acuto *et al.*, 2018),

the building of community and the sharing and exchange of ideas and skills (Kayanan, 2021) as they work and socialise, as well as the governance, policy and planning arrangements necessary to ensure the best interests of stakeholders, shareholders and the district as a whole. Further analysis is required that comprehensively takes into account district attributes, characteristics and the socio-cultural dynamics underlying interactions between key actors in multiple settings, to give a full account of the factors affecting urban innovation district creation.

2.2 Social coherency within start-up communities

Interactions (Håkansson *et al.*, 2009; Håkansson, 2014), maintaining and developing vital business relationships (Håkansson, 1982; Gummesson, 2002) and the ability to initiate new professional relationships are necessary for business growth and survival (Morgan and Hunt, 1994). As cities agglomerate innovative actors, the capacity to increase the development of dense networks and access to high-demand skills increases (Duranton and Puga, 2004; Ellison *et al.*, 2010), with regular, face-to-face interactions facilitating the transmission of tacit knowledge-sharing between co-located actors (Storper and Venables, 2004). Interactions between epistemic communities (Lissoni, 2001) result in the sharing of valuable tacit knowledge, with entrepreneurship in some regional contexts facilitated by proximity and linkages (Breschi and Malerba, 2001). The knowledge economy is critically dependent on the intellectual capabilities and interactions between entrepreneurs and technologists both within and traversing firm boundaries (Mokyr, 2011). Cooperation across firm boundaries (Håkansson, 2014) and informal communication and social relationships outside the workplace (Salavisa *et al.*, 2012) are considered crucial for technological innovation to emerge.

Complex systems of interpersonal and interfirm interactions that foster innovations systems have been shown to emerge in cities (Cooke *et al.*, 1998; Iammarino, 2005). A strong technological, or ‘tech’ community and ecosystem is credited with enabling a build-up of ‘talent’, who move from job to job and generate start-ups (Zukin, 2020b; Feld, 2012). Start-up communities facilitate entrepreneurship by providing local, informal networks of support and encouragement through which both tangible and intangible resources are shared, with trust built up through repeated interactions within the network and legitimacy acquired by receiving endorsements from other community members. The

academic literature on personal contact networks highlights the critical role these networks play in the entrepreneurial process, enabling entrepreneurs to gain competitive advantage by accessing unique information, resources, prior connections, referrals, opportunities, support and advice (Larson and Starr, 1993; Hite and Hesterly, 2001; Hite, 2005).

2.2.1 Nascent social connections in the urban technological community

Informal, socialising interactions outside the workplace have been shown to facilitate the exchange of resources not traditionally associated with formal ties (Feld, 1981). Interactions and engagement that occur at informal, socially-situated locations have been associated with increasing levels of trust by offering time and opportunity to strengthen relationships, suggesting the importance, and potential 'strength' of, weak ties (Granovetter, 1973) in connecting members of informal networks and giving them access to resources beyond the reach of their traditional networks. Professional relationships formed in a social space can act as a valuable enabling channel in the exchange of resources beyond the reach of traditional networks or formal ties, such as emotional or political support, strategic information, mentorship or new opportunities. Informal networks have been shown to assist with knowledge diffusion and subsequent economic growth in such innovation-focused cities and regions as Silicon Valley and Boston's Route 128, where informal, socially-situated interaction provided opportunity for relationships with people from divergent backgrounds and experiences. Observations on informal communication spaces in Silicon Valley's Wheel Bar describe how face-to-face exchange offered a source of information, inspiration, and innovation, while Silicon Valley's ascent over Route 128 is said to have been fuelled by the companies in the former leveraging network effects through a culture of openness and horizontal information exchange (Saxenian, 1996).

In innovation districts, the blurred boundaries between work and place have led to the creation of physical spaces for learning, fun, culture and networks (Yigitcanlar, 2010), with knowledge workers particularly valuing amenity-rich urban configurations with a diverse restaurant and café offering, interesting cultural opportunities and dynamic street- and nightlife (Asheim and Hansen, 2009). Inclusive activities that welcome aspiring,

first-time and experienced entrepreneurs, as well as mentors, employees of start-ups and service providers to start-ups, are considered crucial in engaging the entrepreneurial community (Feld, 2012). Informal and social events such as hackathons, tech meetups and coffee clubs have been shown to provide a tangible set of activities that establish social bonds amongst the entire entrepreneurial community (Feld, 2012) and hence enhance relationship-building amongst knowledge workers, distribute innovative activities and facilitate the transfer of the codified and tacit knowledge exchange that drive innovation (Faems *et al.*, 2005). However, despite recognition of social contacts and chance meetings as a crucial factor in relationship development (Halinen and Salmi, 2001; Dibben and Harris, 2001), the actual processes that affect the initiation of relationships amongst start-ups remains underexplored (Edvardsson *et al.*, 2008; Aaboen and Aarikka-Stenroos, 2017).

2.2.2 Tech meetups: sharing interests in a socially-embedded space

'Meetup' groups are a localised, volunteer-led, grassroots community initiative (Sander, 2005), an interest-driven, socially embedded space where members from idiosyncratic backgrounds, industry sectors, disciplines and fields can meet others with a shared interest and engage in intrinsically motivated activities (Bilandzic and Foth, 2017). Though they are facilitated through online platforms, they usually involve physical events that take place in a local context, attracting attendees from within a 30-mile radius (Meetup, 2023). These groups can take the form of modern communities of practice, combining face-to-face interaction with the use of digital platforms to connect, engage and share peer-to-peer knowledge. Meetup events have been shown to lead to the development of event-based social networks (Liu *et al.*, 2012) which involve both online and offline social interactions, captured in offline activities. Their social pluralism contrasts sharply with traditional organisational work spaces, offering a physical and relational space for learning and interaction and the transfer of social capital across fields.

Technology or 'tech meetups' are local, informal face-to-face events organised by and for technology professionals which have gained significant popularity in recent years, engaging many thousands of technology professionals globally on a regular basis outside of their working environment (Sharma *et al.*, 2022). Like hackathons and accelerators, tech meetups have provided paradigmatic events and spaces for forming a technological community by helping to establish the social bonds on which the urban tech ecosystem

relies, with new communities and groups emerging all around the world as a result of attending these tech meetups (Zukin, 2020b; c).

Data about technology-oriented meetups has been used as an indicator of the health of a local technology sector (Ingram and Drachen, 2020). The New York Tech MeetUp, thought to be the biggest tech meetup in the world, launched in 2004 with a handful of core hackers, programmers and entrepreneurs who shared an interest in new digital technology. By 2011, it had amassed a diverse, 15,000-strong membership. By 2020, it had more than 60,000 members, ranging from students and entrepreneurs to investors and CEOs (DellaPosta and Nee, 2020). It is credited with cultivating a strong and open business networking culture and playing a crucial role in creating a tech community and a prosperous ecosystem in that city in the early and mid 2000s (Cukier *et al.*, 2016; Rossi and Di Bella, 2017). In 2012, six years after its launch, the US start-up powerhouse city of Boulder, Colorado, had the second largest known tech meetup in the US, after New York. This was considered a must-attend evening for many in the start-up community, with 'the people, the space, and free drinks' considered the key building blocks to getting a tech event off the ground (Feld, 2012, p.84).

Participation in innovation and tech events and social networks have been identified as key outputs of innovation districts that activate community creation (Rapetti *et al.*, 2022). Aside from providing a platform for showcasing new technology or projects and building a personal reputation for specialist knowledge and achievements (Ingram and Drachen, 2020), tech meetups are driven by an ethos of sharing and support. Their presence in a city has been shown to nourish a culture of connected learning, sharing and peer interaction (Bilandzic and Foth, 2017) and result in the formation of occupational communities within these social spaces (Zukin, 2020a).

Tech meetups traditionally have two pre-structured elements – fixed timeslots for talks or presentations by pre-defined and promoted speakers, during which audience participation is relatively passive until the Q&A section at the end of each talk; and unstructured interaction during the interval and after the event, often at a post-event gathering. Participants attend outside formal hierarchical or organisational structures and speakers are typically not permitted to openly, formally pitch their start-up to potential investors or recruit on behalf of their company during their talk, though it is widely acknowledged that the events are used as an informal means of delivering their message.

The event interval and post-event gathering, often in a nearby bar, are usually used as an opportunity to network and talk with individual speakers or other attendees. Politicians and other institutional leaders have been invited to speak at these events, for example then Mayor of New York Michael Bloomburg spoke at the city's tech meetup several times in the early 2000's to announce new tech-related initiatives, which suggests recognition by institutional actors of their value as a vehicle for communicating with the tech community. However institutional involvement is limited and they remain a grassroots initiative.

Most research to date into tech meetups has focused on the agenda or speaker content and motivations of technology professionals to participate. Talks by domain experts, hands-on sessions and open discussion are considered the most popular categories of events organised by meetup groups related to software development (Sharma *et al.*, 2022). Amongst the main reasons for participating are learning, skills development, problem-solving, the need to meet other technical people in the same field, build a professional reputation and a supportive network of contacts for future help, as well as keeping abreast of technology and relevant regional news (Ingram and Drachen, 2020). There is evidence that these informal gatherings can play a role in contributing to local 'buzz and pipeline' in the way they spark interest and excitement in, and sharing of, new ideas and news, as well as facilitating continuous updates and learning opportunities, for example by hosting guest speakers from outside the region. Research suggests that the bigger and more heterogeneous the group becomes, the more facilitation is required to nurture connection, interaction and social learning (Bilandzic and Foth, 2017). Additionally, there is evidence that the gender of meetup organisers can affect gender distribution of group members and event participants (Sharma *et al.*, 2022). However there has been little attention paid to the actual interactions that take place at, or as a result of, these meetups, and how interpersonal connections are initiated and community evolves in this socially-embedded space.

2.2.3 Waterford Tech Meetup

The Waterford Tech MeetUp, a volunteer-driven event run by and for technology professionals, was launched in early 2019. It ran successfully until March 2020, when global health restrictions as a result of the COVID-19 pandemic forced the event to cease. It was relaunched in September 2022.

The event, which has an average of 70 attendees, is described by organisers as ‘a chance to socialise with (and learn from) like-minded people to discuss wide-ranging topics of a technical nature’ (Waterford Tech Meetup, 2023). It meets monthly and features talks from expert speakers on a variety of topics of interest to the community, including software development, programming languages, blockchain, VR and AI, with Q&A sessions after each speaker and ‘ample time for socialising’ (ibid.) during an interval in which snacks and drinks are served. It is followed by a social gathering at a local bar.

Waterford Tech Meetup is promoted on meetup.com and via social media and receives sponsorship from a number of local technology companies. Congruent with tech meetups globally (Sharma *et al.*, 2022), approximately one fifth of attendees are female.

The relaunch of post-COVID tech meetups in Waterford, and sponsorship of refreshments and provision of the use of a venue by Waterford Council constituted a key intervention in this study, at the start of action research Cycle 3. Of the Cycle 3 participants, 56% had started or spun out a company, and were hence considered entrepreneurs, while 44% described themselves to the author as aspiring entrepreneurs, in that they were in the process of developing a business idea or venture but had not yet fully established or launched their enterprise.

Chapter 3: METHODOLOGY

This inductive study purposefully supported the creation of a multi professional, innovation-focused community of technology-focused entrepreneurs in an Irish micro city as part of its research design, in order to bring a process perspective to the initiation of social relationships within that community. Its practice-based aims and objectives, and highly contextualised research setting, demanded flexibility and responsiveness from its methodology. Action research provided that responsiveness.

Using iterative cycles of planning, qualitative data gathering, analysis and evaluation (Dickens and Watkins, 1999; Herr and Anderson, 2014; Becker and Geer, 1957; Yin, 2015), the study documented and explored what participants think and do whilst interacting at, and as a result of regularly attending, a local technology or 'tech' meetup over time. It combined this action research approach with grounded theory (Charmaz, 2014) to add to the limited theory available that explains the connection between informal, socially-based interaction and the process of social relationship initiation in the context of a technological-focused entrepreneurial community.

This chapter introduces the methodological approach taken and how it guided data collection and analysis. It is laid out as follows:

Section 3.1 addresses the choice of an AR paradigm, providing a brief history of AR, its principles, key characteristics, the different approaches in academic research, how it differs from conventional qualitative methods; and identifying why it provided the study with the most suitable methodology to conduct analysis of an emergent research question. Section 3.2 discusses AR 'in action' in this study, and notes the steps taken to ensure quality. Section 3.3 details the impact of the philosophical paradigm adopted by the author and Section 3.4 the recruitment of participants. The study's data collection techniques are documented in Section 3.5, while Section 3.6 describes data analysis during three cycles of data preparation and iterative coding. Section 3.7 explains the ethical issues considered, the steps taken and assurances given to ensure the quality, credibility, transferability and dependability of the study.

3.1 The action research paradigm

Action research is a practice-based, exploratory form of research undertaken in a spirit of collaboration and co-inquiry (Shani and Pasmore, 1985; Marshall and Reason, 2007; Grant and Perren, 2002), an orientation to knowledge creation that arises in a context of practice (Bradbury-Huang, 2010) which must, in order to succeed, be a participatory process (Reason and Bradbury, 2008) that enables research participants to achieve practical solutions to 'real-world' issues or problems (Coghlan, 2019).

The term 'action research' was coined by Gestalt social psychologist Kurt Lewin (1946), who challenged conventional social science by proposing a participatory, practice-based approach to academic enquiry that emphasised the role of group decision in motivating commitment to change. Extending his theory (1951), Lewin put forward 'force field analysis' as a means of identifying human behaviour caused by driving and restraining forces affecting a group or organisation in the context of potential change, with equilibrium achieved when the sum of the driving forces equals the sum of the restraining forces. Lewin's model has been applied, adapted and extended to meet the requirements of several disciplines, notably healthcare (Wuest and Merritt-Gray, 1999; Hart and Bond, 1995; Meyer, 2000), education (Kemmis and McTaggert, 1987; Anderson and Herr, 1999; Elliot, 1991) and organisation management (Argyris and Schön, 1996). Corey (1953) and later Stenhouse (1975), amongst others, explored educational AR as a successful means of improving teaching practice by promoting a 'teacher as researcher' model. Though their work stemmed from Lewin's externally-initiated, democratic model that was functionalist in orientation and prescriptive in practice, teacher research is characterised by its practitioner/teacher, problem solving and eclectic orientation (Rudduck and Hopkins, 1985). Critiquing Lewin's model on the basis that the focus of the 'general plan' cannot be fixed, Carr and Kemmis (1986) emphasise the importance of reflection on the subsequent stage of planning. Susman (1983) stipulates that the iterative process of problem identification, action and reflection must include evaluation and specifying learning for the problem to be solved. Elliott (1991) proposes a more fluid model than conceptualised by Lewin that allows the general idea to change or evolve during the research process, with both fact-finding and analysis taking place throughout the research process, and not simply at the start. The spiral model of Kemmis *et al.* (2014) again emphasises revisiting the initial plan based on the initial cycle of research. This

multitude of approaches, definitions and uses of AR has given rise to debate within social and behavioural sciences regarding systematic identification of the key characteristics of AR (Holter and Schwartz-Barcott, 1993). There is general agreement that:

- AR tends to be qualitative in nature;
- It is a dynamic, cyclical process, requiring separate yet connected and dependent steps;
- The research is participative with both researcher and subjects, or participants, affected by the research actively participating;
- It is a reflective process.

Proponents appraise it as a practical and flexible yet theoretically-grounded and systematic means of investigating and initiating change. Participatory action researchers emphasise participation and empowerment (Baum *et al.*, 2006; Chevalier and Buckles, 2019; Heron, 1996), teacher action researchers rely on data to transform individual behaviour (Pine, 2008; Mills, 2006; Whitehead, 1993) and organisational action researchers tend to be interested in research and data driven decision-making (Dickens and Watkins, 1999). Amongst the more well-known adopters of an active, participatory approach are Freire's (1970) critical pedagogy to advocate for the participation of the oppressed; Argyris & Schön's (1996) action science application of single-loop and double-loop learning concepts; Heron's (1971) cycles of co-operative or collaborative inquiry; Habermas' (1984) dialogue-oriented practice and philosophy; and Kemmis and Stringer's (1999) action-oriented means of inquiry that seeks to empower individuals and organisations.

AR in the business discipline particularly focuses on generating actionable knowledge in the realms of strategies, practical tasks and structured hierarchical organisational systems, although the role and potential impact of collaborative communities is also an emerging area of interest **(**Shani and Coghlan, 2021**).** While AR in the business discipline tends to focus on the internal world within an organisation, AR in the marketing field often places a greater emphasis on the external, outside world of the market place (Perry and Gummesson, 2004). In the innovation management field, AR offers a methodology that provides a closeness to living, emergent systems and facilitates an exploration of tacit

aspects of practices and processes to transform practices through interventions (Ollila and Yström, 2020).

As a methodology, AR diverges from other more conventional qualitative paradigms in that the research and action proceed in a parallel form, involving a collaborative relationship between the researcher and the research subjects, with active fieldwork making up an important and extensive component of research activity. This contrasts significantly with more traditional qualitative approaches, during which the organisation or community being researched, or the unit being studied, is treated as a passive subject. Traditional and more static quantitative research techniques that focus on the 'facts' and codified 'procedures' for standard research problems have been attributed with alienating entrepreneurs in the SME environment (Grant and Perren, 2002), particularly because of entrepreneurs' preference for 'action' approaches to change (Choueke and Armstrong, 1998).

3.1.1 Suitability of action research for this study

The impetus for this study arose from research enterprise partner Waterford Council's dual goals of affecting changes in its approach to innovation generation in the city through working with innovation communities, and developing knowledge of the process. As will be discussed in greater detail in the next chapter, the study was guided by the identification of an emerging problem that had not previously been studied in depth and was not clearly defined: feelings of a 'disconnection', or lack of interaction and engagement, amongst local technological entrepreneurs, which were reported to the author by Waterford Council during the reconnaissance period, and also described by research participants during Cycle 1 interviews. The study's inductive nature necessitated a process of inquiry that would first elucidate this 'real world' issue, so that the definitive research questions could emerge, whilst also providing the flexibility and responsiveness to change direction, subject to new data or insights. With these conditions in mind, a number of qualitative approaches were considered at the outset of this study (Table 2) which would have facilitated close engagement with the community under study and the gathering of data that took into account the subjectivity of the participant in the context-bound setting (Elliott, 2005).

Table 2 - Methodological approaches considered for this study				
Method	**Aim**	**Methodological design**	**Data**	**Contribution**
Intensive case study (Yin, 2002)	To understand who/ what causes a unique phenomena and what are its impacts.	Ethnography, observation, semi-structured interview involving close dialogue, sustained engagement.	Small amount of rich, holistic and contextual data.	Description, explanation.
Narrative method (Clandinin and Connelly, 2004)	Give a research participant's account of a situation or experience to explain meaning.	Collection of narrative data, in the spoken, written or visual form.	Narrative of participant experience as raw data; researcher interprets the narrative.	Description, explanation.
Action research (Lewin, 1946; Reason and Bradbury, 2001)	Understand and solve problems/ issues by guiding real-time action.	Participative cycles of diagnosis, planning, action and evaluation.	Large amount of rich, holistic and contextual data.	Description, explanation, actionable knowledge in a practical context.
Processual analysis (Pettigrew, 1997)	Describe, analyse and explain patterns in management and change processes over time.	Longitudinal and comparative case studies. Non-participative. Holistic rather than linear explanation of process.	Larger amount of rich, holistic and contextual data	Description, explanation, guidelines for action.

Source: created by author

An intensive case study would have provided a real-time, context-bound approach that facilitated close, sustained dialogue with the population over time to access rich, detailed data from multiple sources in the phenomena's naturally-occurring context and develop grounded theory (Baskarada, 2014; Baxter and Jack, 2008; Stake, 1995). However, while shedding light on the phenomena, it would not have provided means of bringing about change within the community, in keeping with the practice-based aim of the study. Similarly, adopting a narrative method (Riessman, 2008) could have been used to access and interpret participants' accounts of changes within the community following sustained engagement. Although this aligned with the study's interpretivist paradigm of emphasising social context and interest in the subjective realities of participants and would have facilitated the involvement of the author in the process of empirical material generation and interpretation (Yin, 2015), both the case study and narrative method would have involved a passive approach, where the research gathered data but did not use insights gleaned from the data to bring about positive change in the research setting.

Processual analysis was initially considered a suitable approach which would take into consideration the nature of the problem under investigation (relationship initiation) and also the context of change (Pettigrew, 1997; Dawson, 2003). However, its focus on 'research about action' rather than 'research in action' would have limited the study's contribution to generating guidelines for action, rather than affecting action (PO1 and PO2).

After reflecting on both the purpose of the inquiry and the types of answers sought (Patton, 2002), action research emerged as the method that offered the most suitable means of systematically investigating all aspects of the phenomena under study and yielding a rich, meaningful dataset through sustained engagement and the building of relationships with participants (Shani and Pasmore, 1985), whilst also responding to an identified issue or problem in the context of practice (Bradbury-Huang, 2010).

The importance of an interactive process involving connectivity and synergy between local players has been noted during the creation of an urban innovation district (Battaglia and Tremblay, 2011). Proximity and active engagement have been shown to facilitate the necessary interaction for trust-building in cultural change and organisational learning (Schein, 1979; Senge, 1990). AR has been used to facilitate analysis of the dynamics and interdependencies connecting internal processes and the external environment (Clarke, 1997) by adopting the position that social phenomena are in a continuous state of change rather than static. It is attributed with promoting a collaborative, stakeholder approach involving researchers and practitioners as equal partners in the process, thus empowering participants to become part of a change process (Easterby-Smith, 1991). It is considered suitable for innovation capability development amongst stakeholders as it aims to develop their skills and approaches to innovation activation (Reason and Bradbury, 2001; Susman and Evered, 1978). It has been used to explore the impacts of stakeholders sharing and producing knowledge on relationship dynamics (Evered and Louis, 1981; Reason and Torbert, 2001; Coghlan and Brannick, 2014) and enhance collaborative innovation in interorganisational networks (Yström *et al.*, 2019).

In this study, AR facilitated the pursuing of both practice-focused and research-focused objectives, contributing to problem-solving and knowledge building, or expansion, processes. Crucially, it facilitated close interaction and co-operation between the author and participants to ensure the flow of data and provided a responsive means of

collaboratively researching ‘with’ subjects, rather than simply studying them (Dick, 2002) to generate knowledge of both academic and practical relevance (Coghlan, 2011). Furthermore, the exploratory aims and aspirations of AR (Rapoport, 1970) closely aligned with the practice-based objectives of this study.

3.2 Action research in action

This study uses practical AR (Holter and Schwartz-Barcott, 1993; McKernan, 1996; Grundy, 1982) to focus on the practical interest of ‘how’ social relationships are initiated through interactions within a technological community, and ‘how-to’ improve that initiation (Elliot, 1991; Herr and Anderson, 2014). The study commenced with a fact-finding ‘reconnaissance’ period to gather background and contextual information and gain an understanding of the situation through interpretation that informed and guided practical judgments (Herr and Anderson, 2014). It was followed by three over-arching AR cycles aimed at initiating social relationships over a 25-month period (Figure 2) during a data gathering process that allowed for human interpretation and interactive communication (McKernan, 1996) and promoted deliberative action (Grundy, 1987). Each ‘diagnose-plan-act-evaluate’ period spiralled from one cycle into the next as the author reflected upon a preliminary understanding of the issues affecting participants and then used these insights to alter the status quo by including conditions favourable to change (Reason and Bradbury, 2001).

Data analysis took place at the evaluation stage of each cycle, with each cycle influencing the actions or interventions introduced in the next. There were two meso (community) level interventions, at the start of cycles 2 and 3, with multiple micro (individual) interventions during Cycle 3 (Coghlan and Coughlan, 2015) (see Appendix F for full schedule of interventions). New participants did join the study at several points. This was particularly the case during Cycle 3, as new attendees at the tech meetup were invited to participate in the research. This approach was considered appropriate as it offered the potential to establish and follow the real sequence of events over time within the AR cycles and observe any changes in how participants interacted, particularly as a result of interventions or activities.

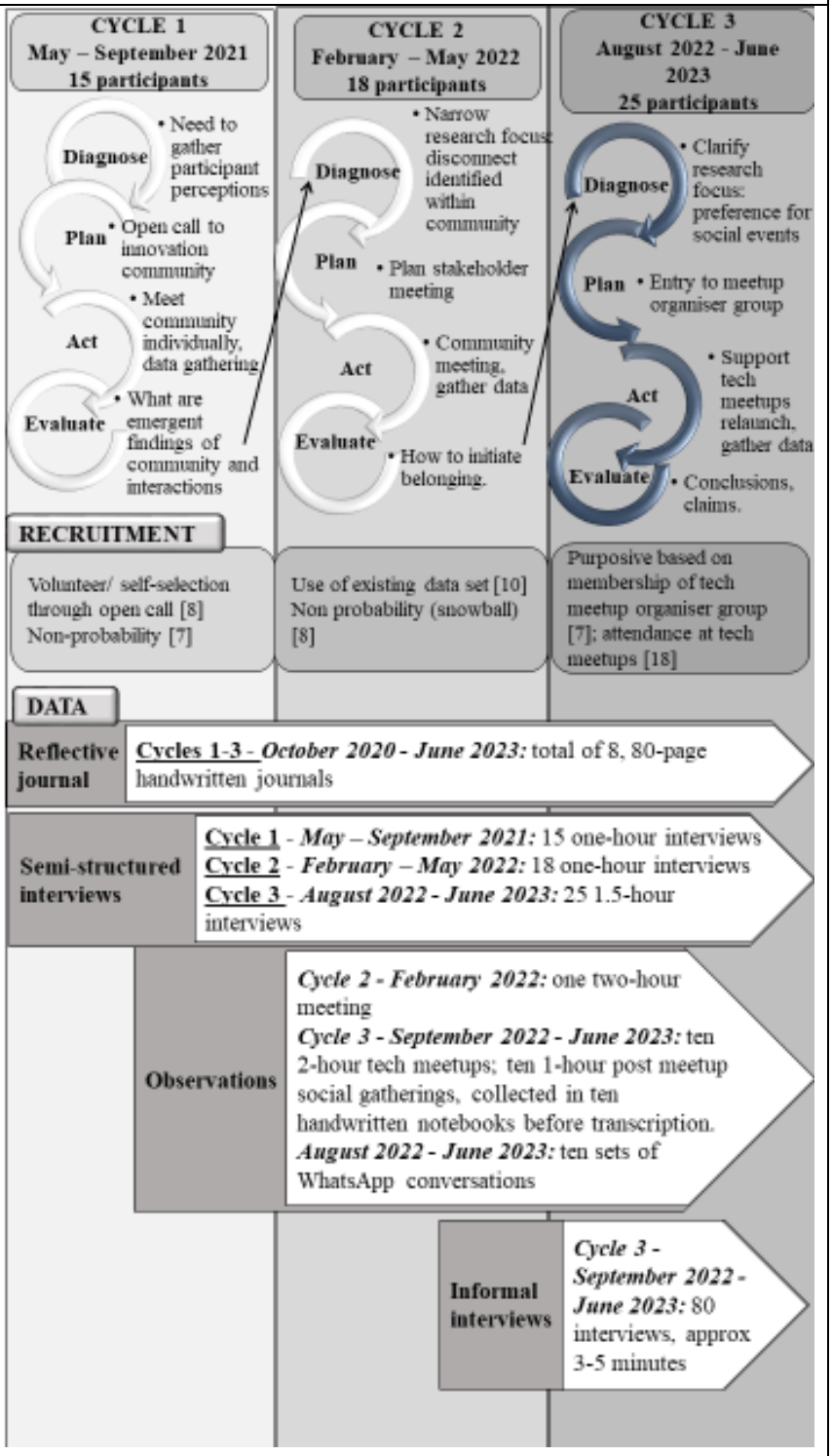
Figure 2 - The action research cycles

RECONNAISSANCE

October 2020 – February 2021

Meetings with Waterford Council to inform general research topic. This included gathering information on urban regeneration and physical innovation hub plans and Council's goals to support, and gather insights into, technological entrepreneurial communities.

Innovation districts literature review to inform general research topic



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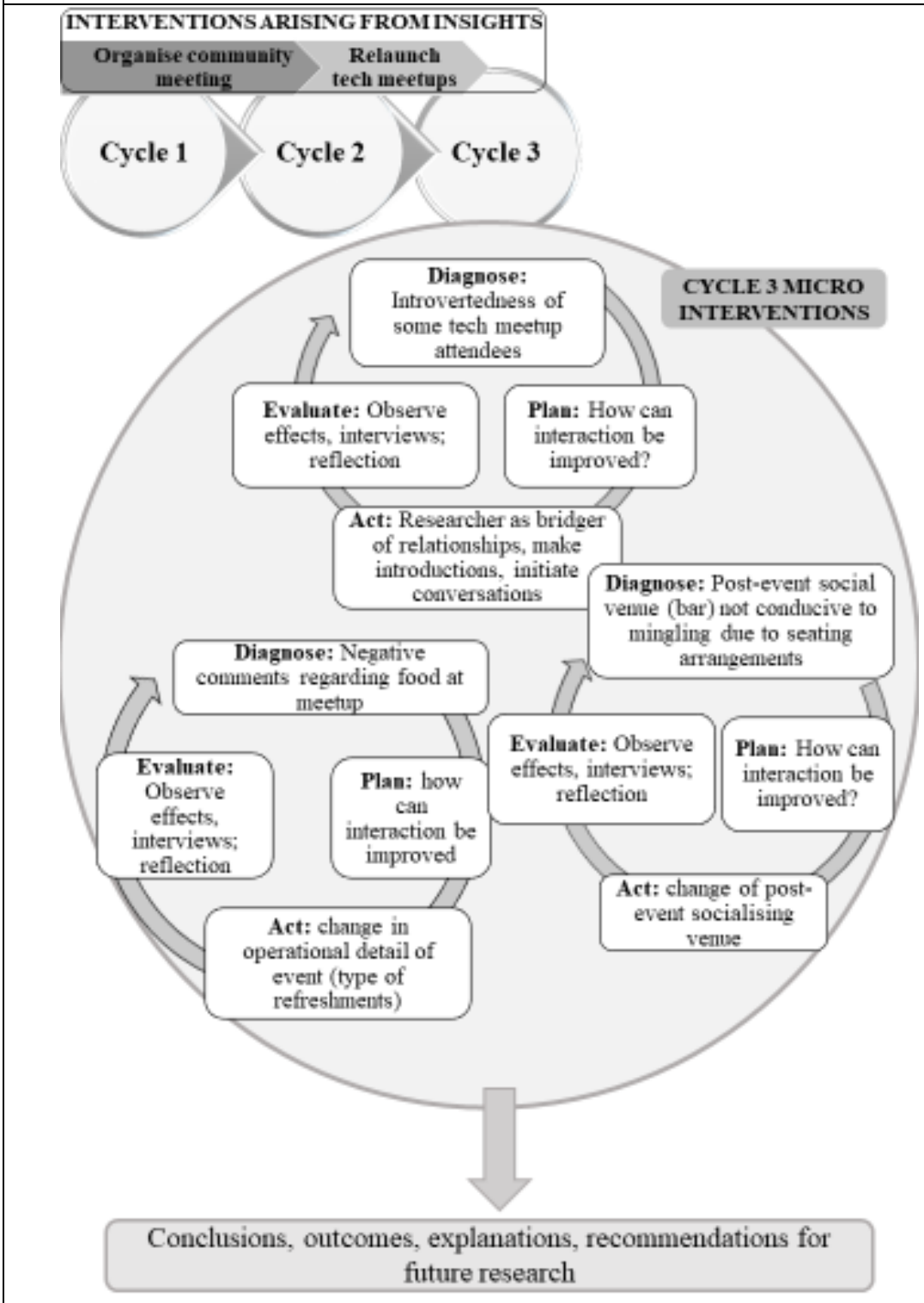
3.2.1 Defining a cycle

Deciding what constituted an AR cycle was not immediately obvious during the study, due to data collection and analysis taking place synchronously with the practice-based, 'live' project. The author deemed it important to identify temporal points where cycles began, ended or overlapped, in order to be able to recognise meaningful changes that may have arisen as a result of interventions introduced, and evaluate the significance of these interventions. For example, the convening of a formal meeting of institutional actors and technological entrepreneurs in February 2022 (Cycle 2) was latterly considered a revealing intervention as data collected at, and after, that meeting provided valuable new insights regarding participants' attitudes towards formal, institutional-led gatherings and influenced the author's involvement in the launch of informal, socially-situated tech meetup events in Cycle 3. Thus the action of convening the Cycle 2 meeting created the space and conditions for change. The introduction of a new intervention was influenced by the author reaching a point of data saturation and/ or identifying a clear trend emerging in the data. Hence the broad criteria was established that progression to a new cycle of AR was constituted by the planning and introduction of a new intervention.

3.2.2 Microinterventions

While the launch of the tech meetup is represented as the start of a single cycle in the research study (Cycle 3, Figure 3), the plan-act-research process also occurred on multiple occasions within this cycle, prompted by 'microinterventions' on the part of the author to initiate smaller, self-contained cycles where the boundaries were often permeable (Figure 3).

Figure 3 - Action research interventions and Cycle 3 micro interventions



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3.2.3 Role of the action researcher

AR is characterised by the active and deliberate self-involvement of the researcher in the context of his/her investigation (McKay and Marshall, 2001) in order to produce mutually agreeable outcomes for participants. However, the extent of this involvement is an important decision for researchers that necessitates careful consideration and scrutiny, as it can have important methodological, ethical and epistemological implications during research design (McGrath and O'Toole, 2012). It is crucial that researcher embeddedness is acknowledged to challenge any bias that might arise, and hence improve rigour.The author was required to negotiate and adopt multiple roles at various points that simultaneously straddled the action (such as helping to organise, or attend tech meetups) and the research (data collection/ analysis), sometimes in single dialogic encounters. Inherent concerns regarding closeness to the study and potential limitations to objectivity (Wolcott, 1994) merited scrupulous analysis of the author's role. In order to recognise and document the complexity of navigating this multiplicity, rather than rendering it unseen and unrecorded, a matrix was developed (Table 3) that provided clarity and distinguished the non-linear progression of the author's role, and if and when action, research, or both, were required. However, as illustrated, there was rarely a complete separation of roles. The matrix also distinguished where the author sat in terms of insider/ outsider participation engaged in (Herr and Anderson, 2005). Differences in roles can be largely attributed to the cycle of the research and the degree of AR intervention being undertaken by the author.

Table 3 - Role of the action researcher in this study					
Role of researcher/ *level of participation*	**Rationale**	**Key research activity**	**Cycle 1**	**Cycle 2**	**Cycle 3**
Planner/ *Outsider studying insiders*	Prepare for field work by having an in-depth knowledge of the business context	Urban innovation district literature review. Obtain documents about business context. Meet/ interview key stakeholders	*		
Organiser/ *Insider in collaboration with other insiders*	Work with other tech meetup organisers to launch event, mobilise community	Source resources (eg sound system). Set up room, organise food, assist with content creation for social media			*
Community nurturer or relationship manager (Sagawa and Segal, 2000) / *Insider in collaboration with other insiders*	Help to guide interactions, build relationships	Introduce attendees of tech meetup to each other, facilitate conversations, introduce interventions to initiate or improve interaction			*
Boundary spanner (Williams, 2002)/ *Insider*	Help to guide interactions, initiate new contacts	Introduce community members to institutional actors, facilitate conversations			*
Reporter/ *Outsider studying insider*	Data gathering	Document research, including participant interactions	*	*	*
Observer/ *Outsider studying insiders*	Data gathering	Attend meetings/ meetups, document participant observations of interactions at events and online.		*	*
Reflector/ *Outsider studying insiders*	Data gathering	Engage in reflective analysis; foster reflective analysis among participants	*	*	*
Sustained activity		**Activity dependent on stage of AR cycle**			

Source: created by author

The author took the view that no one approach was preferable over another. Instead, reflection-in-action (Schön, 1995) was engaged in to select the most appropriate level of participation based upon the context and setting. Acting as both participant and observer allowed productive relationships with participants to develop while also allowing space for the author to 'step out' of the research environment when appropriate, for example to observe and document events.

In this study, researcher embeddedness was acknowledged by engaging in reflective practice throughout the research process. This involved maintaining a critical awareness of researcher role, influence and positionality within the study, recognising how the researcher's presence and interactions potentially shaped the research environment and outcomes. Reflective practice was applied through self-awareness and reflection on the author's own biases, assumptions, and preconceptions through reflective journaling and dialogue with supervisors, acknowledging how these influenced the study. Consideration was also given to the ethical implications of embeddedness, such as power dynamics and their impact on participants (eg, Appendix G). By openly reflecting on and documenting embeddedness, the author enhanced the transparency, validity, and ethical rigour of the action research.

3.2.4 Ensuring quality

Bradbury-Huang (2010, p. 102) refers to 'a continuum from consultation with stakeholders to stakeholders as full co-researchers' as a criteria for quality in AR. Others have explored the impacts of stakeholders' sharing and producing knowledge on relationship dynamics between AR participants (Evered and Louis, 1981; Reason and Torbert, 2001; Coghlan and Brannick, 2014), with Shani and Pasmore (1985) identifying the quality of relationships as a key success factor in AR outcomes. The inductive nature of an AR approach has given rise to accusations of a lack of rigour and objectivity (Davison *et al.*, 2004) due to researchers potentially modifying their approach to suit the demands of the research situation (Cooke and Wolfram Cox, 2005). The methodology has been labelled unscientific and overly simplistic (Kanter *et al.*, 1993), too 'rigid' for the complexities of modern organisations (Marshak and Heracleous, 2005) and disregarding of the influence of politics and power (Burnes, 2004). In the hermeneutic tradition, Elliott (1991) theorised that action researchers develop a personal, interpretive understanding of an issue, which could lead to accusations of subjectivity and bias. The 'double burden' (Argyris and Schön, 1996) placed on action researchers to simultaneously advance knowledge whilst also addressing a 'real-world' issue facing participants can increase the risk of bias and diminish ability to control processes and outcomes and freedom to 'pick and choose problems' (Baskerville and Lee, 1999), as well as impinging neat reporting (Herr and Anderson, 2005) and result in a 'schizophrenic stance' for the researcher (Cohen *et al.*, 2002).

It has been argued that action research is characteristically full of choices, and the quality of an AR inquiry comes from awareness of, and transparency about, those choices at each stage of the research process (Reason, 2006). Advocates particularly call for close examination of the values guiding a researcher's everyday practice and methodical evaluation of the application of those values (Whitehead and McNiff, 2006; Bradbury-Huang, 2010), and point to the importance of the action researcher as a reflective practitioner (Schön, 1992; Schön, 1987) in order to avoid and minimise bias. Coghlan (2010) suggests interiority (Lonergan, 1972) as an important integrating factor that enables action researchers to appreciate the value of, and move between, practice and theory.

In this study, although the author's active participation and immersion in the field generated rich data, the socially-situated setting potentially threatened the quality of the findings by exposing it to accusations that the author's own social constructions, derived from a priori learning, assumptions and beliefs, could impact her actions in the field (Scott and Usher, 1996). It was hence considered important to acknowledge these markers of the author's relational position (Maher and Tetreault, 1993) by scrutinising the knowledge creation process through reflection on, and questioning of, the operations of that research process as they unfolded (Table 4). The study's design was a systematic procedure that used a reflective journal and digital memos (figures 5 and 6) to record decisions made and the rationale behind those decisions (Reason and Bradbury, 2001; Herr and Anderson, 2005), the author's evolving perceptions and day-to-day personal introspections during data collection and analysis (Lincoln and Guba, 1982), and the author's observations whilst conducting interviews. This created an audit trail, which was important in increasing the trustworthiness of findings and ensuring that the author's personal assumptions, individual belief systems and subjectivities (Russell and Kelly, 2002) were fully visible, documented and scrutinised. This guarded against ontological and epistemological positioning opening the door to bias (Oswald *et al.*, 2014). Noting the active involvement of the author in the field, the reflective journal also increased awareness of how identifiers such as her gender, sexuality, class and ethnicity might influence data collection and the research findings (DeWalt, 2002).

Table 4 - Questions reflected upon by author to avoid and mitigate personal bias	
QUESTION	**MITIGATION**
Have you selected a data collection method that you're personally most comfortable with, rather than the method most suitable to the study?	Iterative data collection and analysis, with reflection on whether the data collected can answer the research question. Interview questions informed by reflective journaling and field notes from event observation.
Are participant interview questions loaded or leading. Could they be misconstrued? Are they negative?	List of clarificatory and exploratory questions drafted and reviewed in advance of each interview. Order of questions reviewed. General and positive questions placed before specific and potentially negative questions. Care with the use of vocabulary to avoid ambiguous, leading or confusing words or terms, or overuse of adjectives or pronouns. Avoidance of acquiescence when interviewing. Maintenance of a neutral stance in any mention of enterprise partner. Showing unconditional positive regard to answers.
Is there a possibility of selective recall or inconsistent data collection during observation? Are you influencing the situation being observed? Are you in danger of becoming more familiar with the phenomena as research progresses, and so at risk of recording the same event differently over time?	Careful planning of data collection. Recording of one-to-one interviews. Use of shorthand note-taking at events. Long version of notes written up immediately after event. Standardisation of procedures, for example specifying all behaviours to be noted. After each tech meetup, sending a rough descriptive account of the event to organisers for their confirmation.
What relationships are being formed with participants? How are they being maintained? What enablers, difficulties have arisen?	Regular reflection, journaling of experiences. Development of procedural standards in relationships with participants. Maintenance of 'friendly outsider' role, where possible.
When sorting and analysing data, have you focused on data that confirms your personal opinions, expectations?	Avoidance of confirmation bias by continually re-evaluating impressions of participants and challenging pre-existing assumptions and hypotheses. Supplementing interviews, the main data collection method, with participant observation and reflective journaling to enable researcher to regularly hold herself to account by questioning her own views and motivation and negate any identified threat of bias or potential for personal beliefs resulting in the discounting of data (Koslowski, 1996).

Source: created by author

3.3 Research philosophy

This study builds new empirical knowledge on the subprocesses at play during social relationship initiation amongst a group of business actors in an informal, social setting. The research objectives, the highly contextualised setting, the methodology and, potentially, the author's own a priori experiences all contributed to shaping the selection of questions and mechanisms for finding answers in this study (Birks and Mills, 2022). The AR methodology, with the author aiming to create knowledge based on the participant's perspective, necessitated an interpretivist approach (Greener, 2008) with the author playing an active role in the research process and individuals forming their own reality of the world through interactions with others (Neuman, 2011) to provide an indepth, contextualised understanding of the phenomena (Myers, 2019). This interpretive paradigm is based on a relativist ontology and subjectivist epistemology, with meanings constructed socially as the researcher finds 'meaning in action' (Denzin and Lincoln, 2000, P. 296)

3.3.1 Ontology

Congruent with a qualitative approach, this study assumes a relativist ontology (Guba and Lincoln, 1982; Saunders *et al.*, 2009) in its commitment to action and influencing positive change in approaches to social relationship initiation amongst technological entrepreneurs beyond traditional, institutional views of networking that emphasise the value of informal, socialised interactions. This necessitated an initial, fact-finding Cycle 1 to define both the purpose and practices of the research (Coghlan, 2019) and clearly articulate the ambition to effect change and challenge the status quo, rather than simply study it, as would be the case in more traditional research studies. This problem-solving approach was also a driving force in the relaunch of the tech meetups (start of Cycle 3), allowing for new, or renewed, informal social ways of interacting that participants had expressed a preference for. It is rooted in the Freirean (1970) proposition that the status quo, in this case the environment and structure of relationship and community-building events, needed to be changed in order for participants to feel more comfortable attending and taking part.

The ontological stance taken in this study accepts that individuals do not function in isolation. Instead they affect, and are affected by, social contact and environment, adding

new dimensions to the problem through their behaviour and hence new perspectives for the author. The collection of qualitative data and active participation of the author in the tech meetups provided the means to gather insights regarding how participants viewed their social interactions at the events, and the way this understanding influenced behaviour (Kaplan and Duchon, 1988). The tech meetup community was considered to be in a constant state of flux, rather than a structured entity fixed in time and space

3.3.2 Epistemology

This study takes a subjectivist epistemological position, using an AR methodology that views knowledge as dynamic and supporting new and emerging ideas. This stance is well-suited to the inductive approach taken, with knowledge and meaning developed through participants' lived experiences and learning as a living process (McNiff, 2013). Methodological decisions were not predefined, but instead negotiated during the research process. For example, decisions to introduce micro interventions to encourage interaction (Cycle 3) were taken in consultation with the organisers of the meetups. Hence the adoption of an AR methodology allowed for epistemological fluidity, utilising interpretation as a means for knowledge creation, with action reformed through lived experiences and reflection. With regards to the latter, the study is also influenced by Schön's (1992) 'epistemology of practice' in the way it uses reflection-in-action and reflection-on-action to acknowledge the tacit thought processes which accompany and influence action through the use of reflective journaling. In the AR tradition, this involved identifying problem issues or situations, reflecting, reframing the problem and intervening to address the issue or change the situation. For example, while socialising at a bar immediately after a tech meetup was consistently identified by participants as an important initiator of interactions, the layout of the selected venue was not considered conducive to mingling due to small tables with limited seating. Hence a micro intervention was made (Cycle 3) by changing the venue to a bar with larger tables that accommodated bigger groups of people.

3.4 Participant recruitment

The rate of entrepreneurial activity in Waterford, where this study took place, has seen an improvement in recent years, recording the third largest percentage increase (15%) in the number of start-ups established in Ireland in 2023 (Gilmer, 2024). The government-funded Waterford Local Enterprise Office, which offers advice, training, supports and networking opportunities for local startups, provided financial grants to 178 new start-ups from 2019 to 2023 and supported an average of 300 core client companies per annum in the same time period. During that time, it held 591 events with 9,125 attendees, and an additional 2,247 mentoring sessions for entrepreneurs (Waterford Local Enterprise Office, 2024). While precise numbers on the activity level of technological entrepreneurs compared to the broader start-up population in Waterford are not reported, there were no institutionally-run regular networking events or mentoring sessions specifically aimed at technological entrepreneurs at the time this study commenced.

This cohort study was an emergent exploration that sought to better understand and draw conclusions regarding social relationship initiation amongst this particular group of people who shared the defining characteristic that they were technological entrepreneurs or aspiring entrepreneurs in the technological field who regularly attended a monthly tech meetup. Since the data-gathering goal was to deeply understand this specific research context by collecting as much data as possible related to the phenomenon of interest, rather than to generalise a population, random sampling techniques to achieve a representative sample were not considered appropriate. Instead, the inductive, exploratory nature of the research, and the practice aim to engage with and support the initiation of relationships within a technological entrepreneurial community, necessitated the adoption of an open-ended strategy to access participants, using flexible protocols during ongoing interpretation of data. This included purposive sampling at certain points, with the selection of the most productive sample to identify and select information-rich cases (Patton, 2002). Appendix H summarises how participants were selected, including the key practical and theoretical considerations.

3.5 Data collection

This study employed a real-time research design to capture ongoing interactions between participants in rich detail as they emerged. Such an approach has been shown to reduce

or overcome hindsight bias (Steier and Greenwood, 2000; Bizzi and Langley, 2012) by taking an open-ended, non- linear approach that allows interpretation to emerge as the entity itself develops. Methodologically, the study responds to calls for empirical studies of interactions in business relationships incorporating real-time and interaction-related data sources (Ford and Håkansson, 2006; Halinen and Mainela, 2013; Rocca, 2013; Guercini *et al.*, 2014).

3.5.1 Primary data source: interviews

Interviews, the most common format of data collection in qualitative research (Gray, 2021), were the main source of data that informed the findings and were used throughout all three research cycles, allowing for the collection of rich data with lots of explanatory details (Lincoln and Guba, 1985).

Cycle 1 interview questions were open-ended, starting with words like 'Who', 'What', 'Where', 'When', 'Why' and 'How' (for example, 'What is your experience of networking?') in order to establish context for the research by exploring actor constructions of interaction and relationships within their local business community. This practical, interactive approach (Berg and Lune, 2012; Grundy, 1982) involving dialogue between researcher and participant allowed the author to probe and expand upon responses in order to capture the 'voice' of participants (Lune and Berg, 2017). It facilitated a practitioner-informed identification of the problem by exploring participants' construction and negotiation of meanings (Cohen *et al.*, 2002) regarding the predefined thematic framework of relationship initiation, whilst also ensuring the interview remained focused and didn't veer too far off track (Rubin and Rubin, 2011). This helped to anticipate directions that the AR might take (Herr and Anderson, 2005).

As the research questions emerged, a more in-depth approach was adopted to extract detailed data regarding the phenomenon (Becker and Geer, 1957). Semi-structured interviews were characterised by the author always drafting a clear set of issues to be addressed in advance (Corbin and Strauss, 2008) and using probing questions to prompt expansion and elaboration (appendices J and K), so that the scope and understanding of the investigated phenomena could be broadened (Alshenqeeti, 2014). However flexibility was employed on the order of issues, so that the participant had the freedom to speak widely on the issues raised. This combination of structure with flexibility made optimum use of time and ensured that the interviews remained focused on the desired line of action

(Jamshed, 2014) and did not become overly conversational in style. More importantly, it facilitated responsiveness on the part of the author to new, emerging ideas and ensured all the factors underpinning participants' answers were explored (Legard *et al.*, 2003). Hence, the use of discursive, interactive interviews generated rich insights through the interface between researcher and participant (Kvale and Brinkmann, 2009; Holstein and Gubrium, 1995), whilst also providing insights that influenced the introduction of new AR interventions.

Aside from acting as a vital data gathering technique in its own right, the use of interviews also provided a valuable means of interaction (Blaxter *et al.*, 2010) that created space for the building of trust and rapport between researcher and participants, which was crucial given the AR methodology. This was especially pertinent during Cycle 1, when the study was in its nascent stage and the author needed a point of entry into the community in order to collect the detailed and extensive data required to advance knowledge. This early opportunity for interaction acted as an ice-breaker and eased the later acceptance of the author into the community as an organiser of the tech meetups during Cycle 3.

3.5.2 Supplementary data sources

Congruent with the AR methodology, data was also collected from a number of supplementary data sources to provide contextual background and inform interview questions throughout the study (Figure 4).

The author's involvement from the nascent stage of launching the tech meetups ensured access to a rich source of detailed participant observation data (Fine, 2003) that facilitated an exploration of participant behaviour and views within the context in which they occurred (Rubin and Rubin, 2011), enhancing understanding of the setting, as well as organisational and operational details. Observations noted by the author at events were verified during interviews.

Studies suggest text-based communication tools allow users to express themselves freely and fluently in a private, non-verbal interactive space (Gibson, 2022). The data-collection capabilities of instant messaging app WhatsApp are increasingly recognised (Mavhandu-Mudzusi *et al.*, 2022). In this study, its use by the core volunteer organiser group (Event Organiser, EO) offered the potential to complement data collected through individual interviews (Mare, 2017) and a new possibility for online research methods with high

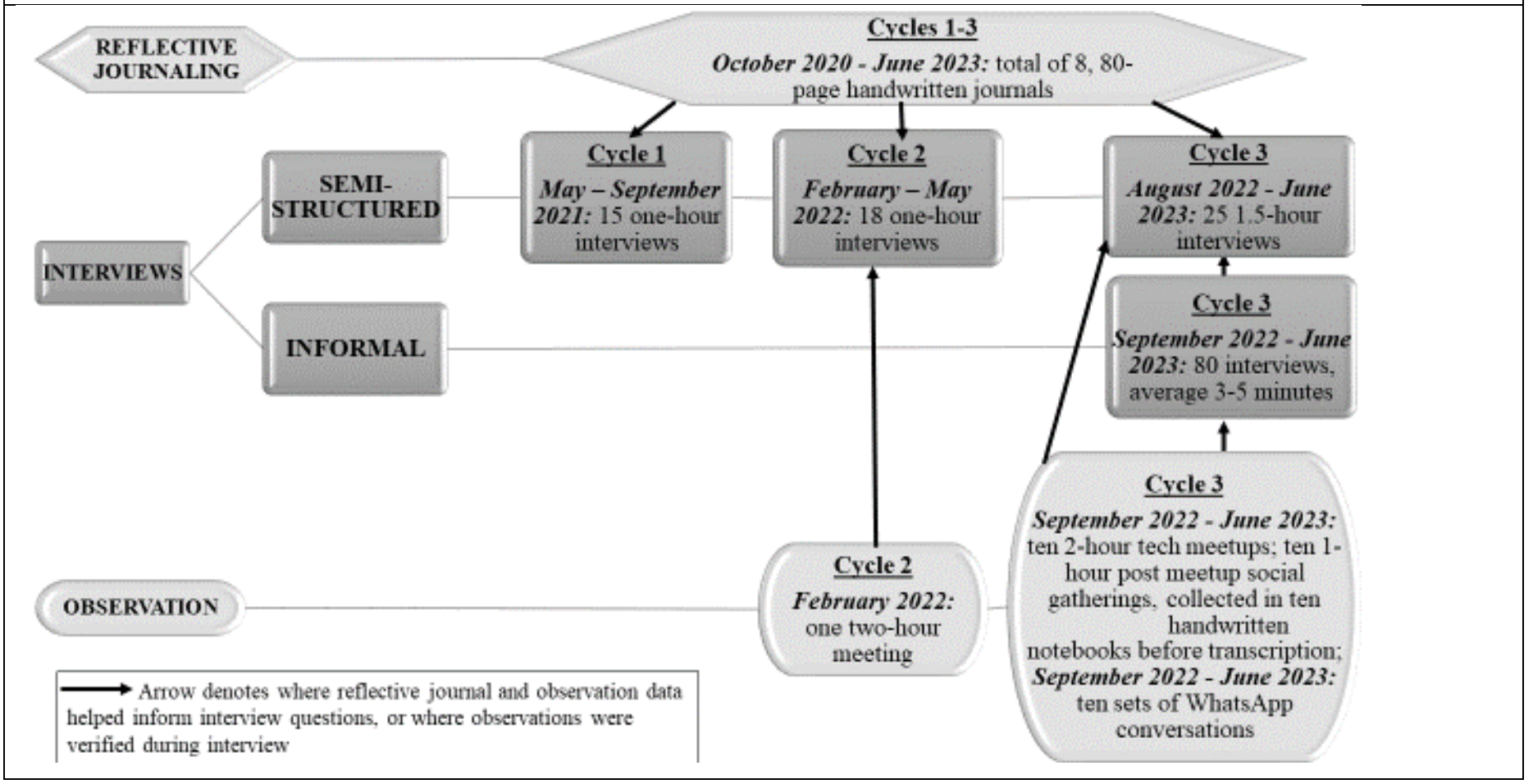
validity (Colom, 2021; Gibson, 2022). As with observation at events, it provided the author with a source of relevant questions to be addressed by participants during interviews, as well as providing contextual insights into how the meetups were organised (Schensul *et al.*, 1999; Bernard, 2017). The potential for observation of digital interactions to not fully capture complexity or emotion was compensated by the author's attendance at meetups and access to informal, clarificatory conversations.

Patton (2002) describes unstructured interviews as a natural extension of participant observation. During Cycle 3 study, unstructured interviews took place on an ad hoc basis with participants before, during and after tech meetups and during post-event socialising in a nearby bar. These resembled an informal conversation rather than an interview, in that they tended to be based on an unplanned set of questions that were generated instantaneously during the interaction (Gray, 2021) and relied heavily on spontaneous conversations during the natural flow of interactions (Patton, 2002). However, despite the unplanned nature of the conversations, the author ensured they were not completely random by keeping in mind the study's purpose during interactions (Fife, 2005) and having a loose agenda, or aide memoire (Minichiello *et al.*, 1990), to guide topic issues and ensure consistency across different interactions. Data collection involved the author jotting down notes as a memory aid after conversations occurred, where possible, and writing up notes immediately on returning home after the event. Informal interviews were used to inform questions for subsequent semi-structured interviews, as well as providing additional context to the understanding derived from interviews and a foundation of background information. They were particularly helpful in providing an 'eye witness' account of the reality of life in the research context, offering a distinctive insight into what participants said and did 'in the moment' rather than solely accepting the version of this activity that they presented during interviews (Mulhall, 2003; Marshall and Rossman, 1999).

Finally, congruent with the AR methodology, a reflective journal was used as a data gathering tool and also to reflect on the author as research instrument through which data was generated (Denzin and Lincoln, 2000). In accordance with its fundamentally subjective nature, the reflective journal was written in the first-person, with hard-copy notes first handwritten into a notebook (Nadin and Cassell, 2006). On review, these were colour-coded using a highlighting pen, with notes coloured in green indicating reflections

upon the research process and notes in blue indicating reflections on interaction with participants, for example regarding an informal conversation at a tech meetup. Colour-coded reflections were transcribed into a Word document, which made it easier to back up and search using data analysis software. Logging perceptions and opinions of the research process in the field, and also reflecting upon and logging views on field notes after they had been transcribed (Schön, 1995), was an important part of the research design that improved critical thinking, facilitated the examination of thoughts and impressions which cause bias (Meloy, 2001), helped to develop understanding about the role of the researcher (Finlay, 2002), and provided insights which helped to inform AR interventions and guide the inductive research process.

Figure 4 - Integration of data sources



Source: created by author

The use of multiple methodological tools common to the qualitative research paradigm helped to corroborate findings and ensure reliability of outcomes (Bryman, 2016; Stake, 2003; Yin, 2013), with the methodological tools working in constant interaction so that insights from observation and reflection could be used to help inform questions for, and maintain the focus of, interviews (see appendices L and M for data collection operational details and protocols developed to ensure consistency in approach and mitigate any potential biases associated with the use of interviews (Chenail, 2011)).

3.6 Data analysis

Grounded theory (GT) (Charmaz, 2014; Corbin and Strauss, 2015) was employed to develop knowledge about social processes grounded in real-world experiences (Strauss and Corbin, 1990; Charmaz, 2006). The philosophical underpinnings and unique, context-bound characteristics of the study were considered congruent with a GT approach (Morse *et al.*, 2002), which provided a systematic yet flexible and exploratory means of analysing a localised phenomena that could not be explained with existing theories or paradigms (Creswell, 2007; Bryant and Charmaz, 2007; Engward, 2013). GT's provision for iteration between data collection and data analysis (Corbin and Strauss, 2008) was congruent with the study's AR design and inductive nature. Neither GT nor AR are a linear process and the interplay between GT's comparative methods, coding and memoing (Morse *et al.*, 2016) and the iterative, recursive AR paradigm ensured that emergent leads in the data could be followed by the author making interventions in the field. Adopting a GT framework ensured data collection and analysis were not one directional and presented the author with a concurrent system that maintained an openness to multiple and potentially competing perspectives of the emerging phenomenon.

3.6.1 Analytic approach: constructing theory grounded in data

Multiple approaches to GT (Glaser and Strauss, 1967; Strauss and Corbin, 1990; Charmaz, 2014) can cause confusion to the novice researcher. On careful research of, and reflection upon, the main approaches to GT at the outset of this study, Charmaz's (2014) approach was considered best suited to allowing the author to develop theoretical insights grounded in the empirical data while also reflecting the interpretivist emphasis on

understanding the subjective interpretations and meanings embedded within the data. Charmaz (2006; 2000) provided explicit directions and the heuristic devices necessary to proceed with ordered, systematic iterative data collection and analysis of the multiple realities presented through the principles, opinions, beliefs, sensations and expectations of participants, rather than a single reality (Hallberg, 2006). This approach enabled the author to explore the complexity of the process through ongoing interaction between researcher and participant in order to find and present patterns identified in the data (Maykut and Morehouse, 1994). Responses were not grouped according to pre-defined categories, but instead significant explanatory categories emerged from the data itself through an inductive reasoning of coding units which were identified by the author as significant to the focus of enquiry (Lincoln and Guba, 1985). Through a process of continuous comparison (Charmaz, 2014) and refinement over the course of the analytical process, categories underwent content and definition changes to help the author to generate more abstract concepts (Charmaz, 2006), refine these concepts and develop a coherent explanatory model. This mitigated against the research becoming a purely descriptive analysis.

Qualitative Data Analysis Software

Although GT provides a flexible, comparative means of analysing data, it is nonetheless a complex process. Its inadequacy in recognising the embeddedness of the researcher and their agency in the construction and interpretation of data is well-documented (Olesen, 2007). Failure to explicate a detailed audit trail of analytical processes and decisions, as well as the rationale and justification for those decisions, can give rise to charges of flawed logic and researcher-induced bias. Notwithstanding the thick and hence highly valuable description (Geertz, 2008) provided by the application of GT, it necessitates meticulous application to ensure clear, accurate and transparent presentation of findings. The large volume of data generated in this study invariably created potential for methodological errors and posed the risk of the author becoming overwhelmed by, and absorbed with, data organisation, at the expense of thorough analysis (Myers, 2019). Qualitative data analysis software programme Nvivo was selected as a user-friendly tool that offered the possibility of organising and easily searching the data, as well as writing and linking memos about aspects of documents, facilitating an accurate and transparent data analysis process (Welsh, 2002). This systematic approach was important in

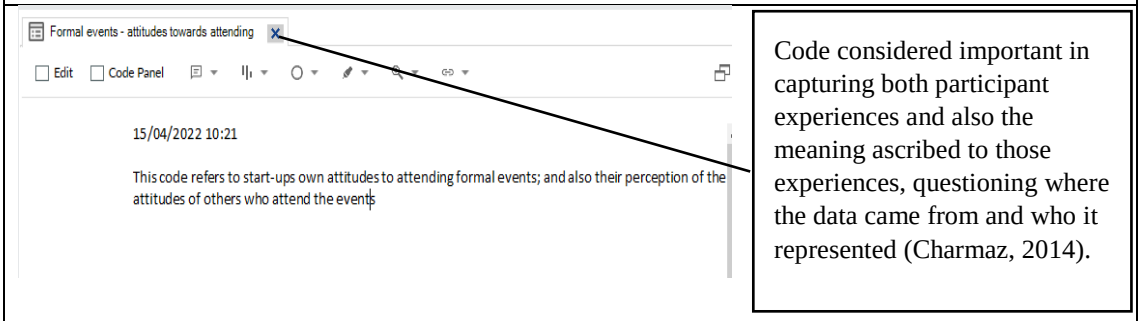
establishing the trustworthiness of the research (Strauss and Corbin, 1990) by rendering all stages of the analytical process traceable and transparent.

Capturing the missing context: memoing and annotations

Digital memos and annotations were used throughout the analytic process to summarise higher-level codes and categories, as well as capture reflections generated through the author's interaction with the data (Strauss and Corbin, 1998). These proved an essential tool in improving analytic quality (Birks and Mills, 2022) that enabled the author to record and articulate, 'in the moment', both her growing understanding of the data and also any contextual factors derived from observation and interviews that might have been 'missed' during transcription. Aside from leaving a crucial audit trail that improved the rigour of the study, the use of memos and annotations was important in identifying linkages between incidents over time through constant comparison and, ultimately, proposing empirical findings against categories. Memos and annotations considered the following key areas:

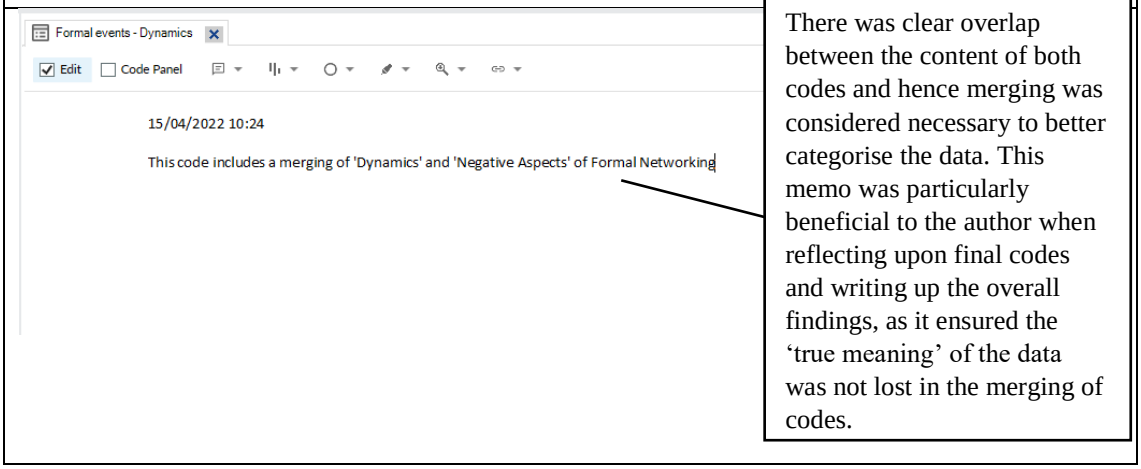
- **Explanatory:** capturing content of the code on which it was reporting (Figure 5), or context in which it was captured, for example noting that a comment was made sarcastically.
- **Case relevant:** capturing background information recorded against participants, noting any possible patterns in relation to participant profiles
- **Informative:** capturing the relatedness of codes to each other, noting ideas regarding their importance in addressing the research question, and also the merging of codes during iterative cycles of coding (Figure 6)
- **Analytic:** capturing emergent patterns, sequencing disparate codes into a structured narrative that informed Findings or considering literature/ gaps in literature.

Figure 5 - Example of Cycle 2 explanatory memo: formal events - attitudes towards



Source: created by author

Figure 6 - Example of Cycle 2 informative memo: merging of codes



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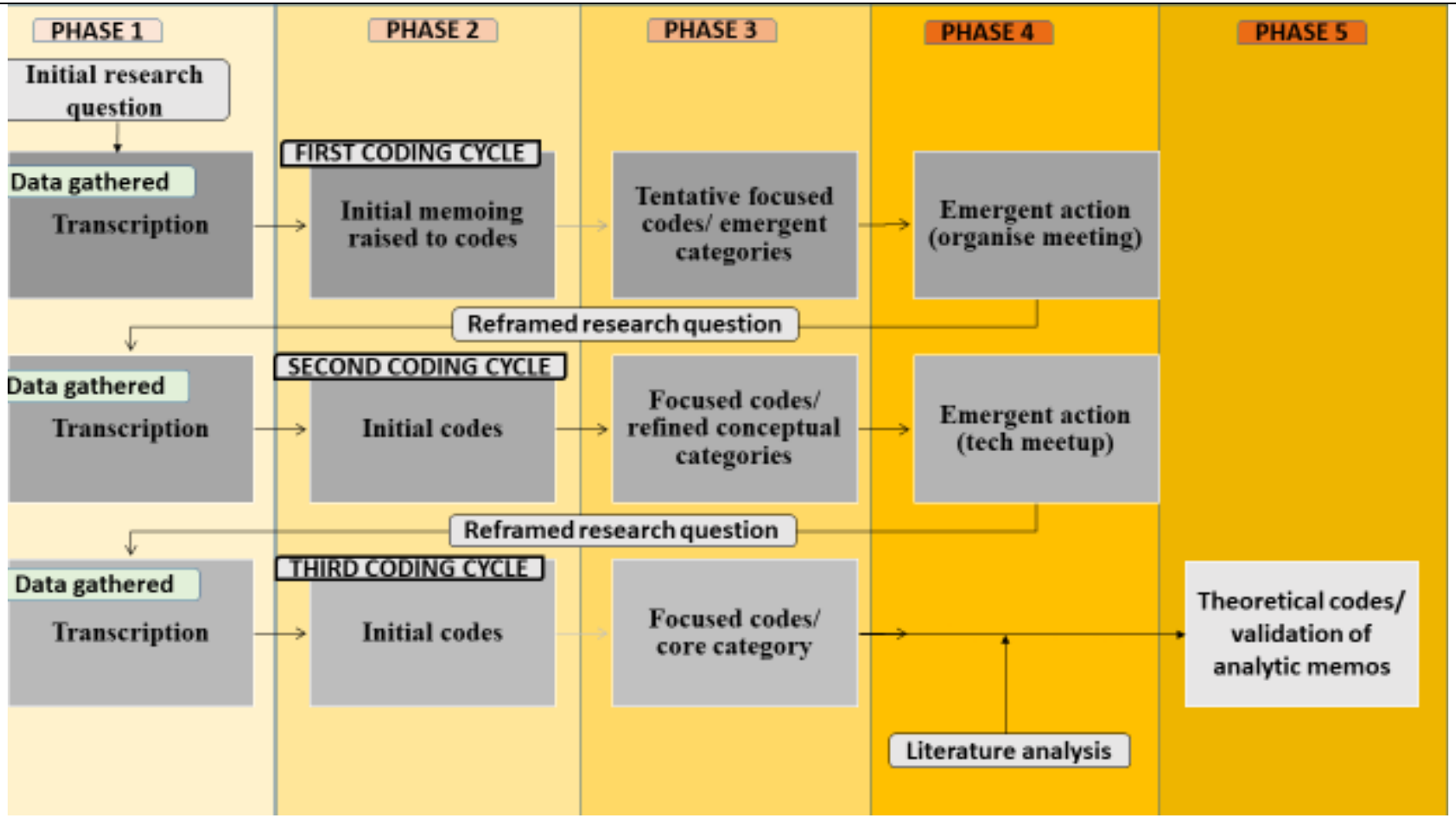
At the end of each coding session, digital memos and annotations were reviewed and, where relevant, expanded upon in the reflective journal, ensuring the author stayed 'close' to the data and avoided any preconceived ideas (Charmaz, 2014), as well as providing ideas for AR interventions. As such, the memos provided valuable supporting documentation in this study that facilitated analysis and tentative coding early in the research process, while also acting as an ongoing data source for iterative reflective journaling.

3.6.2 The coding process

Coding took place during all three AR cycles (Figure 7), with multiple rounds of line-by line, open coding in order to fracture the data, compare incidents and seek out patterns of

similarities or differences. In total, there were five phases of analysis, each involving three separate AR cycles of coding. The first coding cycle consisted of initial categorisation of open codes, both the first and second cycles were characterised by the managing of codes, and coding cycle three involved data reduction through consolidating codes into a more abstract theoretical framework. All three coding cycles used writing, through digital memos, as a tool to prompt deeper thinking of the data in order to identify AR interventions and draw conclusions (Bazeley, 2009).

Figure 7 - Analysing data during three action research cycles



Source: created by author

Phase 1: Data preparation

In the case of interviews, field notes and reflective journal entries, procedural steps of data preparation (Appendix O), organising and proof reading were developed for each fully transcribed file before importing to Nvivo, with each file progressing through three rounds of proof reading (Appendix P). During proof-reading, emerging themes were noted in the margins of the document in pencil and later typed into Nvivo to act as researcher memos. A combination of naturalised and denaturalised transcription (Davidson, 2009) was required to achieve the analytical objectives and research goals of exploring the meanings and perceptions of participants in the dialogue (Charmaz, 2000), thus increasing validity and accurate representation (Oliver *et al.*, 2005) (Appendix Q). While the use of naturalised data can be distracting (MacLean *et al.*, 2004), its use in this study provided a rich detail of qualitative data and complete depiction of the participant voice which could have been be lost if all non-verbals or tokens were eliminated. The author acting as the sole transcriber of all data mitigated against misrepresentation of any speech data that might have occurred if another transcriber had been employed. Jefferson's Transcription System (2004) was drawn upon and adapted to provide basic transcription conventions for this study, with consideration also to the work of Silverman (2001) (Appendix R).

Phase 2: Initial coding

Phase 2 of data analysis involved Initial Open Coding (Charmaz, 2014), using inductive reasoning to apply short labels to as many identified abstract concepts, conceptual similarities and reoccurrences as possible from early data (Charmaz, 2006). Rather than focus on antecedents and outcomes, the author adopted a processual view, examining participants' views on the exogenous and endogenous factors and forces attributed to impacting upon relationship initiation. The level of analysis considered both the 'facts' as presented by participants, such as the benefits of connecting with others, and the 'interpretations and emotions' of different participants living through the same processes, for example instances of empathising with others (Appendix S). The author paid special attention to the use of terms by participants relevant to the formation of personal linkages, relationships and dyadic interactions, and also how different people may use the same terms differently. In vivo codes were generated when the same phrase reoccurred in three or more interviews and was hence considered representative of a concept by multiple participants. For example the code 'community spirit'

was created to group together in vivo references to the existence/ strength of start-up community spirit. A codebook with clear definitions was developed to record rules for inclusion (Maykut and Morehouse, 1994) and ensure a structured, consistent approach to analysis (Appendix T),while Nvivo coding stripes helped to manage the coding process and provide insights into early codes, such as where the densest parts of coding were located in transcripts (Appendix U).

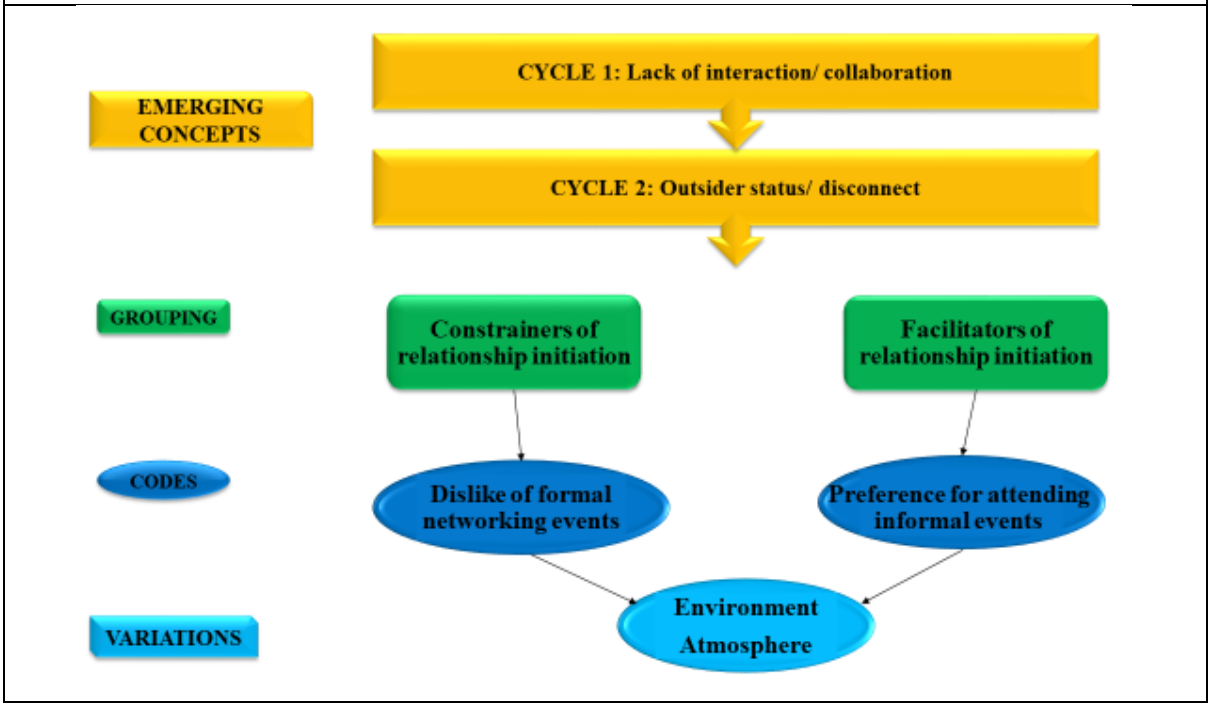
During initial coding of cycles 2 and 3 data, codes from earlier coding were reviewed in a systematic process of constant comparison and questioning to establish whether any were connected to, or could be subsumed beneath, newly emerging categories. As with Cycle 1 data, the author continued to code for actions rather than topics or themes, where possible, using gerunds to help define the action taking place and hence illuminate the implicit processes, for example 'sharing', 'interacting', 'ice-breaking', 'morale-boosting'. This approach was congruent with the research aim to explicate not so much WHAT is happening, but rather HOW this particular phenomenon occurs.

Phase 3: Focused Coding

Focused scrutinising, refining, strengthening, merging and grouping of codes during Phase 3 using constant comparison facilitated the sorting and synthesizing of data and evaluation of codes to ensure that labels and rules for inclusion accurately reflected coded content. The use of descriptive codes was avoided where possible, to give the coding process a more analytical basis. Instead, the author continued to take a processual approach, using codes that denoted action, or 'process codes' (Saldaña, 2014) in order to capture the dynamics of the process of interaction (Weick, 1979) (Appendix V). The author maintained an open-minded and constant-questioning approach to emerging codes, concepts and categories, in order to remain open to new ideas (Charmaz, 2014; Strauss and Corbin, 1998). Tentative focused coding of cycles 1 and 2 data elevated the most frequent and significant codes to a higher level, in order to identify the emerging research question and possible AR interventions. These early categories related broadly to participants' views on the forces affecting the existence or absence of new relationships amongst the local innovation community; the development of collaborative relationships with other business actors based on past experiences, such as attending formal networking events; and the value associated with interacting with other members of the community informally or socially. As connections between codes were noted and categories of information emerged, an early conceptual map was developed (Figure 8) which grouped codes

into two key emerging categories– the positive and negative forces and factors affecting, or facilitators and constrainers of, relationship initiation, the former often associated with informal events and the latter with more formal events. This framework helped further the analysis of the data in relation to emergent codes central to the research question, allowing variations of an emerging concept to be teased out by revisiting the data to reflect upon the potential meaning of particular passages and then returning to the text to validate any potential concepts. For example, recurring variables during Cycle 2 included the atmosphere affecting nascent interactions, the environmental context in which the interactions occur, and how these shape perceptions of interactions taking place (Figure 8).

Figure 8 - Early conceptual map arising from cycles 1 and 2 tentative focused coding



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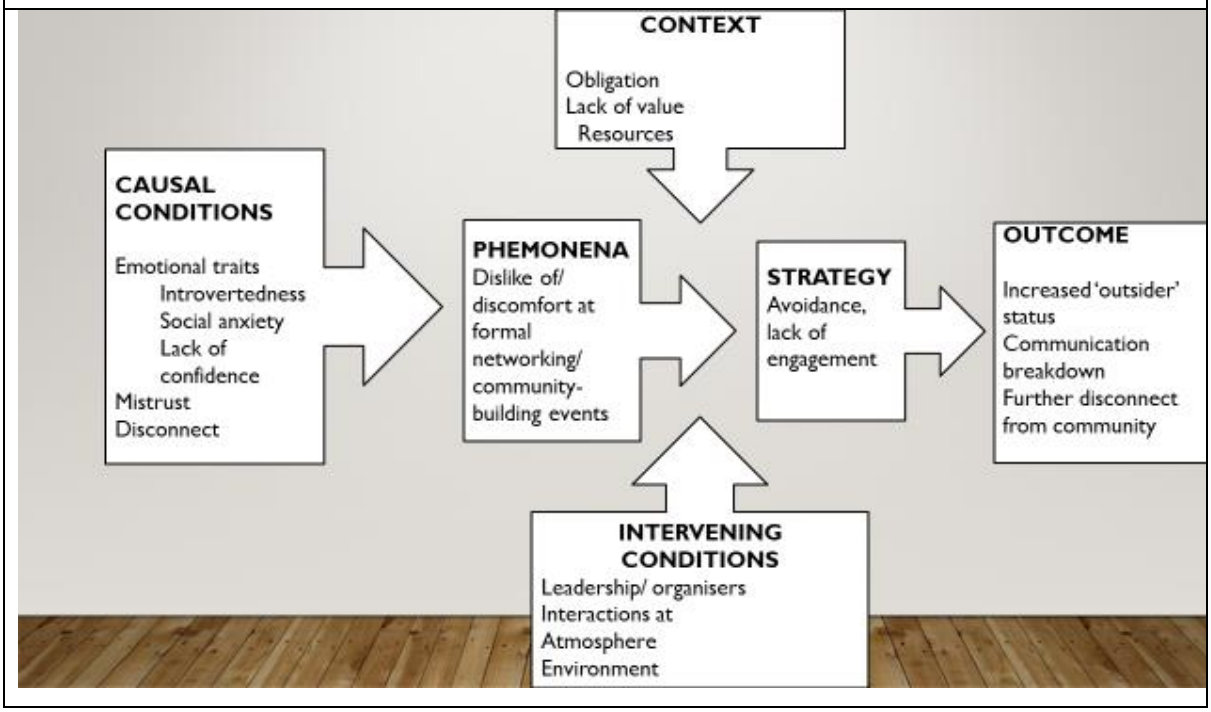
Phase 4 Data saturation and AR intervention identification

Phase 4 of analysis involved reaching a point of data saturation and, in the case of cycles 1 and 2, identifying an AR intervention which would move the study on to the next round of data collection and analysis. Delineating the context and situations of the actors and identifying the conditions under which specific actions and thought processes emerged during initial and focused coding was helpful in identifying both the problem as perceived by participants, and also a call for action that eventually emerged from the data to inform interventions. This was considered in keeping with the AR paradigm of identifying and providing a solution to a real-

world problem (Creswell and Clark, 2017). For example, at the end of AR Cycle 1, a point of data saturation was considered to be reached when a clear trend emerged regarding participants' strong views on the positive and negative forces affecting their interaction within the local technological entrepreneurial population. In particular, participants' feelings of being an 'outsider', or 'apart' from the local business community and disconnected from the activities of institutional stakeholders provided an impetus for the first intervention of the study: to convene a meeting of institutional actors from local government and academia and technological entrepreneurs that provided opportunity for discussion of planned innovation-focused, institutionally-led projects within the local innovation ecosystem. This meeting marked the beginning of Cycle 2, and the start of a second round of data collection and analysis.

A point of data saturation was considered to be reached at the end of Cycle 2 when a key concept emerged from the data: a perception amongst participants that social interaction with professional contacts in an informal setting fostered more effective and authentic interactions and, as a result, generated better relationship-initiating outcomes. It became evident that many participants did attend formal, structured networking and business community-building events and initiatives but they felt uncomfortable at them, and did not consider them of value in generating meaningful interaction and setting the foundation for new relationships. Corbin and Strauss's (1999) Coding Paradigm was used to further tease out this core concept and elucidate how causes, context and intervening conditions such as the environment in which these events take place, the atmosphere at the events and also individual, emotional aspects affecting participants' shaped attitudes and ensuing action, as they responded to the phenomenon under this set of perceived conditions (Figure 9).

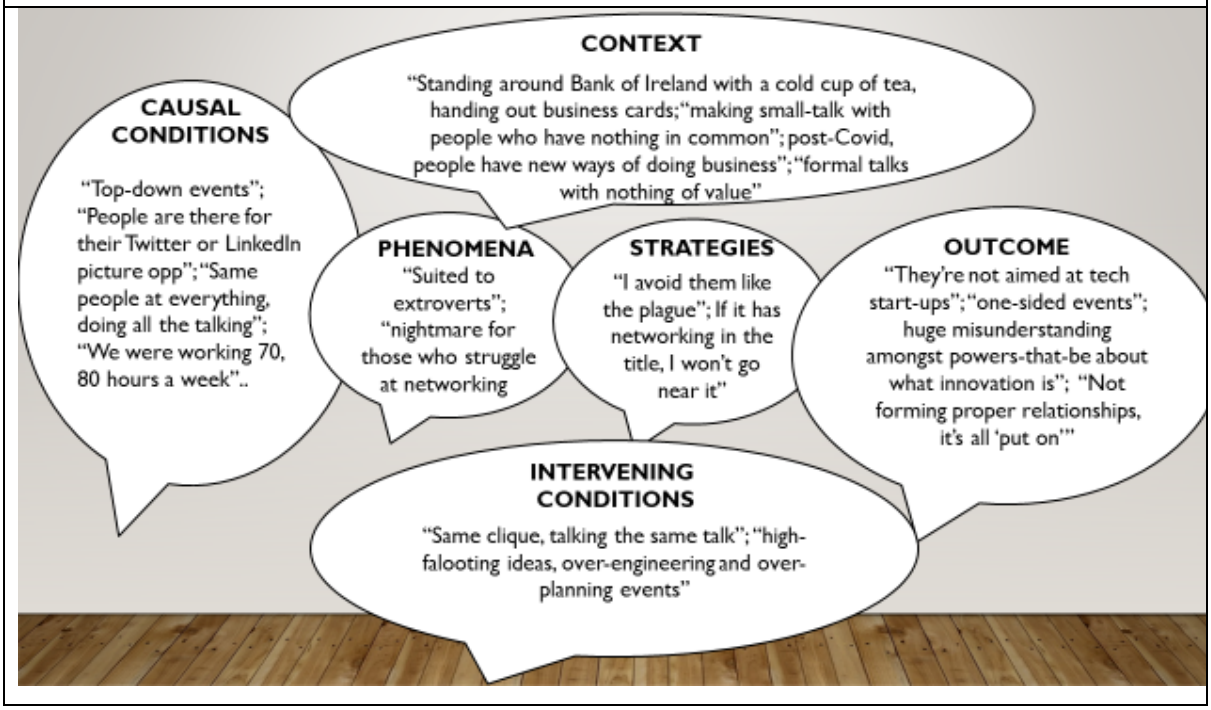
Figure 9 - Core concepts from second coding cycle, using Corbin and Strauss's (1999) Coding Paradigm



Source: created by author, using Corbin and Strauss's (1999) Coding Paradigm

Analysis at this point in the study suggested closer examination of the microdynamics of nascent interactions at informal, social events was required. The statement emerging from the data by the end of Cycle 2 – that technological entrepreneurs do not feel comfortable at formal, institutionally-led community-building and networking events (Figure 10) – was interpreted by the author as a call to action that prompted the launch of the tech meetups at the start of Cycle 3.

Figure 10 - Sample quotes illustrating core concept emerging from second coding cycle



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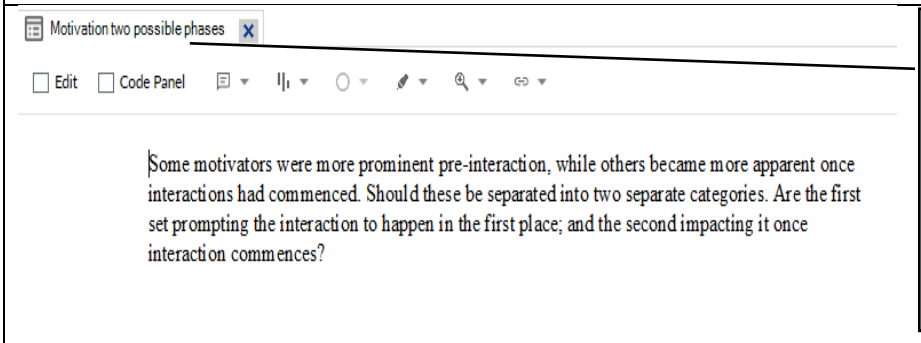
Phase 5 Theoretical codes, memo validation

Theoretical coding took place at the end of Cycle 3, with data reduction involving the consolidation and iterative refining of codes and sub-categories into a more abstract and conceptual map of a final framework of codes through the use of inductive-abductive analysis as themes emerged and it became apparent that some form of social exchange was taking place. This will be discussed in greater detail in chapters 4 and 5. Analytic memos were revisited and validated by further interrogating the data to seek evidence embedded in the data that extended beyond textual quotes to support the stated findings (Figure 11).

Figure 11 - Analytic memo on Cycle 3 sub-category 'Motivation'



Considered important as it led to the creation of the conceptual category 'Reinforcement' , which took place at the earliest part of the model developed (Chapter 4)

Source: created by author

This involved cross tabulation of categories with the author's observations as recorded in the reflective journal, and also in the literature, to ensure the author stayed 'close to' and 'in constant conversation' with the data, thus challenging any assumptions, elevating the level of critical reflection and analysis and improving the evidence-based quality of the findings (Birks and Mills, 2022). These memos were then synthesised into a coherent report which resulted in the writing of the Findings and Discussion chapters.

3.7 Ethical considerations

Ireland, where this study took place, does not have a formal national policy or regulatory system for research integrity. However the National Research Integrity Forum (2019) endorses the ALLEA (2017) Code of Conduct and provides four commitments pertaining to good research practice that define the principles of integrity, uniformity, fairness and confidentiality in research; and five categories of misconduct: research practice, data-related, publication-related, personal, and financial. The Forum further provides a process for breaches of ethics and integrity within the research community. This study abided by the ALLEA code and was governed by the South East Technological University (SETU)'s Code of Conduct for the Responsible Practice of Research (2019), which sets out clear obligations of the researcher to conduct ethical research and communicate its outputs appropriately, and reflects Bouter's (2020) key steps for fostering research integrity.

The potentially subjective nature of qualitative studies such as this raises a number of key ethical questions that must be considered at the outset to promote a culture of ethical awareness (Shaw, 2003). These considerations include the conduct of human subject research, methods of access and informed consent, power relationships between researcher and participants, including potential conflicts of interest, socio-cultural factors and differences in ideology, internal/ external pressures to complete the study on time and questions of authorship (Watts, 2008). In particular, AR's inductive, practice-based, iterative method of inquiry that seeks to solve problems and improve aspects of participants' social world (Reason and Bradbury, 2001) exposed the study to potential accusations of a lack of rigour and objectivity (Davison *et al.*, 2004; Cooke and Wolfram Cox, 2005; Elliot, 1991). The potential for personal relationships to develop with participants pointed to the importance of a reflexive process to question any assumptions or bias that might arise (Wallace and Sheldon, 2015) and encourage the researcher to explore how knowledge was produced, the institutional, social and political processes

affecting its construction, and the role and position of the researcher (Holland, 1999). Additionally, the grounded theorist's active role in generating new theory from a phenomena raised a range of ethical issues, from how the grounded theorist advances the purpose of the study to assigning appropriate authority and power to the interviewees and documenting a logical framework in order to enable other grounded theorists to replicate similar research (Creswell, 2012).

3.5.1 Ethical assurances

Prior to field work commencing, the author completed a university module on Research Ethics and Integrity, which included learning on the regulations, standards and norms in ethical research, as well as an exploration of how to avoid behaviour that could discredit research work and identification of ways to respond to questionable practices (Nebeker, 2014). This significantly enhanced her insights into ethical practice, questionable research practices (QPRs) such as fabrication, falsification, plagiarism (Israel, 2015) and the codes and principles relevant to the business discipline and a qualitative methodology, prompting further reading and reflective writing upon the importance of ethical assurances prior to fieldwork commencing. The author successfully applied to South East Technological University (SETU)'s School of Business Ethics Committee for approval prior to field work commencing (Appendix W). The committee suggested minor modifications to the approach taken, which were adopted by the author (Appendix X).

Protecting and informing the participant

The real-world setting of this AR study, with deep embeddedness of the researcher in the research setting and close and open communication between researcher and participants, necessitated a rigorous approach to ensure the rights of participants were protected at all times and the highest standards of ethics upheld. In particular, using WhatsApp as a data collection instrument is an emerging but limited area of interest (Shahid, 2018), with practical ethical implications for data collection, quality and analysis that held a potential risk of privacy and confidentiality breaches (Neo *et al.*, 2022). Potential threats ranged from failure to obtain consent to difficulties in retaining the attention of large chat groups throughout the data-collection process (Barbosa and Milan, 2019). To ensure the study remained visible to participants and open to suggestions from others (Winter, 2003; Khan, 2014), the author

developed a comprehensive, clearly-worded participant information sheet (Appendix Y) and informed consent form (Neuman, 2011) (Appendix Z). This information sheet was always followed by an email to each participant, offering an opportunity for the participant to ask any questions or further discuss any aspect of the research prior to committing to participation. An opportunity for member checking was embedded by sending participants an executive summary of the findings at the end of data analysis, for their review and comments. Including a participant review of the accuracy of the research was considered especially important in ensuring that the interpretations were fair and representative (Creswell and Clark, 2017). During data analysis, participant identity was protected by using unique identifiers and keeping all data securely stored (Khan, 2014). To mitigate potential breaches of integrity and ethics, key principles, codes and strategies were developed and rigorously applied (Appendix AA).

Chapter 4: FINDINGS

The collection of rich, detailed data from multiple sources provided significant background about the participants, interaction processes and the research setting of this study and ensured a thorough investigation of the dynamic phenomena that went beyond the surface of the subjective views of participants (Charmaz, 2006) to shed light on any changes over time. An emergent method (Charmaz, 2008) was adopted to build an inductive understanding of the process of relationship initiation within the empirical world as events unfolded and knowledge accrued, with findings from cycles 1 and 2 narrowing the research focus to specifically consider the microfoundations of social relationship initiation between technological entrepreneurs in an informal, socially-situated setting. During analysis of Cycle 3 data, as themes emerged and it became apparent that some form of social exchange was taking place, abductive reasoning was introduced to find new insights while analysing the data through the lens of social exchange theory. This approach provided the author with a means of better understanding the ideas emerging from the data and developing an explanation for those ideas.

This chapter takes a chronological approach to the emergent findings during iterative collection and analysis of data over a two-year period, from May 2021 to June 2023, when data collected ceased. The findings are organised by AR cycle and presented sequentially. The emergent themes using data garnered during each cycle are described in the context of how they impacted the ensuing cycles, revealing the 'action of the research and research of the action' (McNiff, 2013), without interpretation. The implications of these findings will be discussed in more detail in Chapter 5. Each subsection introduces the emergent codes and categories identified during analysis which helped the inductive research questions to emerge, with extracts from transcripts offered to support the findings and amplify the lived experiences of participants.

4.1 Cycle 1: scanning the startup community landscape

This inductive study originated with Waterford Council's dual goals of affecting changes in its approach to innovation generation through working with innovation communities, and developing knowledge of the process and commenced with the broad starting point of exploration:

> *What are participants' experiences and views regarding interaction and their relationships with other business actors within the local technological entrepreneurial community?*

In keeping with the study's philosophical and methodological choices, the goal in first approaching the study with this open focus was to reconstruct participants' perceptions of their relational experiences in the localised setting and the meanings they ascribed to those experiences, and explore potential interventions. Posing these initial, open questions thus created the conditions for emergent inquiry to take place. During Cycle 1 (May-September 2021), a small purposive sample of 15 participants who had experience starting, growing or spinning out a company in the technology sector were recruited through volunteer (self-selection) and non-probability sampling, and interviewed. This number was considered appropriate to keep the quantity of data to a manageable size.

4.1.1 Cycle 1 emergent leads

Close, line-by-line reading of Cycle 1 data helped the author gain familiarity with the empirical world (Lofland, 1995) and revealed early codes, or 'emergent leads' (Charmaz, 2008), relating to participants' views on individual actor relationships amongst the local community; past experiences of initiating collaborative relationships with other business actors; and the value associated with interacting and collaborating with new contacts. Although this was the first of three AR cycles, tentative focused coding was used to elevate the most frequent and significant codes to a higher level. Two exploratory categories emerged – the positive and negative forces and factors affecting relationship initiation. Second order themes were used to aggregate codes and create the primary analytic category 'Initiating Relationships' and sub-categories 'Constrainers' and 'Facilitators'.

4.1.1.1 Facilitators

Environment emerged as a key factor in providing the conditions where authentic interactions occurred (35 references across 15 interviews). Participants noted how proximity – for example co-locating start-ups at co-working spaces, or staging social events where people could regularly meet spontaneously and informally – provided access to networks and opportunity for new relationships, regular communication, idea-making, collaboration and general peer-support through casual encounters and conversation:

> *"We'd all have a few beers and a few pulled pork blaas* ((laughs)). *But we're all chatting to each other ↑"* (Cycle 1, Participant 8) (↑ represents a rise in intonation).

Providing opportunity to informally chat whilst eating and drinking together was considered to create an atmosphere conducive to interaction, providing an impetus for actors to spontaneously mingle and converse:

> *"That relaxed social space is somewhere where people have the confidence to start adapting more, naturally talking to each other…"* (Cycle 1, Participant 11)

Regular, casual or informal interactions were seen to 'break the ice' and lay the foundations for more formal collaborations and partnerships (11 references across seven interviews):

> *"If we could generate more of that relaxed network blending or mingling, where people who have started businesses are just talking, chatting to people who want to start businesses…"* (Cycle 1, Participant 9)

Participants regularly used language associated with nurturing when describing how they felt supported by mentors or other start-ups in the past, for example using terms such as 'look after' or 'lean on':

> *"I can't sing their praises enough and I'm not just saying that because I know the lads down there* ((smiles)). *But any time I put people in touch with them, they always look after them. And that's what we need…"* (Cycle 1, Participant 4)

This prompted the creation of the parent category Nurturing to describe codes that referenced psychosocial support given or received which subsequently impacted relationship initiation (15 references across ten interviews). This included references to empathising with other start-ups by sharing challenges and experiences. Openness and honesty regarding challenges faced was considered critical in the building of trust and self-confidence, with participants welcoming the opportunity to learn from the experiences and mistakes of others in a positive way:

> *"If you meet somebody who has done it and you get the opportunity to talk to them* (0.2). *You might get some words of wisdom but what you might get too is the confidence to go and* <u>*do it*</u> *↑. I mightn't be able to inspire someone or give them words of wisdom but maybe somebody would say 'Well Jesus, she did it'…"* (Cycle 1, Participant 5)

The need to find specialised expertise and information, and gain introductions to new people, drove many participants to maintain regular interaction within the start-up community (10 references across six interviews):

> *"For me there was my own research* (.) *there was talking to business owners who I know, people with experience, people who started recently in their own journey down entrepreneurship…."* (Cycle 1, Participant 2)

4.1.1.2 Constrainers

The strongest idea emerging from the data was that these technological professionals perceived themselves to be 'isolated' within the broader business community (grouped in the sub-category Isolation - 31 references across 15 interviews), with descriptions of how they felt 'out of place' at formal, institutionally-organised networking events; and 'alienated' from the institutional actors whom they considered key innovation community stakeholders (sub-category Alienation - 30 references across 15 interviews).

> *"I went to a number of Chamber events just before we went into lockdown and it was mostly professional services type people, you know, solicitors and accountants, you know (0.4) definitely not for me…" (*Cycle 1, Participant 8).

Resources, namely time, were identified as a cause of isolation and a key barrier to relationship initiation, with participants describing how they were too busy to regularly attend organised networking events, or too 'single-minded' in their passion and drive for commercial success to make time. This perceived lack of connectedness impacted participants both professionally, for example in terms of accessing expertise, both also personally, resulting in an absence of a supportive peer network to offer guidance and moral support during challenges faced. Participants identified a number of emotional or personality-driven aspects to their sense of isolation, describing how social anxiety at formal networking events was often a barrier to interaction. Stress induced by the everyday challenges and risks facing start-ups, such as financial and commercial pressures, was attributed to creating feelings of insecurity and a lack of self-confidence. While some attributed their own successful relationships to having the 'confidence' in 'pick up the phone and asked for help or advice' from people they knew, others displayed a lack of confidence or insecurity that prohibited them from 'reaching out'. Fear of failure, or others becoming aware of one's failure, was identified as a significant inhibitor to entrepreneurs engaging with other entrepreneurs. Additionally, participants expressed a belief that interaction and new relationships are 'probably' occurring amongst other start-ups that they are not aware of, suggesting feelings of exclusion and a sense that some entrepreneurs did not have the tacit knowledge or connectedness to become involved in this interaction, suggesting a 'fear of missing out' (coded as FOMO). A sense of alienation was associated with a disconnect between institutional actors who organise networking activities and the actors, or community, they aim to include in these activities. There was frustration over a disjointed approach to community-building initiatives, with descriptions of various business support groups and bridging organisations operating in 'silos' by not communicating with each other,

and those who design and operate government-led initiatives never having 'lived' the 'entrepreneur life', and hence not understanding the challenges faced (9 references across four interviews). Mistrust of the motivations of institutional actors was evident in a perception that institutions sometimes organise community-building and networking events as a public relations or marketing opportunity for their own organisation, with not enough understanding of, or attention paid to, the type or form of interactions that would benefit entrepreneurs on an individual level (appendices AA and BB).

Perceptions of a lack of 'community spirit' (11 references across eight interviews) were associated with an absence of opportunity to 'mingle' and converse informally with others:

> *"There are initiatives… there's an initiative with the* [redacted] *and I think* [redacted] *have a mentoring system but actually No, we don't. We don't have opportunities for people like that to go and just meet other people for a cup of coffee…"* (Cycle 1, Participant 4).

Reflecting the time period in which this data was collected (May-September 2021 when COVID-19 restrictions relating to public gatherings were still in place in Ireland) lack of, or breakdown in, relationship initiation was also partially attributed to a dearth of opportunity for in-person interactions due to the pandemic (13 references across six interviews).

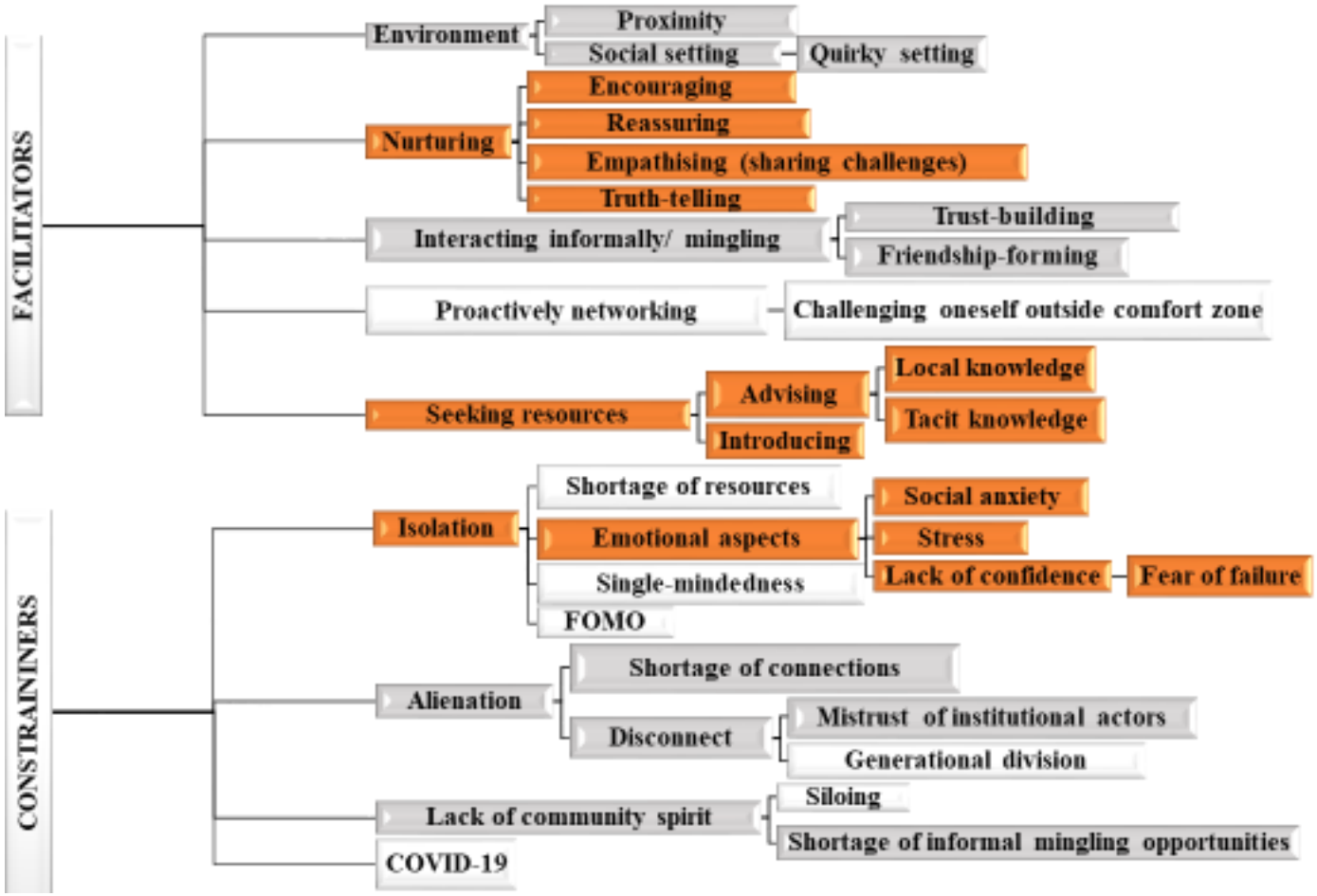
4.1.2 Inductive ideas

A point of data saturation in Cycle 1 was considered to be reached when a clear trend emerged regarding participants' strong views on the constrainers and facilitators affecting the initiation of new relationships. This early analysis identified technological entrepreneurs' feelings of being an 'outsider', or 'apart' from the general business community, 'disconnected' or 'alienated' from the institutional actors who co-ordinate and manage government-supported innovation activities and initiatives, and uninformed about institutionally-led, innovation-related projects in the micro city.

A preference emerged, based on historic experiences, to attend community-driven, business relationship-building events in an informal, socially-situated setting, which better facilitated mingling and the formation of authentic relationships (indicated in grey, Figure 12). Participants overwhelmingly expressed the view that relationships which began informally were more 'authentic', in comparison to relationships within formal networks, that were more structured or institutionally-organised or led. Networks that began informally were associated

with stronger, more supportive bonds that facilitated the exchange of both instrumental or economic resources, such as information and services, and affective or socio-emotional resources, such as emotional support, amongst nascent start-ups (indicated in orange, Figure 12).

Figure 12 - Ideas emerging from Cycle 1 data



Source: created by author

As well as informing the construction of emergent categories, this early analysis provided an impetus for further sampling and the planning of an AR intervention to further explore the phenomena. This intervention involved the author organising a meeting of participants and institutional actors in an informal setting with the following, practice-based aims:

1) To gather technological entrepreneurial actors together in an informal setting in order to inform, and seek their views about, a specific innovation-focused project currently being planned by institutional actors (addressing issues raised in grey boxes, Figure 12);
2) To facilitate and encourage in-person discussion amongst actors regarding how to improve interaction and relationship initiation and support each other in grappling with the issues raised in the orange boxes (Figure 12);
3) To provide opportunity for informal conversation amongst participants (addressing issues in both orange and grey boxes, Figure 12).

The staging of this meeting marked the beginning of a new AR cycle, Cycle 2, and the start of a second round of data collection.

4.2 Cycle 2: connecting and informing the technological entrepreneurial community

Cycle 2 data collection (February-May 2022) involved the author returning to participants to observe and question them further, in order to shed new light on emerging ideas and tentative codes and categories. Cycle 1 participants were invited to attend the in-person meeting (Cycle 2 intervention) and additional participants invited based on their status as a local technological entrepreneur interested in networking or collaboration opportunities. Post-meeting interviews formed the main source of data, with both observation at the meeting and reflective journaling used to inform interview questions.

4.2.1 Early interactions

Initial, open coding included a return to Cycle 1 data in a systematic process of constant comparison and questioning, as the text was read and reread line-by line, forcing the author to repeatedly interact with the data. This approach was helpful in the early identification of emergent links or patterns between processes in the data and the conditions under which they

occur. As refining and grouping of codes progressed, a clear association emerged between the psychosocial forces and factors impacting interaction in a positive and negative way and the environmental context of those interactions. 'Drivers' were identified that internally motivate or compel participants to interact, and 'inhibitors' which block this activity. 'Facilitators', which included external circumstances and environments, were noted to support, enable or improve the dynamic processes underlying those interactions, while 'constrainers' limit them. In addition, it became clear that these forces and factors could be considered at both the relational (or group) level, taking the form of person-to-person, person-to-environment or person-to artefact form, and the individual actor level, describing the processes stimulated and generated by an individual's innate feelings and responses.

4.2.1.1 Psychosocial forces: drivers and inhibitors

<u>Drivers</u>

Individual: feelings of isolation and relational distance from the wider business community, particularly amongst early stage start-ups, were considered a driving force in participants actively seeking out opportunities to interact and collaborate. Participants described how conversations with other entrepreneurs who were also 'juggling multiple plates' and coping with similar concerns, for example, "*awake at night wondering if I will be able to pay the mortgage next month"* (Cycle 2, Participant 8), were actually a positive, worthwhile interaction that encouraged conversation, engagement and relationship-building, despite the negative content of such interactions. Thus the subcategory 'seeking' (41 codes across 14 interviews) was created to group codes related to individuals seeking out empathy, understanding and mentorship:

> *"Those informal chats with people who were in the trenches as well* ((smiles))*, you're kind of going… it's nearly more of a mental health thing, you know, it's going 'It's ok, we're all mad to do this, we know. And you're doing it and I'm doing it and we're all having the same problems'.... it was more an arms around each other and going 'it's ok'* ((laughs))*. And just to get you through that…"* (Cycle 2, Participant 1)

Relational: when discussing the interactions that led to the creation of new relationships beyond a participant's existing network, there was evidence that participants valued the 'connectivity' (47 references across 18 interviews) that enabled strategic linking at in-person events, such as purposely seeking out a new contact and sharing business cards. However

participants also described accidental or coincidental meetings with a person which they later considered fortuitous, with chance encounters at informal, social events considered a serendipitous precursor to collaboration and hence a motivator to attend:

> *"That chat afterwards would often have turned to projects that people are working on and, yeah, I have no doubt that if someone had hit a brick wall with something, they would bring it up with certain people they knew at the tech meetup who might have a solution. There was such a mixture of tech people there…"* (Cycle 2, Participant 7)

Acquiring information, professional advice, such as how to access funding or services, and particularly the tacit knowledge gained through experience was also found to drive interaction and create a foundation for future collaboration (21 references across 11 interviews). Participants who felt that previous experience of strategic networking had helped them solve a problem, or fostered open innovation, were more likely to seek out opportunity for further engagement in order to meet potential collaborators, generate new ideas, gain access to knowledge and expertise or bridge gaps in their own competencies.

Inhibitors

Individual: recurring feelings of exclusion and 'otherness' contributed to strong expressions of alienation (40 references across 17 interviews) or 'outsider status', with early stage start-ups often labelling themselves as a 'newcomer' who felt isolated from, and not an integral part of, the broader business community. This isolation was acknowledged to be partially self-enforced, as a result of start-ups being overly-focused on the success of their business and not having the time and/ or self-confidence to network and build professional relationships. However there was also apprehension that institutional leaders or business groups overlooked smaller start-ups and instead focused their resources on High Potential Start-up (HPSUs) often discounting or excluding smaller start-ups from networking events and initiatives:

> *"The [redacted] is for established businesses, they're all over the big names. Maybe these events aren't aimed at small tech start-ups, I don't know* (0.2) ((shakes head)). *I don't think the tech guys see a lot of value in them..."* (Cycle 2, Participant 3)

This sense of isolation and exclusion was compounded by feelings of being overlooked and left out, with suspicions that interactions and relationships were likely happening 'elsewhere' which participants were not aware of, or invited to, because they lacked the proximity of being co-located in an innovation hub, or were not in possession of the tacit or local, tribal knowledge that might give them access to a network or community of peers:

> *"I'm sure they're meeting for cups of coffee and maybe the pints on the Friday night and the Whatsapp group is probably there. So they have that opportunity to learn from each other. That's what other start-ups are missing, that chatting in a relaxed, informal way. Just generally supporting each other…"* (Cycle 2, Participant 11)

Participant perceptions of their own 'otherness' negatively impacted efforts to interact within the community by causing them to 'self label' as an outsider, or diffident in nature, and 'shield' themselves by not attending networking events:

> *"I've gone to formal talks, formal dinners and, unless you're the business person* ((sighs, grimaces, shakes head)) *I can think of nothing worse for my evening. We're nerds, we like somebody to just come in, slide the dinner under the door ((*laughs)). *We're not outgoing people as a bunch…* (Cycle 2, Participant 2)

Relational: the strongest theme emerging from the data here was strong negative attitudes towards institutionally-led, hierarchically-organised networking and business community-building events and initiatives. Several instances were noted of what Charmaz (2014) refers to as 'waving the red flag', with participants stating that they never attend such events. This was considered a signal to look closer at the response. On further questioning, it transpired that this was a means of expressing a strong negative emotion towards these type of curated events, with participants often feeling compelled (14 references across 11 interviews) to attend and network out of a sense of obligation to their own company or institutional organisations from whom they had received funding, despite feeling uncomfortable and not finding significant value in attending. Hence, rather than being considered a factual statement of non-attendance at formal events, this strong response instead gave a clue regarding the value and meaning attached to attending formal, structured events.

> *"I'm allergic to those business-after-hours…people standing around the Bank of Ireland for two hours with a cold cup of tea in their hand, handing out business cards. It's too formal, the way people do business has changed…"* (Cycle 2, Participant 5)

Accounts of feeling under pressure and overwhelmed by a perceived expectation that entrepreneurs need to constantly develop their network suggest interaction and engagement can be a chore to entrepreneurs:

> *"It has to happen organically, these things can't be forced, people want honesty, trust, real things. Because otherwise it's just seen as business bullshit. Nobody has time for that. And they're going to cringe* ((grimaces)) *'please don't make me do that'. I'm standing with my pull-up sign behind me and I just want to go home…"* (Cycle 2, Participant 8)

An outsider mindset again emerged with strong concerns that such events are held to satisfy bureaucratic requirements ('box-ticking', 13 references across 9 interviews) or as a public relations effort, with mistrust generated when participants interacted with individuals who, they felt, strategically attended events to 'showboat' their own success and to capture and 'broadcast' their encounters on social media (15 references across 8 interviews):

> *"They're there to get a picture for their LinkedIn or Twitter, to show that they're part of the gang, but nothing is really being achieved. They're ticking boxes, and when they leave they don't remember half of what people said to them…"* (Cycle 2, Participant 4)

Rather than being a positive force, a perception that institutional organisations only invite 'success stories', ie experienced entrepreneurs whose business operations have been commercially successful, to speak at community-building events in order to 'protect' start-ups from 'failure stories' created mistrust (16 references across 14 interviews). This compounded a suspicion that the institutional organisations who organise such events do not fully understand the needs or experiences of struggling entrepreneurs. Instead of suppressing 'failure' stories, participants expressed the view that honesty regarding such experiences would encourage engagement:

> *"Formal presentations from people who are* ((laughs)) ((gestures inverted commas with hands)) *'re-remembering or rewriting' how they got there to sound like they had…*((laughs)) *'we had this thing and we went for it and we stuck to our guns and we never deviated…' because I call > bullshit<. Irish people as well just have our sensors up. So those things are of no value, they're actually nothing or they're a negative for you because you're gonna go god ((*grimaces*)), it's such a struggle and they have it and why don't we?..."* (Cycle 2, Participant 7) (> < indicates that that the pace of speech has quickened)

4.2.1.2 Contextual conditions: facilitators and constrainers

<u>Facilitators</u>

Individual: a relatability amongst start-ups associated with informal interactions, characterised as being 'all in this together', was considered a powerful facilitator that encouraged feelings of wellbeing and reassurance, the building of trust and development of the solid professional relationships on which future collaborations could be built. Participants placed particular value on sharing honest and forthright stories, experiences, frustrations and vulnerabilities with other entrepreneurs in one-to-one interactions (38 references across 18 interviews), with the view

that honest sharing and discussion of personal negative experiences was especially formative in creating the trust necessary to build relationships, and acknowledgement that failure is an integral part of the start-up life:

> *"It's really when you see other people admitting to the challenges that they're having, then you start to loosen up a bit yourself.."* (Cycle 2, Participant 12)

Relational: the bonding that took place through regular and sustained engagement, particularly at informal, socially-situated events, was identified as a key facilitator of the conditions conducive to nascent interactions (56 references across 18 interviews). Meeting and mingling in a casual, social setting after work hours and engaging in non-business-related activities, where there was no formal expectation or obligation to network or market their brand, was found to create an atmosphere that made participants feel more comfortable and at ease:

> *"I mean, there would be speakers but then there was a fair bit of hanging around and chatting. Leaving people to do their thing. That was the beauty of it. Nothing forced…"* (Cycle 2, Participant 4)

A sharp contrast was drawn between this type of casual engagement and the more formal engagement associated with institutionally-run events such as 'speed-networking', which were overwhelmingly considered contrived, not conducive to 'authentic' relationship-building and reminiscent of children being '*put into a room in school and told they have to play with the person beside them'* (Cycle 2, Participant 4)*:*

> *"I just think it's a brilliant idea to make connections over a night out. And that makes it a lot easier to get the Whatsapp group going, rather then meeting someone and having an awkward five minute conversation at a networking event…"* (Cycle 2, Participant 9)

Participants recalled past experiences of mingling, chatting and enjoying themselves far more at socially situated events and getting to know new people with whom they went on to form professional relationships after discovering common interests or passions outside their professional lives, such as liking the same type of music or both attending a recent concert (coded 'Resembling', 14 references across 9 interviews):

> *"We had a great time but it was also a really valuable night, the conversation flowed, ideas were generated and the follow-up on those ideas was so easy because we'd already had the craic with those people…"* (Cycle 2, Participant 7)

Constrainers

Individual: resource constraints – namely time and the membership costs of professional networking groups – emerged as a significant source of pressure, with a strong view that social events taking place outside work hours were preferable to networking events during the working day. Doubts regarding the value of innovation-focused events and initiatives led to a hesitancy to attend and lack of commitment towards engaging, with many admitting they regularly weighed up networking-building value versus the actual cost, in terms of money and time (20 references across 11 interviews):

> *"The [redacted] does organise events but you're not invited unless you're a member. For one thing, start-ups can't afford that membership costs, they have other things to be spending their money on, and trying to pay bills…"* (Cycle 2, Participant 7)

Relational: there was evidence that participants who had attended the Cycle 2 meeting with stakeholders were confused and uncertain about how the local government's planned smart city experimental facility under discussion at the meeting would benefit them, or the community. A perceived absence *"of direction or clear objectives"* (Cycle 2, Participant 1) from the institutional leaders regarding the facility resulted in apprehension or lack of interest amongst participants to become involved in future planning, with many stating they did not have time to spend engaging in lengthy conversations, or *"talking shops"* (Cycle 2, Participant 4). In post-meeting interviews, participants also expressed feelings of disillusionment with, and mistrust of, collaborative ventures previously instigated by institutional actors, stating that their ideas and opinions were not acted upon by institutional leaders, with little feedback as to why not:

> *"It sounds to me like they're making it up as they go along, they definitely haven't done their homework about what the tech startups actually need. Been there before, I haven't time for that…"* (Cycle 2, Participant 5)

This contributed to a polarisation between the start-up community and the institutional actors whose stated aim was to engage with and support entrepreneurship (24 references across 10 interviews). It raised the question whether hesitancy or mistrust might constrain the development of a co-operative relationship and shared vision between entrepreneurs and institutional leaders regarding the innovation initiatives planned for the micro city in the future.

The structured, engineered formality of conventional networking events typically organised by institutional actors was identified as a significant barrier to 'genuine' engagement and interaction (47 references across 16 interviews). Participants described how such events were a *"struggle"* in the way that they felt *"awkward", "contrived"*, were regularly attended by the same people who "*talk the same talk",* and lacked spontaneity:

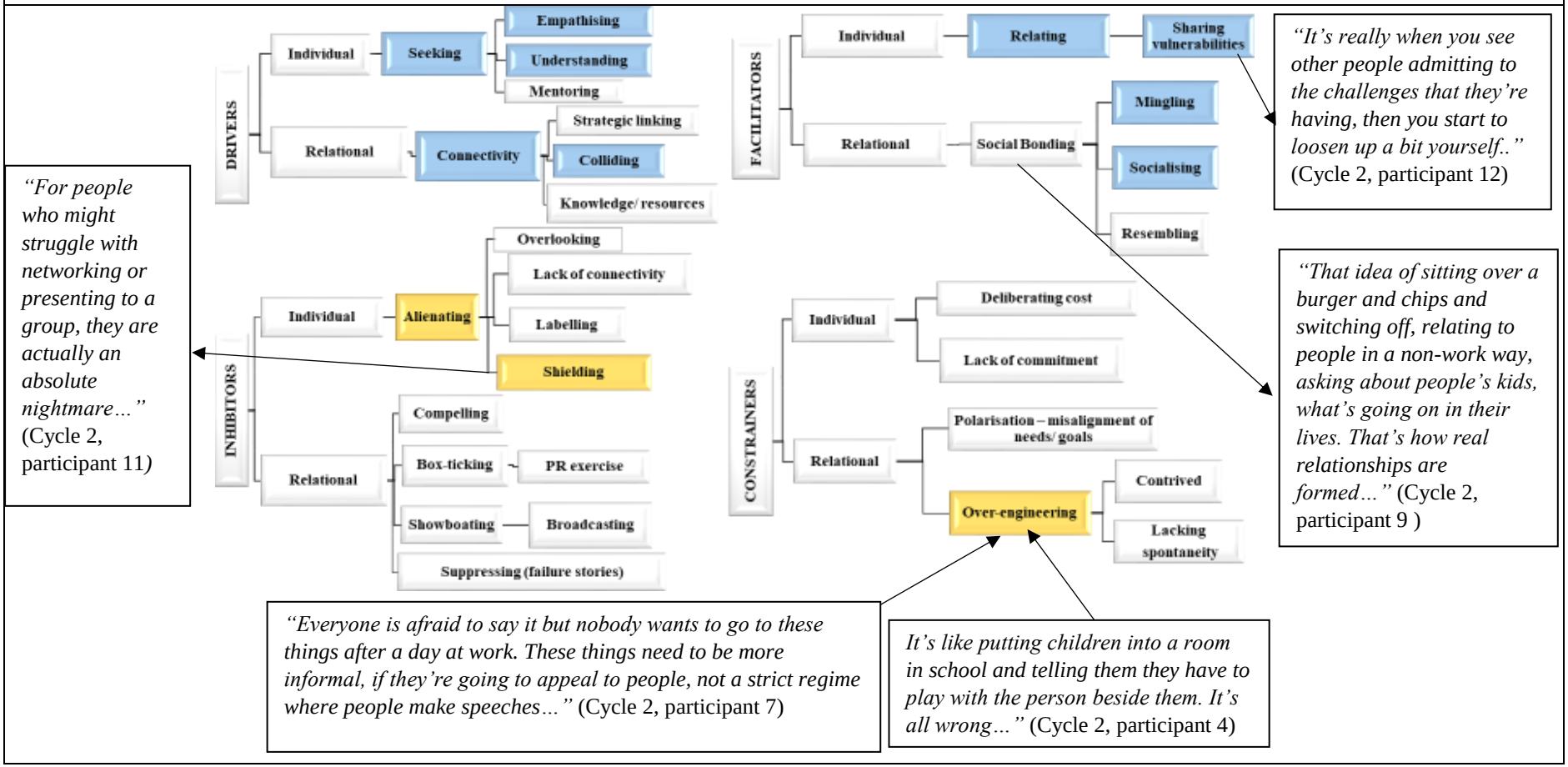
> *"I think what happens a lot in planning these things is the high-falooting ideas and really, beer, pizza, parking, decent tech and good coffee is all we want. It's like an Irish wedding* ((laughs)), *you give them an open bar, a good band and a good meal and people are happy…"* (Cycle 2, Participant 11)

4.2.2 An emerging research question

Cycles 1 and 2 sought to explore participant constructions of relationship initiation within their local business community. These narratives of lived experiences offered valuable insights into actor behaviour and revealed insights into perceptions regarding the mechanisms of relationship initiation, and processes affecting a culture of initiating new contacts. The key statement emerging from the data by the end of Cycle 2 was that, for collaborative networks to begin, it is necessary for nascent interactions to happen in an 'informal' way, ideally in a relaxed, social setting that offers opportunity to exchange psychosocial support with other entrepreneurs (Figure 13). This suggested that providing an environment in which *"conversation flows, ideas are generated and collaboration happens"* (Cycle 2, Participant 6), particularly for early stage and sole-trader start-ups who may be experiencing feelings of isolation and insecurity, could be beneficial in encouraging informal exchanges regarding shared challenges and new ideas.

Conversely, the findings at this point suggested that formal, institutionally-led community-building and networking events in structured settings can contribute to an outsider mindset amongst technological start-ups, with an emphasis on presenting 'success stories' actually reducing the confidence of struggling entrepreneurs, increasing feelings of inferiority and discouraging interaction and engagement to. The statement emerging from the data was interpreted by the author as a call to action. Based on this, the next AR intervention planned was the assembling of a group of volunteers from within the technological entrepreneurial community with a shared interested in organising informal, socially-situated tech meetups to connect people and ideas, where members of the community might discover commonalities and offer each other general support and advice based on their similar or shared experiences.

Figure 13 - Key statements emerging from Cycle 2 data



Source: created by author

4.3 Cycle 3 – informal interactions in a social setting

Having engaged with the research community and closely listened to their perspectives and needs during cycles 1 and 2, Cycle 3 (September 2022 to June 2023) involved the author taking an active role in helping to organise the monthly Waterford Tech Meetups. This intervention was supported by the research enterprise partner Waterford Council providing a venue for the meetups and sponsoring the refreshments served. Participants in this cycle comprised the organising group of the meetups, as well as attendees. Purposive sampling was used, based on membership of the meetup organising group and/ or attendance at meetups and at the bar after meetups, with ongoing interpretation of the data and identification of missing voices indicating who should be approached to participate. Sampling continued until new explanations stopped emerging from the data. Semi-structured interviews were the main source of data, with a total of 25 new participants taking part in these semi-structured interviews during Cycle 3. Observation and informal interviews at the meetup, at post meetup socialising in a local bar and reflective journaling, were used to supplement data, inform interview questions and provide context to the research.

4.3.1 Conceptual categories

Analysis at this point was characterised by coding, advanced memo-writing and sorting through constant comparison in order to generate and refine categories and conceptualise the data (Charmaz, 2006) (see Appendix DD). During focused coding, **six** key categories were developed to elucidate how social connections are initiated when unfamiliar actors enter a new situation and begin to form relationships: the **Social Interaction Space** (relating to the contextual environment, and atmosphere); **Behavioural Activity** associated with that activity**;** actor **Motivation** (including the antecedents to interactions)**; Resource exchange;** and the **Changes** that occurred that were integral to the identified **Subprocesses of Early Social Relationship Initiation.**

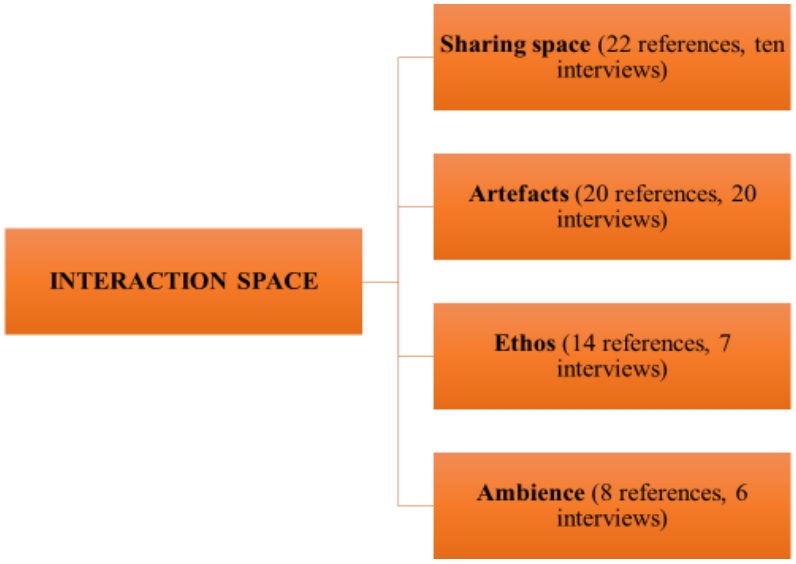
4.3.1.1 Social Interaction Space

Interaction opportunities in this study were wholly contingent upon spatial proximity in a social context that provided temporary occasions for individuals from diverse social and professional circles to meet and develop new ties, sharing knowledge, ideas and resources and identifying opportunities that could potentially facilitate collective entrepreneurship. The conceptual category ‘Social Interaction Space’ was created through the clustering of codes according to a

common theme that emerged from the data in relation to the properties underlying the sociality associated with interactions, and the comfort levels of participants in this social context. Specifically, this category was linked to how interactions were affected by the need to feel comfortable or secure within this contextual setting.

These phenomenon were sorted into the sub-categories of Sharing Space, Artefacts, Ethos, and Atmosphere (Figure 14).

Figure 14 - 'Social Interaction Space' subcategory



Source: created by author

Sharing space

The sub-category 'Sharing space' emerged through the grouping together of constructs in the data related to connections between the physical (social) setting of the meetups and interactions at the events, and how participants associated the social setting with what happened there. This was the most frequently occurring sub-category within the Social Interaction Space conceptual category. As will be discussed in greater detail in the next chapter, this weighting provides rich insights into the relative importance of the sociospatial aspects of sharing an informal, social space, and how this facilitates the sharing of social lives. As during cycles 1 and 2, participants regularly compared how relaxed they felt at informal, social events to feeling 'stifled' and 'under pressure' to actively network at formal events, describing the physical environment of the former in terms of being conducive to more 'natural' interactions with new, potential ties:

> *"You go to the dinners or the lunches and the tables are set out in circles. And you'd come in there and nobody is standing up having a chat. People just come in and sit down. And they mightn't be serving lunch or dinner for another fucking forty minutes,*

> *so you're there going 'what am I doing'. And it's forcing this really enclosed, non-organic way of having a conversation…"* (Cycle 3, Participant 12)

The tech meetups took place in a purpose-built medieval museum owned by Waterford Council, with the actual event situated in a garden room adjacent to a medieval chamber. Seating was chevron-style, featuring two columns of short, angled rows of removable chairs with an aisleway down the middle, focused towards a guest speaker and screen. Speakers regularly emerged from behind the barrier of the podium to interact during talks and discussions. This overlapping of speaker and social spaces continued during the interval, when refreshments were served within the meetup space, rather than moving to a foyer area. Not displacing attendees to a separate area for refreshments during the interval, but instead keeping them immersed in the event space, was seen to encourage interaction. This effect of venue and space was a recurring theme in the data, with participants attributing much of the informality and relaxed atmosphere of the events to the fact that the spaces occupied by guest speakers and attendees were less clearly delineated than at traditional, formal conferences.

> *"I think there is something that is very special about having a space that's not just purely focused on just the technical talks but having the time to have some food and have a drink and chat to people and mingle…"* (Cycle 3, Participant 10)

Similarly there was recognition amongst the meetup organisers that configuration of the venue contributed to increased interaction and the discovery of commonalities in the room:

> *"We find if people have to navigate around the room, like from the beer, to the pizza, to the toilets…that's three stations that people have to move around to and they will mingle as they go from one to the other…"* (Cycle 3, Participant 1)

Each meetup was followed by post-event socialising in a nearby bar, at which the organisers bought a drink for all who attended through sponsorship from a number of local technological companies. On average, 25% of those who attended the meetups also went to the bar afterwards every month. Of the participants who didn't, the majority said they were precluded from doing so due to family or work commitments. Relocating to the bar after the meetup provided an additional space for introductions and interactions:

> *"That's 10 minutes or so of people having to walk together to the pub and chat and mingle with people they might not otherwise get to talk to…"* (Cycle 3, Participant 2)

> *"I think everyone is feeling a little bit awkward when they don't know each other but you end up in this welcoming pub and you know everyone there wants to make an effort. And that really helps to build those connections…"* (Cycle 3, Participant 8)

Conversely, one of the bars used for post-event socialising was identified as not conducive to

forging new connections due to its layout, resulting in lack of participation, unengaged attendees and people feeling frustrated:

> *"The seating is a bit awkward* (0.2) *all those small, high tables really limits people mingling. People tend to sit in the order they arrive and stay put because there's no space to move around…"* (Cycle 3, Participant 3)

Regularly occupying a familiar space contributed to a feeling of being 'at home' or 'at ease' amongst participants, while the collective experience of being part of an audience of familiar faces also fostered an increased sense of belonging within the community over time. This was reflected in the use of language such as '*taking over' the venue, 'having our own space'* and indications that opportunities for speaker/ attendee interaction being a natural part of the event were valued by participants.

Artefacts

Material artefacts, namely the complementary food and drinks served during meetup intervals, were found to be both a motivator for attending but also a tool or artefact that fostered social interaction between participants. During meetup observation, the author continually noted in her field journal how converging at refreshment tables during the event intervals was the foundation for regular introductions and mingling. Over time, as connections formed through repeated meetings, it was noted how participants began to show up over half an hour early for meetups and were reluctant to take their seats after the interval, instead opting to stay close to the refreshments table, socialising. The author subsequently raised this with participants during interviews:

> *"I like to arrive early so I can grab a drink beforehand and have the chats, catch up with people I might not have been since the last one…"* (Cycle 3, Participant 15)

> *"Last month the food at the meetups was nearly longer than the talks, people don't want to sit back down for the talks, they were more into catching up over a beer…"* (Cycle 3, Participant 4)

The practice of the organisers inviting attendees to take home unconsumed refreshments was also found to contribute to a sense of belonging amongst the group. One AR micro intervention which yielded interesting results was the changing of the type of food available at the events. The refreshments originally consisted of buffet-style finger food platters of sandwiches, chicken pieces and sausages. While this food was enjoyed by attendees, one participant did jokingly describe it as *'funeral food'*, likening it to the type of food traditionally served at funeral receptions. Over a number of months, attendees informally made suggestions to the

organisers that pizza would be a welcome alternative. This was taken on board and hot pizza was delivered to a subsequent meetup. The author noted the impact of this intervention in her field journal from that meetup:

> 15/02/2023 - 8.10pm: *Arrival and serving of pizza created a buzz, lots more people chatting to strangers at the refreshment table about it and mucking in, moving up and down to find their favourite topping, rather than queuing with a plate. People not shy to take a slice. No food left over, ran out of waters and soft drinks. People came back looking for more pizza at end of night. People reluctant to sit back down after the interval, stood chatting and mingling. Donal had to walk halfway down the floor with the lapel mic and usher people back into their seats.*

The author subsequently asked participants how they felt about pizza being served at the meetups:

> *"The people seemed to mingle more. There was more talking to people. I mean, I'm not a psychologist. But people talked more over pizza, and about pizza. I don't know. Maybe it's just the tech fascination with having pizzas, you know, Amazon are all about their two pizza teams…"* (Cycle 3, Participant 2)

Thus discussions about the food itself, such as moving up and down a table and chatting about pizza toppings, ensured what was shared extended beyond the food to space, experiences and emotions. This suggested that the type of consumable served impacted the interactions at events and the initiation of conversations and finding of 'common ground', with the communal exercise of sharing pizza with others encouraging face-to-face interaction:

> *"You get sandwiches at everything, everywhere… at work, if we're having meetings, at conferences, we always have tea, coffee and sandwiches and it's boring* ((laughs)). *And then people have another sandwich for their lunch* ((laughs)) *Whereas when we had pizza, people were interested in the food, not just taking it because it was there. And they were excited about it, and started chatting to each other about it. So straight away you have strangers talking to each other, moving around more, seeing what different types of pizza were there…"* (Cycle 3, Participant 7)

> *"You know, when people are nervous, usually we want something in our hands. Whether it's tea, some sandwich or some pizza. If you are shy, you will easily find something to say about the food so if the food is more interesting, it makes it easier* ((smiles)). *So the pizza helps people to interact. It's that tradition of sharing food, sharing something together, breaking bread together. Or breaking pizza* ((laughs))…" (Cycle 3, Participant 14)

Hence the act of sharing food, in this case pizza, acted as an important social catalyst for interactions.

Ethos

A number of features or properties associated with dress code and social conventions within the interaction space were found to foster openness and impact attitudes towards interacting. When sorting codes, it became clear that these features were associated with an unwritten code of conduct or prevailing norms that guided the behaviour of attendees and organisers and consequently set the tone and style of the event. Though not as prevalent as 'Sharing space' or 'Artefacts', there was nonetheless a recurring pattern of these references, which prompted the creation of the sub-category 'Ethos'.

The casual dress code of attendees and speakers at tech meetup-ups was found to counteract concerns about feeling 'out of place' or intimidated and hence a casual dress code was found to support inclusivity in this context:

> *"Do you know what I like, it's not a work thing so I don't feel I have to wear work clothes. But it's not a dressy up night out, either. So if I can't be arsed making an effort with clothes or makeup, I don't feel under pressure* ((laughs))…" (Cycle 3, Participant 6).

The perception that the meetups were organised and run by a collective of volunteers, rather than controlled by private firms or institutions, was also found to impact attitudes towards attending. Many participants spoke in terms of 'one company taking over', or concerns about the meetup being dependent on institutions:

> *"You don't have to be running hand to mouth to companies, month to month, trying to figure out how are we gonna pay for drinks, how are we gonna pay for food and all that kind of stuff..."* (Cycle 3, Participant 9)

This sense that it was the 'community' rather than an institution or company who organised the meetups created a sense of ownership amongst participants that acted as a motivator to contribute their time and effort.

Ambience

The sub-category 'Ambience' arose from participants references to the 'friendly' and 'welcoming' atmosphere and character of the meetups, and how this set the tone and mood for a relaxed experience, creating enjoyable conditions conducive to interaction and conversation. This was the least prevalent sub-category but its recurrence was nonetheless distinctive and

considered relevant, particularly when taken in the context of the meaning ascribed to the 'Ambience'.

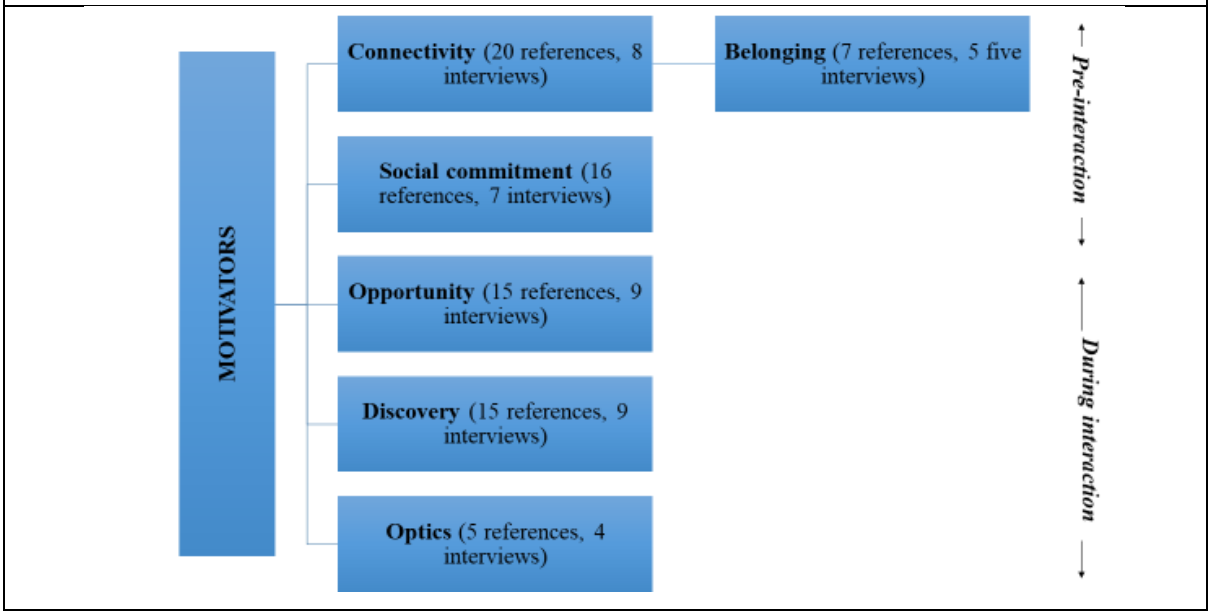
Feelings of inclusivity were heightened by efforts by other attendees, including the author, to be hospitable and chat to people who might not know anyone else there:

> *"What you will notice is that people seem far more inclined to just walk up to someone and say 'Hello'. It's a really friendly atmosphere, everyone is there because they want to mingle, they want to make friends almost. It's not forced…*" (Cycle 3, Participant 16)

4.3.1.2 Motivators

The factors inspiring, encouraging and stimulating actors to engage in behavioural activity to create new connections and forge ties were grouped as 'Motivators' though, during focused coding, it became apparent that some of these motivators were most prominent pre-interaction, while others became more apparent once interactions had commenced (Figure 15).

Figure 15 - 'Motivators' subcategory



Source: created by author

Connectivity

A desire to improve connectivity and increase opportunity for face-to-face interactions within the local tech community emerged as the most powerful motivator to attend tech meetups. This was closely linked to the contextual setting, with participants particularly valuing having a physical space where they could regularly chat informally and face-to-face about challenges they were facing:

> *"I'm fully remote. The people that I work with are based up in Dublin. I don't get to go for a drink with those people being someone that's fully remote. Having somewhere where I can go hang out with other people who work in a similar space and be able to talk about whatever headaches I'm having, coding or whatever, has been really valuable…"* (Cycle 3, Participant 2)

This connectivity also extended to maintaining existing relationships, with descriptions of how the regular monthly meeting was a useful, set date in the diary through which they could stay in contact and 'catch up' with others:

> *"It's just to talk to other people in that space. So much tech is done remotely now and you wouldn't have time to read everything you see online, or everything that people you know are sharing. It's nice to just be in that space and chat with other people about what they are up to, what they might have discovered that you haven't heard about…"* (Cycle 3, Participant 14)

Belonging

Closely related but distinct to a desire for connectivity amongst participants was wanting to feel included by, or belonging to, the local tech community, and eliminate feelings of isolation. While this child node was not identified as as strong a motivator as 'connectivity', it was nonetheless an important element that captured participants wanting to be or become part of the community, rather than operating in isolation. Belonging was seen to differ from connectivity in that participants wished to feel included, or belong to, whereas the act of connecting was more intransitive, and referred to participants wish to having the ability to connect with others, if they wished or needed to do so. Both organisers and attendees described how they 'loved being a part of the community' and, from an early stage in data collection, there was regular use of collective pronouns that referred to the nascent group as a unit:

> *"It's* [the bar] *not a big place. We usually fill out the bar any time we're there…"* (Cycle 3, Participant 8)

Social commitment

Amongst the organisers, there was a strong sense of being motivated by a desire to support the local tech community in the broad sense, and also help individuals on a one-to-one basis as relationships developed:

> *"A lot of lads who are fresh out of WIT, fresh out of college and are in there bushy eyed* ((smiles)), *always interested in talking and asking 'what do you do?' They need a way of meeting each other. And that's what the meetup does, it gives the community a way of networking.."* (Cycle 3, Participant 1)

> *"The like of ourselves, organisers and volunteers* ((points to self and interviewer)) *making sure to do a little bit of outreach for people who seem like they're a little bit lost and making sure that we get them chatting and we find other people around who they can potentially make a connection with as well…"* (Cycle 3, Participant 3)

Amongst attendees, this sense of social responsibility towards the community translated into concern about the welfare of individuals, and a search for ways to support the broader group by creating a more inclusive environment, thus linking being motivated by social commitment with the comfort experienced at the events as a result of a warm, friendly and welcoming ambience. The author frequently noted in her field journal how meetup attendees readily helped out when asked to with operational issues, such as offering their own devices to help connect laptops to sound systems, or stacking chairs:

> *"I'll just talk to people who are standing about that look a little bit shy or lonely* ((smiles)) *to try and get them engaged…"* (Cycle 3, Participant 18)

This 'social commitment' was the second most prevalent node.

Opportunity

Participants saw initiating new relationships within the local 'tech scene' as an important means of searching for opportunities or identifying people with whom they might work on new projects:

> *"You learn to know who to ask if you have a problem or need to get something done…"* (Cycle 3, Participant 7)

The author's field notes also captured occasions where participants were observed to seek or seize an opportunity to strategically meet or converse with an individual who might provide them with access to valuable resources:

13/12/2022 - 10.10pm: [redacted] [guest speaker, well known and highly successful technological entrepreneur] *came along to the pub afterwards. There was a 'rush' to sit with him in the pub. Less mingling as a result.*

The author subsequently raised this in interviews with participants:

> *"Like [redacted], he's done so much and they knew that. He was like a rock star the night he spoke* ((laughs)), *everyone was trying to sit next to him afterwards in the pub* ((laughs))…" (Cycle 3, Participant 15)

Discovery

There were repeated occurrences of participants describing how they were driven to attend and interact at meetups in the hope of discovering new knowledge, happenings, trends and perspectives in the tech industry:

> *"I think with tech you will often find that we're naturally curious about all aspects of tech, whether it's our area or not. There is definitely an appetite to stay up to date on the trends, on what's new, and the meetups are a great way to do that because of the diversity of people attending, you will always hear about new ideas coming through, or new ways of doing things. Particularly when people start engaging in the discussions afterwards, you can often get a fresh perspective on things you're working on from listening to the inputs…"* (Cycle 3, Participant 17).

Optics

Finally, there were a number of instances of participants referencing how they were motivated to attend the meetups as it enhanced their reputation within the community or presented them in a positive light to employers or institutional leaders who they wished to impress, resulting in the creation of the sub-category 'Optics'. This constituted the smallest sub-category within the conceptual category Motivators.

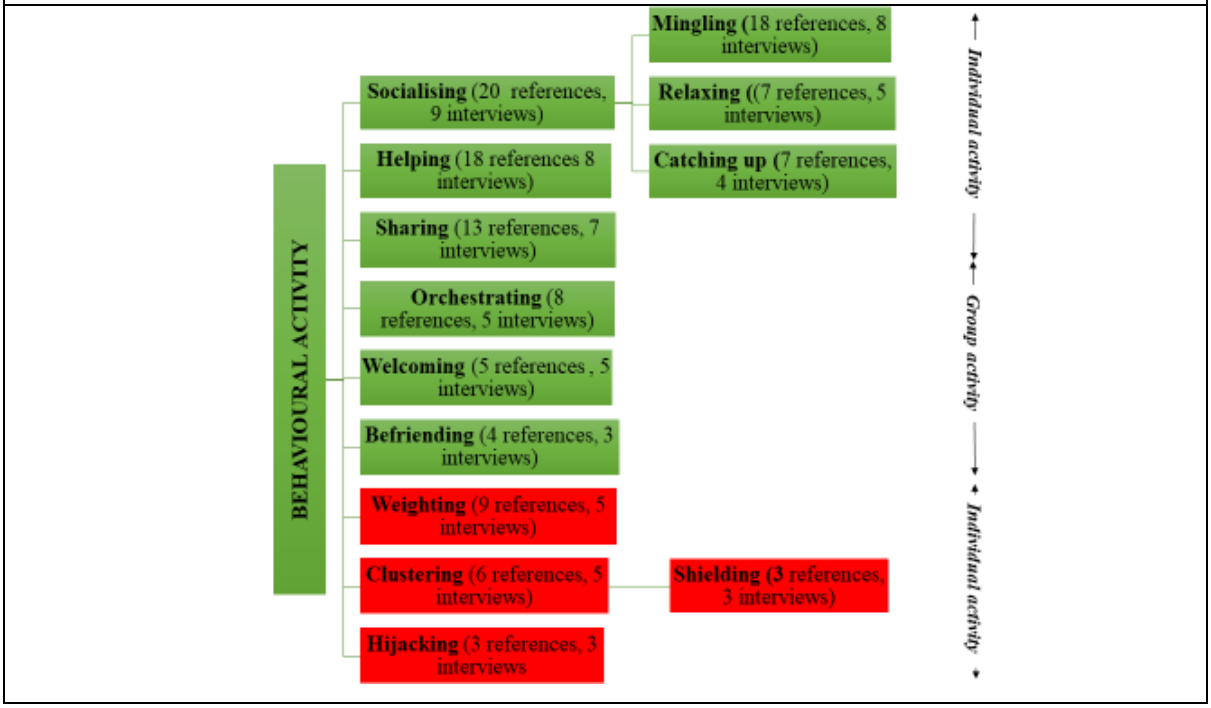
> *"My company is one of the sponsors, there'll be a few brownie points in it if I'm seen there* ((grins))…" (Cycle 3, Participant 10).

4.3.1.3 Behavioural Activity

Simply providing a suitable social environment and being motivated to interact alone were insufficient for new connections to be made. Closely intertwined with the comfort of the contextual setting in affecting relationship initiation was the actors being willing to, and capable of, engaging in positive behavioural activity that would allow them to take advantage of those opportunities to initiate new encounters and forge connections. This behavioural activity was organised into 'Orchestrating', Socialising', 'Sharing', 'Befriending' and 'Helping' (Figure 16, coloured green); or encountering or engaging in behaviour which

negatively impacted the forging of new social bonds, organised as 'Clustering', 'Hijacking' and 'Weighting' (Figure 16, coloured red).

Figure 16 - 'Behavioural activity' subcategory



Source: created by author

Socialising

There was strong evidence of the deepening of nascent relationships through the socialising that occurred at and after meetups, as well as an appreciation of the personal benefits of the social aspect of interactions amongst participants, which contributed to feelings of relatedness to the local tech community. The sub-category 'socialising', described as capturing comments that referenced socialising as an important aspect of social bond formation, was the most prevalent node within this conceptual category. Over time, the author observed participants begin to describe how the socialising element of the meetups – such as the refreshments during the interval or going to a bar after the event – were of more value to them than the subject matter of the meetups themselves:

> *"Sometimes I think the talks should be shorter and the discussion or break times longer. I mean, the talks are great, and some of them are <u>really</u> interesting. But you always get the sense that people are really there for the chat. I mean, people come along regardless of whether it's a talk in their area or not. I don't think the talk is the main thing that draws them there. I think it's that chat. So maybe if that was longer* (0.3) ((smiles))"… (Cycle 3, Participant 4)

This socialising was not linked by participants to the consumption of alcohol, but instead with the opportunity to mingle and chat with peers in an informal atmosphere. At the post-meetup social event in the bar, the author consistently noted how the majority of those present drank non-alcoholic beverages. Field observations at these gatherings recorded how conversations amongst these new social ties tended to focus on the 'general' rather than the 'specific' when it came to tech, and often centred on the social isolation of working remotely, as well as chatting about new developments and comparing these to, and reminiscing about, the early days of tech. Participants described how, during socialising, they felt relaxed enough to approach people they recognised but did not know and chat to them – something many said they would never do in a more formal, professional context, suggesting socialising flattened hierarchies traditionally found in work environments:

> *"You'd talk to a few people afterwards in* [redacted] ((name of bar)). *You might not be talking to them on Facebook or whatever but you'd see a few familiar faces down there and you'd go up and have a casual chat with them alright…* (Cycle 3, Participant 3).

Within the sub-category 'Socialising', child nodes of 'Mingling', 'Relaxing' and 'Catching Up' were created to tease out the links between, and identify the weighting of, these three aspects of 'Socialising' that emerged from the data.

Mingling: participants repeatedly welcomed how the physical act of mingling led to new introductions and connections. The provision of refreshments was found to encourage participants to move freely around the room during the interval, with the organisers describing how they strategically located refreshments within the meetup venue, and organised a post-meetup socialising event in a bar within walking distance, in order to encourage that mingling:

> *"If you only talked to the people who you were sitting with at the meetup, you are most likely going to walk to the bar with someone different. I actually love that everyone walks down together, you don't know who you're going to run in to, who you will end up sitting with…"* (Cycle 3, Participant 15)

Unexpected and random 'collisions' that occurred while mingling were regularly described as serendipitous, often sparking the exchange of interesting ideas:

> *"If you were to put a percentage value on it, the topics, the talks, 20% of the value is what I get from that. I get about 80% of the value from the 'hallway track'. And the hallway track is literally meeting people in the hallway and having a chat…that's where the big value add is from a connections perspective…"* (Cycle 3, Participant 1)

Relaxing: a less recurring but nonetheless notable theme to emerge from the data was the

suggestion that people 'loosened up' or relaxed more in an informal, social setting, which led to people being more authentic in their interactions. Participants repeatedly noted how they found people to be '*more friendly than professional'* in their behaviour, and how help or advice offered was genuine, when people were relaxed. The informal dress code was particularly highlighted as reducing stress, helping people to feel more at ease and confidant, more authentic to themselves, and not thinking they were under pressure to perform or conform in any way:

> *"Every company has their more formal events, they'll have their tech summits, they'll have their customers coming in and we're putting on the show and throwing the suit on us. People don't <u>want</u> that. They want to turn up in a hoodie, pair of shorts and not have anyone comment, just sit down and have a chat…"* (Cycle 3, Participant 15)

Catching up: as participants came to regularly attend meetups, they began to view their interactions with other attendees as an important means of catching up on previous conversations. Several participants described how they were encouraged to forge bonds with people they had met because they recalled previous conversations about either professional projects they were working on, or personal stories they had swapped:

> *"I think it's the follow-up (0.2) and I don't mean that work follow-up, like when you're working on a project or something. But when people have met one month and chatted, they're keen to chat again, to talk some more about things, to catch up, to see how people are getting on, you know?..."* (Cycle 3, Participant 17)

<u>Helping</u>

A strong trend emerged regarding how joint tasks at the actual meetups promoted a sense of shared responsibility that increased attachment to the group as a unit and led to the emergence of nascent ties within the group. These included physically helping to stack chairs, carry drinks, assist speakers with set-up or other activity focused on helping to ensure the meetup ran smoothly. While this activity created the conditions for mingling and provided a reason to chat, working together to support the success of the event also helped participants attribute positive feelings or emotions to their interactions, fostering a sense of camaraderie and creating a collaborative atmosphere:

> *"I like to be able to do something that gives back to the community as well, and that's just a small way of doing it…"* (Cycle 3, Participant 12)

This was also true of the interactions amongst the organisers via the Whatsapp group before and during events, with individuals taking on implementer roles to ensure tasks were accomplished contributing to a growing sense of community and camaraderie amongst the group:

> *"Look, it's not a lot of my time to do the organising. Now if people started falling back and more work landed on me, I think that could be become problematic. But I think that other people would also step up and help out…"* (Cycle 3, Participant 8)

Over time, it became clear that this camaraderie and person-to-person ties promoted the growth of affective group ties, inducing co-operation during dilemmas affecting the success of the meetup, for example members of the group working together to replace a faulty sound system which had malfunctioned an hour before a meetup was due to start. Hence social commitment to ensuring the smooth running of the event through helping with joint tasks emerged as an important mechanism for affective group ties, contributing to participants more readily defining themselves as members of the community. This potentially has implications for the stability and sustainability of the group beyond this research study.

Sharing

The physical act of sharing, such as speakers sharing slides with attendees, sharing advice or attendees sharing a pizza during the interval, was repeatedly identified by participants as an activity that encouraged engagement and nascent tie formation:

> *"There is a willingness to share, I've seen some of the more experienced guys be really kind to the students, in terms of giving them a bit of guidance, a bit of a steer about their careers, that kind of thing..."* (Cycle 3, Participant 6)

Aside from the value placed on building collective knowledge and creating a learning culture, physically sharing was seen to provide a way for individuals to relate to each other, creating a meaningful communal experience and feel-good factor that increased camaraderie and built a sense of community.

Orchestrating

Participants recurrently spoke in terms of how they had a better experience when they felt genuinely 'welcome' at meetups, with organisers mirroring this language when describing the targeted effort made to ensure a 'warm welcome' for attendees when they arrived and during the event. From the first meetup, the author observed many attendees who went to the event alone, without knowing anyone and, over time, became part of a fluid group who regularly met up and sat together. There were repeated instances of organisers attempting to orchestrate introductions and interactions by introducing unfamiliar others, in order to make attendees feel welcome. During interviews, members of the organising group were asked about this activity. A reluctance emerged to initiate or co-ordinate interactions in a more professional, work

setting, due to formal hierarchies, and particularly when the participant did not feel they held a high enough ranking in the organisation. In the non-hierarchical, informal setting of the meetups, however, there was a realisation amongst participants that they felt more comfortable introducing and linking people, suggesting greater brokerage potential at informal events for individuals with less career experience, or lower ranking individuals in a firm. Hence willingness and ability to exploit such opportunities to initiate new encounters increased at informal, socialising events, when typical hierarchies were broken down or absent. Participants often attributed their proactivity in orchestrating interactions to a recognition that some attendees might be less socially capable of introducing themselves, suggesting a social contract to support others permeated the ethos of the meetups:

> *"A lot of people I know in tech don't always communicate very well or mix in, chat to people. They have their computer, they can work, earn their living, but conversation is not always their strong point. With the meetup, they can sit and don't have to say anything and still be a part of things. I'd keep an eye out for them, see can I say hello, introduce them to some people I know…"* (Cycle 3, Participant 7)

Welcoming

While 'welcoming' was closely associated with the 'ambience' described in the 'interaction space' conceptual category, statements that related to activity described as making individuals feel welcome in this study were also organised together when referring to behaviour associated with greeting or engaging with someone in a warm and hospitable manner that eased the initiation of interactions:

> *"There's an ex colleague of mine and maybe he is shy or has some kind of autism, I'm not sure, but his communication wouldn't be great. But he still comes to the meetup. And he will go to the pub afterwards, he sits with people, maybe he will only say a few sentences. Maybe it's enough for him to do that. But he keeps coming back. I say hello to him. 'How are you doing?'"* (Cycle 3, Participant 7)

Befriending

Closely linked with 'welcoming' was the sub-category 'befriending' which described interactions associated with individuals seeking or finding friendship. These encounters were portrayed as non-transactional, and linked by participants to the 'friendly' ambience of the event and depicted as instances of 'making friends' with people:

"I think my favourite thing about the evenings is that we can gather together and talk and chat and share things and find new friends…." (Cycle 3, Participant 15)

Weighting

The behavioural activities found to have adverse affects that inhibited relationship initiation and were associated with negative emotional states were usually linked to historic experiences of networking activity. Of these, the most prevalent sub-category was 'Weighting', which described participants weighing up the benefits of attending all forms of networking events in terms of the potential resources they could acquire versus the cost they associated with the event, such as the time spent at it. In particular, many described finding little value in events where mingling was limited, and so the opportunity to acquire new connections was constrained:

"I turned up to it and, you know, got to talk to two people – the person on the left and the person on the right of me. It's over, I'm looking at my watch thinking 'I need to get back now', I have a ten o clock call or whatever…" (Cycle 3, Participant 1)

Clustering

Physical proximity was seen to promote proximity-triggered encounters that often led to making initial social connections:

"I'd usually sit with my friend but I'd chat to everyone around me. Especially during the Q&A, people tend to start chatting a little bit more, like if I asked a question or joined in a discussion, the next thing someone sitting close to me might chat to me a bit more about what I said…" (Cycle 3, Participant 16)

However there were numerous descriptions of participants staying physically close to, and only interacting with, people they already knew at meetups, prompting the creation of the code 'clustering' to describe this potentially inhibitive behaviour:

"During the talks, I tend to sit with the other 'regulars'…" (Cycle 3, Participant 13)

Shielding

Prior experience at networking events impacted willingness to pursue opportunities to form new ties, with participants describing instances of feeling overwhelmed at formal networking events, or '*hating feeling like I have to talk to people'* (Cycle 3, Participant 13). Members of the organising group particularly noticed how new attendees might feel like an outsider and

engage in behaviour that inhibited interactions, which was coded as 'Shielding' themselves from encounters which might cause stress or anxiety, or only sitting with people they know:

> *"I often find that you end up beelining it for people you know and standing with them…I'm not sure if it's catching up or I just feel more secure sticking with the people I know* ((smiles))…" (Cycle 3, Participant 9)

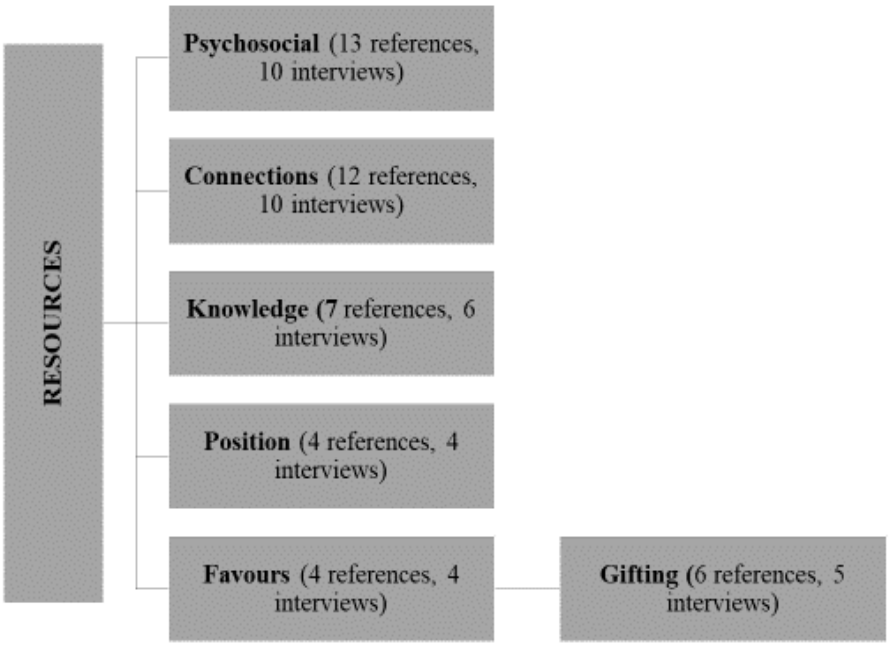
Hijacking

There were descriptions of sponsoring companies or institutions attempting to 'take over' or control networking initiatives, with members of the tech meetup organising committee particularly apprehensive about institutional involvement in the events and the impact this might have on atmosphere and attendance. Participants described this in terms of events being 'hijacked' or 'commandeered' to meet the agendas of institutions, suggesting apprehension about losing control, and the presence of a 'them' and 'us' mindset.

4.3.1.4 Resource exchange

Analysis found that nascent bonds which originated with expressive or affective elements in the social context of this study, rather than those typically centred on instrumental, work-related elements, created motivation and opportunity for the transmission of a greater variety of resources at an earlier stage and greater flexibility in the transmission of resources to serve a variety of purposes. The grouping of references in this conceptual category into 'Psychosocial Support', 'Connections, 'Knowledge', 'Position' and 'Favours' (Figure 17) suggests that the social relationships which emerged during the study provided access to multiple types of resources, and that the informal, social nature of interactions increased ability to tap into resources and pass them along the social connections of the meetup community quickly.

Figure 17 - 'Resource exchange' subcategory



Source: created by author

Psychosocial

There were early signs of resources that addressed the psychological and social needs of individuals flowing through emerging social bonds, such as participants having fun at events or receiving words of encouragement regarding projects they were working on. What was particularly notable was how value was placed on being able to access this type of support by participants. Over time, it became evident that this transfer of emotional support contributed to group cohesion and perceptions of a community developing:

> *"Waterford is a relatively small pond but, with more and more people remote working, you're more likely these days to find people here with niche expertise. And there is a willingness to share, I've seen some of the more experienced guys be really kind to the students…"* (Cycle 3, Participant 6)

There was evidence of participants both offering and receiving encouragement, reassurance and empathy from others though both verbal expressions and physical gestures. This emotional support was found to improve perceptions about nascent relationships, with genuine appreciation felt towards those who remembered to enquire about a previously discussed challenge, and examples of participants actively seeking out other meetup attendees who had previously been emotionally supportive towards them. This included support around personal

aspects of a participant's life, such as their physical health or a family member, as well as emotional support regarding professional situations:

> *"A lot of the time you find out how people are getting on in their own lives. Catch up with people that haven't seen for a while…"* (Cycle 3, Participant 15)

Connections

Informal, interpersonal connections emerged as a potential resource that could be leveraged or harnessed through nascent social interactions. Participants often referenced how they had utilised a connection made through the meetup as an avenue to help further their own goals, or to access referrals from these contacts, thereby increasing network cohesion by using other people's social connections to access other types of capital they possess, such as knowledge, skills or finances:

> "*The thing with the IT industry, in many respects. is that it's not what you know it's who you know.. It is a game of making connections…"* (Cycle 3, Participant 14)

These initial connections served as a valuable ice-breaker from which future interactions could be initiated:

> *"When you go to land a client or land a project, the easiest thing in the world is when you go 'Oh Jesus, [redacted], sure you were at the meetup last month, what did you think of that talk?..."* (Cycle 3, Participant 11)

Participants demonstrated an awareness of, and appreciation for, the various levels of skills, experience, and position within firms, of those whom they met through the tech meetups. However the informality and non-hierarchical nature of the events was particularly found to encourage and facilitate connections that participants felt would not have occurred at a more formal, firm-led event, giving individuals access to occupational positions they might not usually have access to.

Knowledge

The author encountered examples of informal discussions involving information-sharing, and occurrences of participants actively seeking out attendees at tech meetups to discuss a project they were working on which the sought-out party might have information on:

> *"If I have some kind of issues with my project or work, I could ask people at the meetups, even people giving the talks, if they were relevant to the topic. Like when we had a machine learning topic, I was able to ask and got answers. I think the people there are usually very friendly and they try to help in a practical way…"* (Cycle 3, Participant 17)

Most notable was the sharing of tacit knowledge, which ranged from topics related to tech to simple acts such as texting people before a meetup to let them know about road closures, or parking availability. Incidents of these simple acts increased over time, as participants got to know each other better and this tacit knowledge-sharing assisted in the emergence of social bonds. There were also regular incidents of strategic information-sharing, such as regarding which companies were recruiting, industry gossip about important local industry opportunities, task-related advice on a problem or project, or sharing of behind the scenes, privileged information, perhaps through speakers' tech talks:

> *"The talks mightn't always be in my area but you could still get in to it, particularly if the speaker is passionate about their topic, or they're sharing kind of (0.2) behind the scenes stuff from their own day to day work* ((smiles))…" (Cycle 3, Participant 6)

Position

An actor's external social context, or position within the larger social structure of their organisation, emerged as a resource which could be tapped into through social connections. This manifested in occurrences of participants describing how they met individuals of senior positions within organisations as a result of informal connections:

> *"I've also introduced myself to a senior manager of a company that I'd really interested in working with when I finish college. I did that during the interval at the meetup, I got to chat to him about new things happening in tech when we were having a beer* ((smiles)). *I wouldn't have a hope of rocking up at his workplace and talking to him like that. But the following month, at the next meetup, we said hello and chatted again…"*(Cycle 3, Participant 4)

Favours

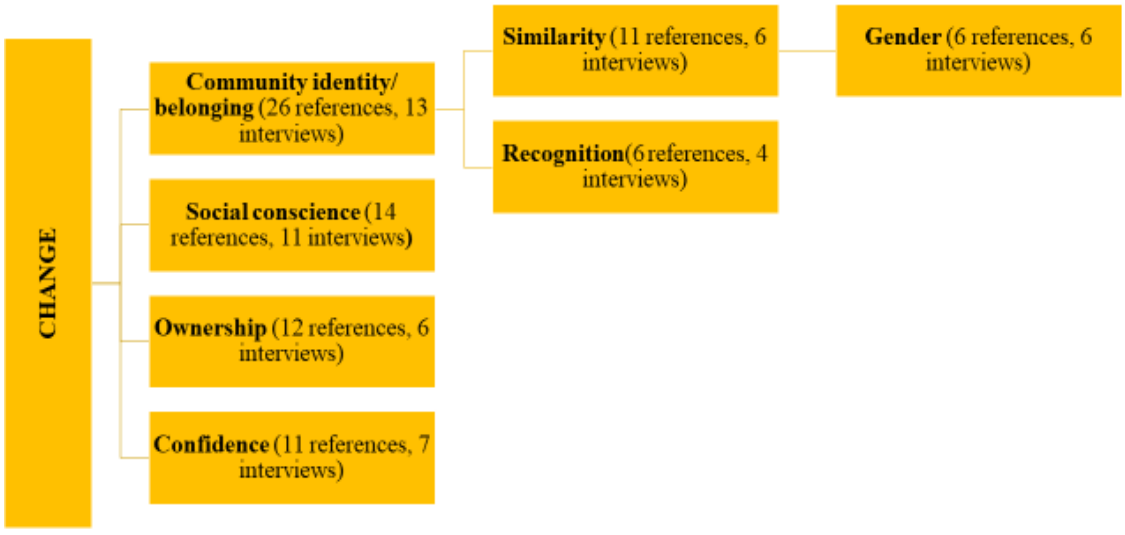
Cooperative behaviour manifesting itself in the informal exchange of favours was evident in several forms, from offering advice regarding a project to asking people to present a talk. Members of the organising group described approaching their professional contacts informally to ask would they present a 'tech talk'. These requests were regularly responded to positively, with participants noting how presenters invariably felt the 'ask was small' and enjoyed 'giving something back to the community'. The act of gifting unused food or drinks to attendees at the end of an event was shown to strengthen relationships by creating a sense of belonging to the group:

> *"The organisers always encourage people to take home any leftovers, which goes down well with the students* ((laughs))…" (Cycle 3, Participant 4)

4.3.1.5 Change

Further analysis of the data assisted with the development of an understanding of the changes to both the individual and within the collective community that occurred during the process of early social relationship initiation, and the meaning ascribed to those changes (Figure 18).

Figure 18 - 'Change' subcategory



Source: created by author

<u>Community identity/ belonging</u>

During interviews, repeated references to community and network prompted the author to ask participants to specifically discuss what a network and community meant to them, the difference between the two, and whether they would consider themselves a part of either, or both, as a result of attending tech meetups and the bar afterwards. This brought forth the largest grouping category within the subcategory 'Change', that of the evolving sense of 'Community Identity/ Belonging' within the tech meetup group during this study as relationships were initiated.

A community was overwhelmingly described as a fluid group driven by reciprocal, interpersonal relationships and governed by shared values of supporting others and contributing to the greater good of the group:

> *"The community is more focused on helping each other and making sure that each other is supported whereas the network is just potential supports that you could reach out to…"* (Cycle 3, Participant 2)

Participants described feeling they were part of, and belonging to, a distinct 'community' within the tech meetup setting when they received but also, and crucially, they gave support. The community was ascribed both emotional and economic value, with participants describing it as an active, relationship-driven space where they could 'have a rant' about challenges faced but also informally keep their 'ear to the ground' in order to seek out or leverage employment or business opportunities. There were perceptions that more effort is required to become part of a community, with several participants referencing the 'contribution' one makes in order to legitimise interpersonal relationships within the community, and the time they invest in new relationships within a community:

> *"A community is definitely more about relationships, about people you've taken the time to get to know, and they've taken the time to get to know you. I think people feel they have to have a network for contacts. Whereas you're more lucky to have a community, it's more genuine…"* (Cycle 3, Participant 4).

There was an expectation that this contribution was reciprocal, with characteristics of the tech community such as open source sharing cited as encouraging a sense of community. Making this contribution was associated with benevolence, with many speaking in terms of supporting and helping others:

> *"When you're talking about a community, you're talking about supporting others, whether that is a weaker company or a weaker individual* (0.2) *weaker is probably the wrong term. Somebody who's maybe not as far along in their career* (0.2*) particularly younger people…"* (Cycle 3, Participant 8)

There were also indications that, in identifying as a member of this community unit, participants drew on an emergent sense of collective identity to positively evaluate the tech meetup community through comparison with other groups, namely networks of institutional actors such as local government, actors from the broader business community, or older tech professionals:

> *"When we look for speakers, we try to make sure that we're not just hitting the standard profile of white dudes who have been in the industry for years because there's plenty of those voices that we've all heard from* ((smiles)). *So we're trying to make sure that we have a diverse speaker list…"* (Cycle 3, Participant 1)

While the evidence suggested participants felt they belonged to this nascent community, a network was described more in terms of something that 'belonged' to them, with participants using self-seeking terms and associating networks with the interests of private firms or institutions, motivated by the need for economic rather than emotional exchanges, and describing interactions that take place in predominantly formal, professional contexts:

> *"My network is more people that I am aware of and have made some connection with in my life in some way who I could potentially reach out to and ask a question or (0.3) probe for information* ((smiles))…" (Cycle 3, Participant 16).

Participants described the network as a 'passive' source of resources that they activated when they needed it, but rarely actively contributed to on a regular basis:

> *"The network there, it exists, you draw from it when you need it. I couldn't see myself actively saying, today I'm going to do something for my network. Whereas there is a sense of contribution with a community. Even what I said about helping with the chairs at the tech meetup. With a community you get off your arse and give a little. You want to do something for someone else…"* (Cycle 3, Participant 9)

Similarity: the compositional heterogeneity of the meetup attendees, from a diverse range of specialties within the broader tech discipline and with various organisational backgrounds, provided rich opportunity for new connections with interpersonally similar people who nonetheless had avenues to diverse knowledge and domains. During interviews, participants revealed how they particularly valued hearing and sharing stories about technological, commercial and financial challenges they faced. There was strong evidence of a preference to connect with people they perceived as having similar personal and/ or professional backgrounds, social attitudes, behaviours and values, suggesting a desire to forge bonds with 'like-minded' individuals:

> *"That's what people want, to come and connect and catch up with people who are in similar technical spheres. So, the tech folk want to talk tech with other tech people…"* (Cycle 3, Participant 16)

Over time, participants became increasingly relaxed and confident in the company of individuals who, they felt, shared personal commonalities, with descriptions of regularly discussing family life, hobbies, travel and musical taste:

> *"I think seeing people regularly, and knowing you're likely to catch up with them the following month, you realise that you have more in common than you thought (0,3) there's the space to allow you to realise that…"* (Cycle 3, Participant 6).

Gender: Analysis of the data also revealed that interaction was prompted, and bonds emerged,

as a result of gender-based similarities. Males made up an average of 80% of the meetups. From the first event, the author observed that many of the female attendees would gravitate towards other females during the interval and spend much of the time chatting to other females. Over time, this group of women began to sit together at every meetup. Several females arrived at the event together and a number of female participants told the author that they deliberately met up in advance of the event, so they did not have to attend alone. Others described how they met up in advance as it was an opportunity to socialise with women in tech who they had befriended through the meetups. Female participants noted that they often discussed how tech was a family-friendly job that offered significant flexibility. They also described providing advice and information to other females whom they had met through the meetup, noting that they often felt they had less access to these instrumental resources themselves because they were not 'one of the boys', or did not play sports with the men:

> *"I'm the only woman in my team in* [redacted] *There is no other female software developer there, so it's nice to just meet other women in the same area as me. There's not a lot of us about…"* (Cycle 3, Participant 7)

Over time, the women attending the meetups began to take the form of a 'community within a community' where they accessed both instrumental and affective resources.

Recognition: there were indications that a sense of belonging increased when participants felt acknowledged and recognised by other attendees, with perceptions of a welcoming informality and 'friendliness' at the meetup, which consisted mainly of recognising and responding to familiar faces, manifesting in descriptions of easy companionship which were closely linked to the social context of the events. Although the extent of interactions was varied and often limited, it was clear that all participants appreciated, and came to expect, a friendly welcome at meetups, and to feel at home amongst, and recognised by, like-minded individuals:

> *"It's also nice to just hang out with the people who go every month, hear what people are at. There's one guy who has started up his own company and I'm always interested to hear how he's getting on because that's something I'm interested in doing…"* (Cycle 3, Participant 4)

Social conscience

Participants demonstrated pride in their own sense of community, and the fact that they were supporting other individual members and also the collective meetup community by organising and engaging with meetups. Over time, this contributed to a clear willingness to volunteer their time and take on new tasks or roles. It particularly included actively welcoming new members,

and recognising and responding to perceived weaknesses in others when it came to making new connections:

> *"I don't mind doing a little bit of outreach for people who seem like they're a little bit lost and making sure that we get them chatting and we find other people around who they can potentially make a connection with as well…"* (Cycle 3, Participant 2)

Ownership

There were indications on the part of the organisers and, as time progressed, the attendees that they had a sense of ownership over the tech meetups and associated social group. With the organisers, this often manifested itself in concerns that institutional actors such as local government and firms with their own agendas might try to control or manage the events, or that meetup organisers might end up subservient to external funders due to sponsorship arrangements:

> *"And that's what SOME* ((smiles)) *folks in* [redacted] ((refers to institutional actor)*) wanted, they wanted it to be a mechanism to promote, to drive jobs, to get people moving, and we're not* (0.4*) we're like 'No', that's not what we want. So they went to form their own tech meetup and it didn't take off the ground* (0.3). *Not that we're protective* (0.2)*, we're very much conscious that the appetite for a meetup hinges on that neutrality…"* (Cycle 3, Participant 8)

This dovetailed the view expressed by attendees that the meetups were run by and for the tech community, rather than for the commercial benefit of private firms, with indications that this viewpoint increased the moral obligation or social contract that established the implicitly agreed rules of behaviour regarding how attendees were welcomed or put at ease. As during Cycle 2, participants likened formal, institutional run events to 'school', and associated the informality and non-hierarchical nature of meetups with being more engaging:

> *"What is great about the meetups is that there's nothing like that old school, boring, like* (0.4) *like being in school* ((smiles)). *Nothing dull and structured. It's upbeat and it's good craic* (0.3) *not all the talks would interest you but there are a lot of good ones, even if it's not your area…"* (Cycle 3, Participant 15).

The physical act by the organisers of requesting help with tidying up the room at the end of meetups helped to increase this sense of belonging to, and ownership of, the group, with many participants reporting how, over time, they felt more like 'one of the gang' when they joined

in with this activity. This often resulted in conversations with new people, which continued as they left the building and moved on the post-meetup socialising:

> *"I think asking people to pitch in and help creates that sense of community, you're not an invited guest, you're one of the gang, almost* ((smiles)). *It gives anyone who is feeling awkward or shy something to do, a reason to join in a casual conversation…"* (Cycle 3, Participant 13)

Confidence

Closely associated with both the contextual conditions of the study and the meeting of participants' social and psychological needs was an increase in their confidence to interact and engage with new contacts. There were indications that participants associated this confidence with social enjoyment and the 'fun' they experienced, and that these feelings of enjoyment increased intimacy and strengthened their confidence in forming new relationships. While 'fun' is a complex phenomenon that can have different meanings for different people, in the context of this research study it was observed in terms of novelty and laughter in the social context that acted as a powerful social magnet to engage in future shared activity:

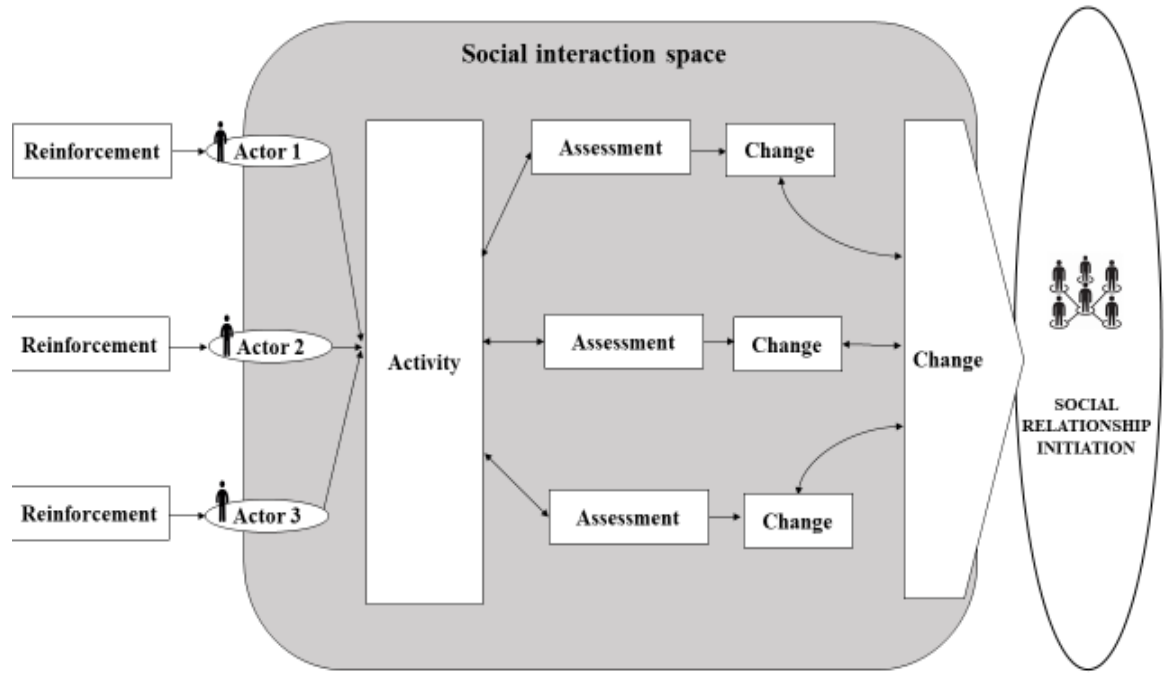
> *"It was a bit of fun, like it was 24 hours. We got pizzas in, brought in cakes and we were all in a room just like kind of talking shite and being stressed out together over getting stuff across the line* ((laughs))…" (Cycle 3, Participant 2)

4.3.2 Emergent subprocesses of early social relationship initiation

During the latter stages of analysis in this study, an inductive-abductive approach was taken by moving recursively between emerging themes and data discussed in the section above, and existing theories and concepts (Gioia *et al.*, 2013). From examining the resource exchange at play, and how these current or potential future exchanges motivated actors to engage in behavioural activity conducive to forming new relationships, the idea emerged that the social behaviour apparent in this study developed through a social exchange process in a highly contextualised setting. Taking a process approach to the sub-category 'Motivators' (Figure 15) also suggested that there were two distinct questions to be considered within this sub-category: *what prompted actors to commence interactions*?; and *what positive or negative factors influenced them to engage in repeat interactions, once initial contact was made*? At this stage a set of guiding questions was developed to assist and direct the scanning and searching of data and elucidate the process of social relationship initiation at play (Figure 19):

- *What was the social interaction space (context) in which the exchange occurred?;*
- *What reinforced or hindered individuals' entry this interaction setting?;*
- *What was the initiating activity in the exchange?;*
- *What rewards or risks presented and were assessed?;*
- *What changes occurred during or as a result of the exchange that impacted social relationship initiation?*
- *What processes are underway during this initiation?*

Figure 19 - A social exchange process during social relationship initiation



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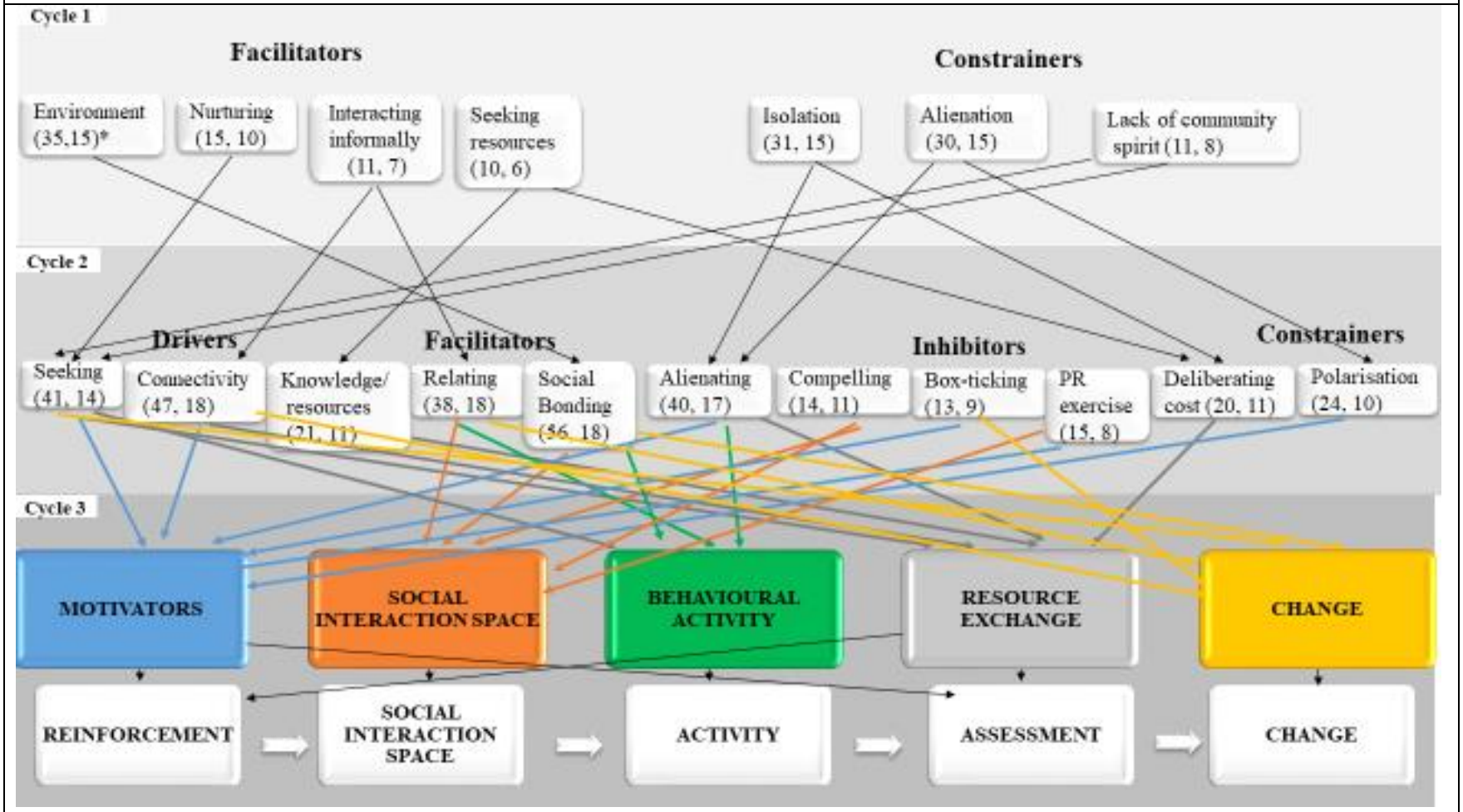
During the final stages of iterative, grounded theory analysis using constant comparison, these questions were used to categorise codes into the final, refined sub-categories that encapsulate the essence of the data: the **Reinforcement** that prompts an actor's entry into the **Social Interaction Space**, where collective behavioural **Activity** conducive to meeting new contacts occurs, **Assessment** is undertaken of current and potential risks and rewards associated with new interactions (which influences the decision to continue interactions) and the individual and collective **Change** that occurs, which impacts the process of **Social Relationship Initiation** (Figure 20).

Figure 20 - Refinement of sub-categories during three AR cycles

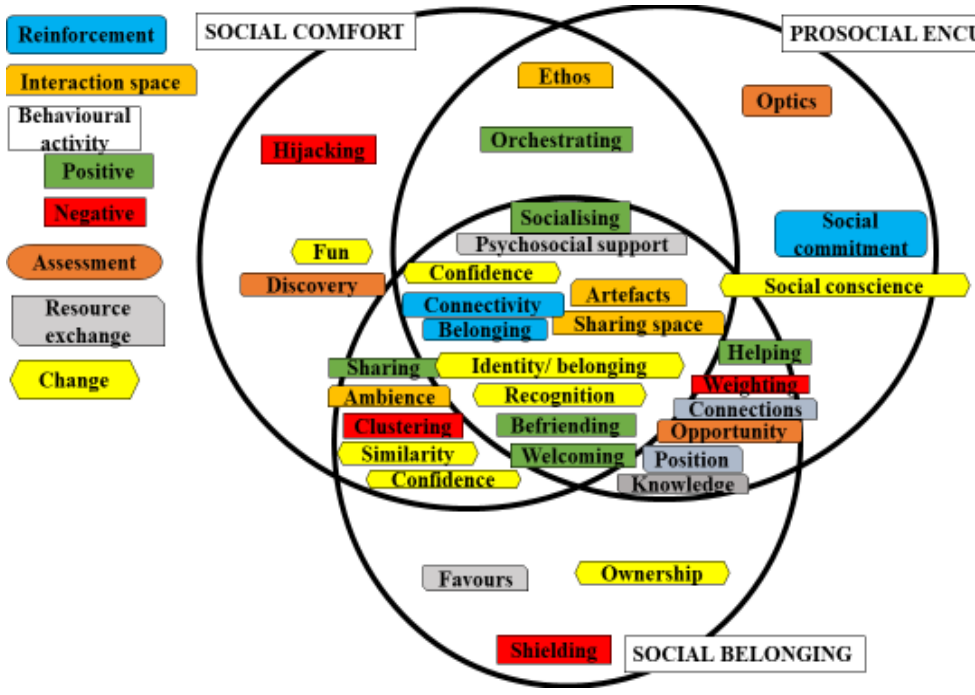


***(No. of references, No. of interviews)**

Source: created by author

Within these final categories, three central but interconnected ideas emerged: that three concurrent and interdependent subprocesses of social relationship initiation were underway: 'social comfort', 'prosocial enculturation' and 'social belonging'. Analysis of the codes and categories revealed that actors could move back and forth between the three subprocesses at any time, and traverse more than one subprocess at the same time (Figure 21). Through theoretical elaboration in the next chapter, it will be shown how these three subprocesses explain the nature, mechanisms and implications of what happens during social relationship initiation amongst business actors.

Figure 21 - Overlapping categories within three subprocesses of social relationship initiation



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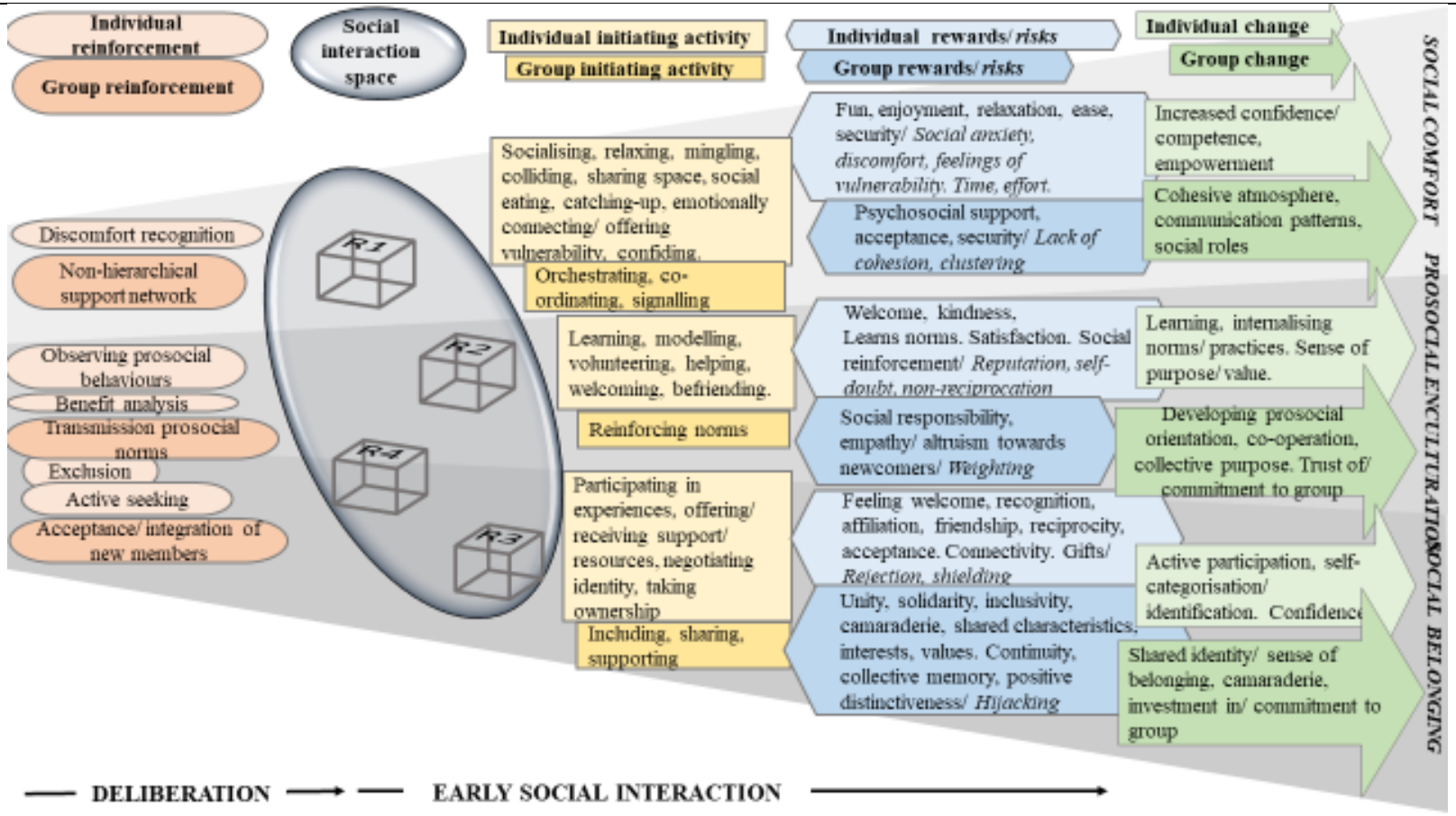
The final stage of categorising and refining also helped to conceptualise a model of the process of early social relationship initiation amongst business actors (Figure 22), which spans a 'deliberation' phase, before an individual meets a new contact for the first time, and their 'early social interactions', as new bonds are formed. These interactions occur within four separate metaphorical rooms, grouped as the social interaction space in which interaction took place during this study: within the organisers WhatsApp group (Room 1); at the tech meetup (Room

2); during the walk to the bar after the meetup (Room 3); and at the bar (Room 4). The model first identifies the factors that prompt or reinforce the subprocess before the actor meets a new contact for the first time; the key initiating activity by both the individual actor and the group that occurs during each subprocess; the rewards and risks associated with the activity; and the resultant individual and group change that occurs in response to the activity, which contributes to social relationship initiation. There was evidence of all three subprocesses occurring in all four of the 'metaphorical rooms' within the social interaction space.

Figure 22 - A model of social relationship initiation amongst business actors



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4.4 Conclusion

This chapter illustrated how grounded theory was employed in this inductive study to provide a transparent and systematic means of iteratively analysing the data during three action research cycles and making analytic choices that illuminate the relationship between the data and conceptual categories through the using of coding, memo-writing and sorting. This approach allowed for the emergence of rich insights from empirical observations. Having started analysis in empirical observations, an inductive-abductive approach (Dubois and Gadde, 2002) towards the latter stage of data analysis, moving between the empirical world and the literature, helped to uncover the social exchange process at play, at which point social exchange theory (Homans, 1958; Blau, 1964; Cropanzano *et al.*, 2017) was used as a theoretical lens through which to understand the findings and advance this study's contribution to knowledge. This will be discussed in greater detail in the next chapter.

Chapter 5: DISCUSSION

"If you want business people to build relationships, get them together socially so that they can <u>really</u> get to know each other…" (Cycle 2, Participant 3)

Relationship initiation between individuals is a fundamental aspect of human social interaction, encompassing the processes through which individuals establish new connections, form bonds, and initiate interpersonal relationships. Informal, personal relations are often seen to enhance the initiation of business relationships (Halinen and Salmi, 2001; Halinen and Törnroos, 1998). In the high tech sector, within-community relationships have been found to be pivotal in supporting community growth and collective learning amongst firms (Saxenian, 1994), while the external connections of tech employees within the broader tech community are associated with sustained growth, through the flow of people, information and tacit knowledge (Saxenian and Hsu, 2001). Tech communities rely on collaborative networks and ecosystems to address complex challenges, develop cutting-edge technologies and drive industry growth, with collaborative endeavours within tech communities shown to foster cross-disciplinary partnerships (Bietz *et al.*, 2010).

Using inductive action research, this study developed a model for early social relationship initiation amongst business actors based on data collected amongst a group of technological entrepreneurs in an Irish microcity as they moved from the 'deliberation' phase, before an individual meets a new contact for the first time and into their 'early social interactions'. This took place in four separate but connected metaphorical rooms, grouped together as the 'social interaction space'. The model (Figure 22) identified 'social comfort', 'prosocial enculturation' and 'social belonging' as three early subprocesses of social relationship initiation. The significance of these findings will be discussed in this chapter.

Section 5.1 examines how relationship initiation is approached by academic scholars, paying particular attention to the processes extant in the literature to explain the phenomena under study. Noting the dyadic focus of this study, and the range of interpersonal behaviours and emotional experiences related to individual well-being and social integration that emerged during data analysis, it considers relationship initiation in a multidisciplinary context that draws insights and synthesises perspectives from psychology, sociology, communication studies and other relevant disciplines to elucidate the workings of relationship initiation in human social dynamics. Section 5.2 interprets the research findings through the lens of social exchange theory, the theoretical framework considered most suitable to explain the findings. This section critically examines, within the context of some theoretical issues posed in the existing

literature, the study's three key contributions to knowledge and describes the propositions arising from the study.

5.1 Defining social relationship initiation

This study adopts the position that a social relationship amongst business actors comprises the interpersonal attachments that result from a series of recurring interdependent, socially-situated exchanges between two actors (Cropanzano and Mitchell, 2005) that are perceived by the actors to have personal meaning (August and Rook, 2013) and a degree of mutual understanding, support, and emotional investment (Reis and Collins, 2004). It can be distinguished from purely transactional or instrumental business relationships by its informal, spontaneous nature, the presence of emotional bonds, personal connections, an interest in the wellbeing of the other party (Fiske, 1991) and absence of formal negotiations or contractual agreements. While both types of relationships involve elements of trust, commitment and cooperation, the underlying motivations and dynamics can differ significantly in that social relationships are primarily driven by, and prioritise, mutual enjoyment, as opposed to the professional collaborations or strategic partnerships that prioritise efficiency, productivity and mutual benefit in typical business relationships (Dwyer *et al.*, 1987).

It has been argued that the initiation stage is the most critical phase or stage of a relationship, in that what occurs during initial interactions often determines whether two people come to define (or not) their experiences to be the beginning of a close relationship (Sprecher *et al.*, 2015). It is also considered the most frequently experienced stage, and can be the one often vividly recalled years later (Custer *et al.*, 2008). Although the literature lacks a clear definition that is agreed across the disciplines, an examination of multidisciplinary relationship development and initiation research found general consensus that relationship initiation represents the earliest of multiple stages, states or phases of interaction, aimed at establishing rapport, mutual understanding and trust between individuals. It commences with a mutual awareness of, interest in, or search for a potential partner and unfolds through a series of interactions that can be influenced by individual characteristics, motives, situational factors, contexts, such as proximity, and cultural norms. These interactions can include a range of verbal and nonverbal exchanges, such as introductions, self-disclosure, information exchange, reciprocity and mutual attraction, cognitive evaluations and emotional experiences, ultimately leading to the establishment of meaningful social connections, or not.

In order to provide a foundation for this study, and explain HOW relationship initiation occurs, it was considered essential to first define WHAT relationship initiation actually is (Whetten, 1989). This was done by taking a broad view, and placing relationship initiation as a process within the larger process of relationship development, using seminal models stemming from different theoretical bases.

5.1.1. In business contexts

The IMP approach considers a relationship to be an interactive exchange relationship between two organisations, the buyer and seller, with both economic and social elements linking individuals representing the buyer and the seller though activities and resources (Håkansson and Snehota, 1995; Håkansson, 1982). The initiation of these relationships serves as the foundation for establishing mutually beneficial connections and partnerships between individuals, organisations, and other stakeholders. However the nuances and determinants of this pivotal precursor to fostering enduring business connections remain an understudied area of scholarly inquiry (Mandják *et al.*, 2015), with a clear definition of relationship initiation lacking in the literature (Aaboen and Aarikka-Stenroos, 2017). Relationship initiation is considered a difficult phase to study because it has many potential beginnings (Holmen *et al.*, 2005) and ascertaining which particular contacts between parties brought about initiation is not always an easy task (Houman Andersen, 2001). Studies in the business discipline have typically focused on the initiation of relationships between organisations (Edvardsson *et al.*, 2008; Cann, 1998; Aarikka-Stenroos, 2008), starting with a need and search for an exchange partner (Wilson, 1995; Frazier, 1983) or awareness of their existence (Dwyer *et al.*, 1987) and ending in an agreement or transaction that may lead to a relationship.

Successful relationship initiation can contribute to the development of social capital, facilitating access to resources, information, and social opportunities (Putnam, 2000). Hite (2005) posits that entrepreneurs initially rely on pre-existing, close, strong ties, such as family, friends, and former colleagues, for resources and support during the ‘emerging’ stage of their business to enhance success. These later expand to include more diverse, weak-tie connections during the ‘growth’ stage, as the business develops and its needs change. Hence early-stage entrepreneurs benefit from deeply embedded relationships within their social networks that offer trust and support. Highlighting the importance of network configurations, Lechner and Dowling (2003) emphasise the strategic management of networks to bridge structural holes and access a wide range of valuable resources and knowledge, with relationships often

beginning through the recognition of opportunities. Entrepreneurs who can effectively leverage their social relationships are thus better positioned to exploit opportunities and drive business growth. The presence of trust and commitment are considered essential social elements in relationship success (Morgan and Hunt, 1994; Håkansson, 1982), though there is not consensus about when this trust appears.

As a stage in relationship formation

A number of seminal models strongly influencing IMP research have adopted the life-cycle theory, or growth approach to relationships, providing valuable frameworks for understanding the broader process of relationship formation in business contexts. These models either implicitly or explicitly acknowledge the importance of the early phases of relationship initiation as influencing the gradual development of trust and commitment through repeat interactions during the search, evaluation or trial of potential partners based on economic and social aspects. Although they use different terms and characteristics, common to all these models is that they tend to be time-bound, with several sequential stages through which relationships progress or evolve via deterministic action from the actors to resource commitments and interdependence. These models generally describe relationships at the inter-organisational level, with recurring themes including relational constructs such as trust, commitment and cooperation and effective communication activity, such as active listening and information exchange.

Considering buyer-seller relationships in industrial markets, Ford *et. al*'s (1980) five, non-sequential Stages of Relationship Development Model suggests that relationship initiation, or 'the pre-relationship stage', involves the awareness and evaluation of potential partners based on experience and distance, followed by the 'early stage' establishment of initial contact and rapport-building through activities aimed at assessing compatibility, identifying shared goals, signalling interest and building trust between parties. Ford emphasises that not all relationships will move through these stages in a predetermined way, with many failing to develop after an initial contact (Ford *et al.*, 1998).

With relational exchange theory, Dwyer *et al.* (1987) identify 'awareness' of potential partners as the first of four phases in fostering long-term exchange relationships, characterised by positioning and posturing of parties to increase their attractiveness to each other. Larson (1992)

takes a process approach to network formation in high-growth entrepreneurial firms to define the historic 'preconditions for exchange' during the first of three phases of relationship formation, which are personal reputation, pre-existing relationships between connected people, and firm reputations. This is followed by parties gauging and testing compatibility during 'exploration', at which point the emergence of trust becomes an important condition. Kanter (1994) describes phase 1 as a 'courtship' period, when parties are attracted and discover their compatibility through a process that is reinforced by selective perceptions, before embarking on 'engagement' during phase 2. Heide's (1994) conceptualisation of 'relationship initiation' involves a two-phase evaluation of potential exchange partners, initial negotiation and preliminary adaptation efforts. Wilson (1995) describes the pre-relationship as a 'search and selection process', commencing when partners hear or gain knowledge about one another based on reputation for performance and trustworthiness. This is characterised by initial interactions and social bonding through exchanges such as making introductions, exchanging pleasantries, and assessing each other's suitability as potential relationship partners, with limited commitment.

Stages models are built on the weak assumption that relationships develop through a sequential or incremental process, rather than following indeterminate paths through more recently proposed evolutionary, unpredictable and multidirectional 'states' or statuses' (Batonda and Perry, 2003; Edvardsson *et al.*, 2008) that emphasise the process nature of change and the context in which it occurs (Rosson and Ford, 1982). They are also typically applied at the inter-organisational level, which means the nuances of interpersonal and affective interactions between individual actors are not always duly considered. However the idea of distinct 'stages' was helpful in the context of this study in helping to place a boundary that indicates a progression or change in individual actors, from 'Deliberation' about whether or not to enter the 'Social Interaction Space', to engaging in 'Early Social Interactions' within that interaction space (Figure 22). In addition, while the more flexible 'states' models allow for less active periods in the relationship development process, such as the dormant phase (Batonda and Perry, 2003), the 'real world' phenomena under study during this action research concerned an actualisation period in which individuals were actively engaged in initiating new relationships.

5.1.2 In societal contexts

Sociologists note that business dealings are embedded within personal relations and structures or networks of such relations (Granovetter, 1985). Hence it is no great surprise that almost the same expressions often appear in these very different approaches to relationship development, such as ‘similarity’, ‘trust’ and ‘commitment’ (Mandják *et al.*, 2015). Scholars have found that individuals engage in the initiation of friendships and romantic partnerships to fulfil social needs and enhance social support, reduce uncertainty and maximise rewards while minimising risks. The environmental context in which a relationship begins, including proximity and the specific settings in which people meet (Sprecher *et al.*, 2015), can impact whether individuals enter a relationship.

A number of key conceptual models provide a basis for understanding the complex and dynamic process of interpersonal relationship initiation in societal contexts and where, and how, the process fits within the broader area of relationship formation. With Knapp’s (1978) Stages of Relationship Development Model, ‘initiating’ is the first of ten stages in relationship development between two people, characterised by the formation of first impressions as individuals ‘come together’, and adopt broadly held social norms. Behavioural activity during these initial contacts, according to Knapp, is designed to signal interest, make a first impression, reduce uncertainty and establish rapport, and can include exchanging greetings, making small talk and engaging in nonverbal cues such as smiling or maintaining eye contact. This is followed by ‘experimenting’ with the new connection through self-disclosure and information-seeking to assess mutual interest and establish common ground, and impression management strategies such as self-presentation and selective disclosure to create a favourable impression and enhance likability.

Levinger (1980) recognises ‘acquaintance’ or ‘initial attraction’ as the first of five phases in informal affective relationships between adults, which can continue indefinitely and be facilitated by the reward that a new contact can provide to an individual. This leads to the next stage, ‘build-up’, which is influenced by common ground and the emergence of trust. Levinger offers an explanation for the transitions between adjacent phases, with the progression from ‘acquaintance’ to ‘build-up’ occurring when individuals start to feel a growing sense of attraction or curiosity towards one another, prompting a desire for deeper connection. Murstein (1970) proposes that individuals progress through three distinct stages of relationship

formation, the first being the 'stimulus', which refers to attraction based on non-interaction cues and guided by what individuals find important.

With interpersonal relationships, the process often commences when feelings or personally revealing information are expressed between individuals (Reis, 2018a) and is influenced by a number of key factors. Seminal works have identified these as proximity, which facilitates initial contact (Levinger, 1980), similarity in attitudes, values, and interests, which enhances rapport and compatibility (Byrne, 1971), physical attractiveness, which influences initial impressions (Berscheid and Walster, 1974), self-disclosure of personal information, which fosters intimacy and trust (Altman and Taylor, 1973) and reciprocity, which reinforces positive interactions and encourages further engagement (Gouldner, 1960).

5.1.3 In this study

The earliest 'stage' in most inter-organisational and interpersonal relationship development models starts with parties who do not have a pre-existing relationship commencing a process of searching for, identifying and, in some cases, initiating interactions. A commonality with the models discussed in the sections above, which represent different fields of inquiry and concepts, is the appearance of such elements as attractiveness, often facilitated by physical attributes (interpersonal), potential rewards (inter-organisational), proximity (interpersonal and inter-organisational), similarity (interpersonal and inter-organisational) and reputation (interpersonal and inter-organisational). The academic focus is very often on the antecedents and conditions of relationship initiation, and the processes underway when individuals begin interacting for the first time. Limited attention is paid to what comes before, such as the earliest psychosocial processes at play as individuals consider placing themselves in a situation where they might initiate a relationship, or conceptually distinguishing the earliest interaction settings in which people meet for the first time along the dimensions that could have implications for relationship initiation.

In this study, the relationship 'stage' under scrutiny bears close resemblance to Wilson's (1995) 'search and selection' conceptualisation of relationship initiation but also draws from Larson's (1992) view that historic experiences and social context can provide the environment for relationship initiation. It examines the initiation of social relationships specific to the longer term development of a business social bond or relationship. The study defines social relationship initiation amongst business actors, the phenomena under examination, as follows:

> *'Social relationship initiation amongst business actors is an incipient phase of deliberation, early social interactions and strategic self-presentation embedded in social contexts, including cultural norms and historical dynamics, where the earliest socio-emotional bonds are beginning to come into being'* (Source: author).

It is characterised by an awareness of the need or desire for personal connection with a potential partner and commences at a point when individuals have no knowledge of each other but have begun to give consideration to their willingness and desire to commence interactions with others. Thus this internal, psychosocial activity that takes place prior to interactions constitutes an important part of the social relationship initiation process.

It includes early social interactions with limited investment nor an expectation of much in return, though there may be anticipation of future returns based on the degree to which the new relationship compares favourably to others. These interactions prioritise emotional fulfilment and social support, and are often guided by social norms that may be impacted by contextual setting and historic experiences, which create the conditions for the beginning of new social relationships.

5.2 How are social relationships initiated?

5.2.1 Theoretical framework: bringing an IMP approach to the social relationship initiation process

The IMP Group Model emphasises the importance of inter-organisational interactions, network structures and relationship-specific adaptations in shaping buyer-seller relationships. Much of the academic attention to date on the process of relationship initiation has been limited in scope to inter-organisational relationship initiation based on exchange behaviour, for example Frazier (1983), Edvardsson *et al.* (2008), with initiation seen as commencing when companies in a potential relationship recognise each other. Little attention has been paid to the beginnings of relationships (Holmen *et al.*, 2005) and lesser still to the human experience of individual business actors during that process, and the interpersonal relationships initiated between them that can ultimately facilitate and drive organisational relationships. Given the importance of informal, social and personal relationships in the critical initiation phase, such as when an existing personal relation provides a first contact and access to a new business partner (Halinen

and Salmi, 2001) or new exchange partners are identified via existing social ties (Ellis, 2000), this clear knowledge gap merits closer attention.

This study takes a novel approach by considering the preliminary phase of informal social relationship formation amongst individual business actors, from pre-interaction to early relationship initiation, where initial social interactions lay the groundwork for future collaboration and engagement. In the IMP tradition, a dyad is considered a natural starting-point for network research, as it represents a concrete and important level of business exchange (Halinen and Törnroos, 1998; Håkansson and Snehota, 1995).

Social Exchange Theory

Towards the latter part of analysis in this study, the author took an inductive-abductive approach by moving towards the literature to seek an explanation for themes of reciprocity and interdependence (Håkansson and Snehota, 1995) emerging through inductive coding. It became apparent that individuals were weighing up whether or not to engage in social interactions during the pre-interaction 'Deliberation' phase and also during 'Early Social Interactions', the latter being when they assessed the rewards and risks associated with their earliest interactions and decided whether to continue based on this assessment. A sense of obligation and commitment to the collective group also emerged early in coding, contributing to early relational norms amongst the collective group (Morgan and Hunt, 1994).

Studies in the IMP tradition have drawn on social exchange theory (SET), a key framework in the social sciences, as a valuable and robust theoretical lens for understanding the kind of action-reaction relationship processes in informal social interactions of small groups that were observed by the author (Homans, 1958; Blau, 1964; Thibault and Kelley, 1959), based on the principle that individuals enter relationships and groups that provide them with benefits. Cropanzano (2017) theorised the process of social exchange as a behavioural model that commences with an initiating action by one party to the target of the exchange, followed by reciprocation by the target actor. A series of bidirectional exchanges over time thus tends to translate into trust, commitment and mutual dependency (Cropanzano and Mitchell, 2005).

The principles of social exchange theory resonated deeply with the subprocesses emerging from the data during Cycle 3 coding and thus SET was selected as an appropriate theoretical framework for identifying and understanding the microfoundations of social exchange during

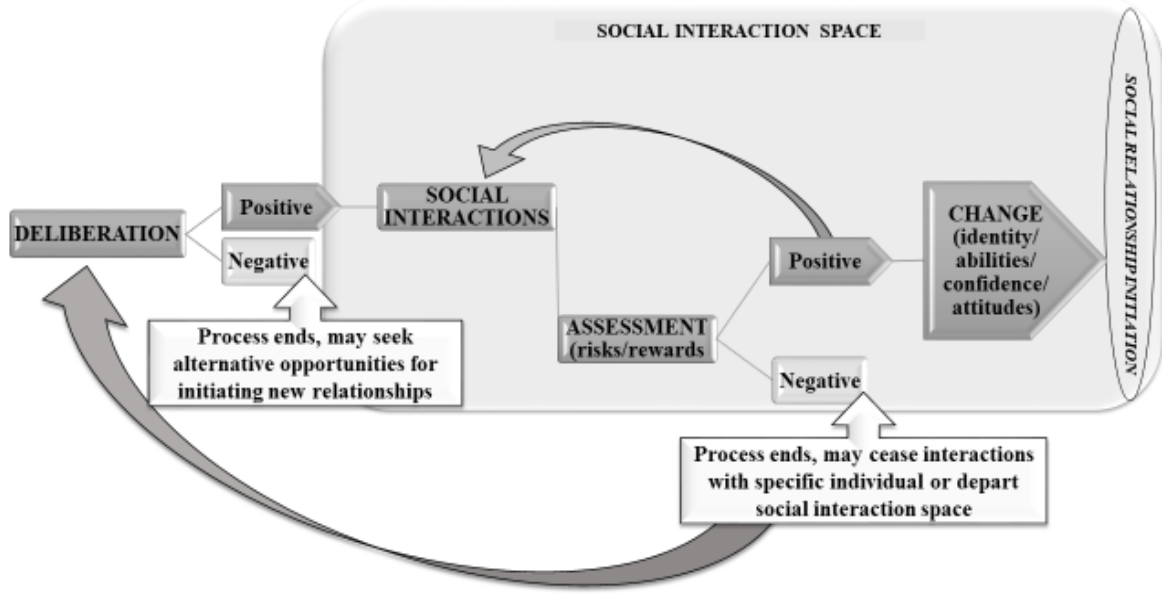
dyadic business relationship initiation in informal settings, and how actors' pasts and perceived rewards affected their social interactions and relations (Blau, 1964).

5.2.2 A model of social relationship initiation amongst business actors

The model of social relationship initiation amongst business actors developed during this study, which forms one of the research's key contributions to knowledge, in some respects adopts a 'stages' approach (Ford, 1980; Dwyer *et al.*, 1987) to social relationship initiation. It proposes a crucial stage before social interactions commence, the 'Deliberation' stage, during which the actor reflects and weighs up whether or not they will enter into both a physical space (the four metaphorical 'rooms') and also a relational space, whereby they are open to making new connections. Codes relating to this physical and relational space were grouped as the 'social interaction space'. The deliberation that occurs is different to the assessment of risks and rewards that take place later in the process, once interactions commence, in that individuals internally contemplate whether or not they are open to taking the first steps (both literally and metaphorically) into a social interaction space. A negative reaction during this stage will result in the process ending, and perhaps the actor seeking alternative opportunities for new relationships.

However, if the actor chooses to enter that space, they then engage in social interactions with new contacts. A search process is also evident in actors making sure they are in a 'socially comfortable situation' in which they feels at ease engaging with new contacts. During their early social interactions, the actor commences an assessment of the risks and rewards associated with these interactions. Negative assessment can prompt the actor to cease interactions, leave the space and possibly deliberate whether or not to re-enter. Positive assessment strengthens an actor's willingness to continue to engage. These ongoing interactions, over time, result in changes that impact social relationship initiation, such as the emergence of a collective identity whereby actors feel they belong to a distinct grouping (the tech meetup community) and changes in attitudes towards prosocially supporting that community, as well as improvements in individuals' confidence in their social interactions (Figure 23).

Figure 23 - Unpacking the model of social relationship initiation



Source: created by author

Strategic access to knowledge, resources, staying informed about industry trends, seeking mentorship and expanding business opportunities are often primary motivators to network and build professional relationships in the business literature (Burt, 2004; Coleman, 1988), particularly in knowledge-intensive industries (Cross and Cummings, 2004). Business actors are motivated to strategically invest in accumulating and leveraging social capital in order to access information, opportunities and support within their professional networks and enhance their professional standing (Nahapiet and Ghoshal, 1998). Entrepreneurs, in particular, recognise and seek out networks for their pivotal potential to build the social capital that allows them to access resources, gather market intelligence, create collaborative opportunities and learn from the experiences of peers (Podolny, 2001).

The literature on entrepreneurial cognition describes the mental processes, cognitive structures and decision-making mechanisms that entrepreneurs use to make assessments, judgements or decisions involving opportunity evaluation, creation and growth. Entrepreneurs have been found to engage in systematic information search, evaluation and decision-making influenced by prior knowledge and cognitive biases to identify and exploit opportunities (Mitchell *et al.*, 2007), with mental representations, cognitive maps and schemes used to guide entrepreneurial behaviour (Baron, 2008). Prior experiences have been linked to the likelihood of comparative optimism (Ucbasaran *et al.*, 2010).

Perceived opportunities and respective consequences are recognised as underlying drivers and influencers of interactions that provide direction (Blonska *et al.*, 2013). For instance, in this study, attending tech meetups provided opportunities to meet new contacts and expand professional networks but also required investment of time and social energy. Through the lens of social exchange theory, an individual's motivation to engage in social interaction is underpinned by a set of reinforcement tools that guides them in subjectively weighing the potential costs and benefits of forming connections with others (Blau, 2017; Hoffman *et al.*, 1998). They do so by assessing the perceived benefits of networking, collaboration and shared opportunities against the costs of time, effort and, crucially in this study, potential negative social consequences or adverse impacts resulting from interacting within a social context, such as risk related to reputation or norms. Novel to this study was that while an assessment of rewards and risks took place once interaction was underway that underpinned willingness and motivation to engage in regular social interaction (individuals' reason to interact within the metaphorical 'rooms'), an earlier psychosocial act of deliberation also took place before individuals had any initial interaction with each other (their reason to enter the 'rooms' in the first place). Rather than being reinforced by perceived tangible, strategic benefits and rewards, such as networking opportunities or access to information, this deliberation took place between intrapersonal psychological and socio-cultural aspects of interaction, influencing cognition and emotions. This deliberation reinforced the decision to actively enter into the 'social interaction space' in the pursuit of affective rewards that enhanced personal well-being and the satisfaction derived from supporting the well-being of the community (Cann, 1998). This finding prompted the first key proposition of this study, which is connected to the model developed:

> **Proposition 1:** *early social relationship initiation is reinforced by a psychosocial act of deliberation linked to the decision to commence interactions and reinforced by readiness, belongingness and active seeking that sees the intrinsic rewards associated with informal, social events shift motivational focus and increase intrinsic motivation.*

Taking a cost-benefit perspective based on self-interest, individuals were seen to have comparison levels representing their expectations about the outcomes of attending the events based on past experiences of feeling uncomfortable or excluded whilst attending formal, institutionally-organised events (Homans, 1961). Consequently, they sought to maximise positive outcomes by actively seeking out events where they felt socially comfortable, prioritising socioemotional over economic benefits. This active seeking was taken as an indication of their readiness to enter a new relationship.

While this readiness or active-seeking behaviour undoubtedly influenced social relationship initiation in this study, it was not necessarily a condition of commencing a new relationship as not all participants indicated that they were actively seeking new contacts. There is the possibility that some individuals entered a new relationship as a result of being pursued by someone interested in forming a new connection with them. Such a consideration is beyond the scope of this study but could open up an interesting area for future research.

Studies that consider readiness to enter a relationship as a predictor of its development are typically seen in the context of social and personal relationships but are nonetheless infrequent across the disciplines (Aron *et al.*, 1989; Schindler *et al.*, 2010). In the business discipline, readiness to enter a new relationship often refers to an organisation's preparedness and willingness to engage in collaborative partnerships, encompassing factors such as organisational capabilities (Eisenhardt and Martin, 2000), strategic alignment (Dyer and Singh, 1998), trust (Morgan and Hunt, 1994), compatibility and resource availability (Gulati, 1995). Hence this readiness is associated with a multifaceted assessment of strategically-focused and economic factors.

While extrinsic tangible rewards made contingent on task performance have been shown to undermine intrinsic motivation (Ryan and Deci, 2000; Lepper *et al.*, 1973; Deci *et al.*, 1999), the informal, non-hierarchical nature of the tech meetups, and an absence of organisational pressure to deliver results, was linked to a dominance of intrinsic motivation in this study. As with cycles 1 and 2, participants described how they valued choosing to attend out of personal choice, rather than because they felt mandated to do so by their organisation. This raises issues of control and autonomy, and points to the significance of context, with the informal nature of the events, and affective elements associated with informal interactions, having a catalysing effect on motivation by creating an autonomy-supportive setting which contributed to the development of greater intrinsic motivation. Building on Cropanzano *et al.* (2017), the findings thus propose that the decision to enter the interaction space, or commence interacting with new contacts, was strongly influenced by implicit, rather than explicit, reinforcers. These included positive feelings towards informal events and negative feelings towards previous formal networking experiences, which represented a past negative psychological exchange during which actors felt socially excluded. The ‘network pictures’ (Ford *et al.*, 2011) held by participants of structured, formal networking events conditioned their networking actions, which resulted in them reacting by seeking out alternatives where they felt socially comfortable, prioritising socioemotional over economic benefits.

While social belonging became apparent as a subprocess of relationship initiation once interactions commenced, the desire for belonging to the community was also found to reinforce entry into the 'interaction space', largely driven by feelings of exclusion or 'otherness' at more formal networking events. Widely covered in the literature on both interpersonal (Baumeister and Leary, 2017) and business relationships, this suggests individuals entered the interaction space in the pursuit of initiating meaningful connections in a social and relational place (Wenger, 1998) in response to fundamental human needs and a search for social identity (Brewer, 2007). Stepping into the interaction space was thus reinforced by the prospect of gaining acceptance by being part of new interpersonal events and identifying with one's social surroundings (Hofmann *et al.*, 2012).

While the somewhat simplistic 'stages' approach of relationships development was helpful in identifying the crucial 'deliberation' that occurs before actors enter the social interaction space, the escalation in relationship-starting activity that occurred once individuals entered that space also draws from Knapp's (1978) stage model of romantic relationships, by describing the strategic first impressions, or self-presentation, that occur when individuals meet for the first time, for example with actors helping out and volunteering at meetups. There was also evidence of individuals revealing personal feelings or information at an early stage during social interactions to foster intimacy (Reis, 2018b; Altman and Taylor, 1973), as would typically be seen in interpersonal relationships. This challenges previous thinking on relationship initiation (Aaboen and Aarikka-Stenroos, 2017) by suggesting the importance of actor bonds at the start, rather than the end, of relationship initiation in the start-up context. This action-reaction activity that actors engaged in will be described in the next section, in the context of its inherent subprocesses.

5.2.3 Three subprocesses of social relationship initiation amongst business actors

The study identifies three early subprocesses of social relationship initiation that form the basis of Proposition 2. Actors can move back and forth between the three at any time, and traverse more than one subprocess at the same time. Taking an IMP approach, Figure 22 captures the factors that prompt or reinforce the commencement of these subprocess; the key initiating activity by both the individual actor and the group that occurs during each subprocess; the rewards and risks associated with the activity; and the resultant individual and group change that occurs in response to the activity, which contributes to social relationship initiation.

Proposition 2: *Social comfort, prosocial enculturation and social belonging are three inherent, interconnected and context-dependent subprocesses of social relationship initiation which, when working in synergy, co-create the conditions essential for new social relationships amongst business actors to begin.*

Identified subprocess 1 - Social comfort

The identification of this subprocess supports previous findings that physical settings which promote comfort, relaxation and security during social encounters can contribute to a sense of psychological wellbeing that enhances actor confidence and security in interactions (Gardner *et al.*, 2000). However social comfort as a key construct during social relationship initiation involves not only the physical setting but also socio-emotional aspects relating to the ease and sense of security experienced through interactions with others that were particularly related to the technological community under study.

Social comfort is defined as the subprocess of establishing and maintaining a sense of ease, confidence and security in social interactions and involves adaptive responses to contextual factors such as the characteristics of the social environment and cultural norms, as well as behavioural activity and emotional factors.

For the individual actor, this subprocess commences with, and is reinforced by, discomfort recognition, when feelings of unease, anxiety or stress in social interactions or particular social situations often stemming from negative past experiences are recognised. This supports research which suggests past experiences in professional relationships and networks influence an actor's confidence and approach to new business interactions, and their perception of industry norms (Doney and Cannon, 1997), with negative experiences potentially hindering the ability to establish rapport and trust in new business interactions (Inkpen and Tsang, 2005).

Participants in this study repeatedly expressed a preference for making connections in informal, socially situated sites of interaction, where actors felt more comfortable expressing vulnerability, seeking advice and offering empathy and encouragement to others:

> *"People in this industry are usually a little bit weird, it can be harder for them to communicate in real life, not online so much, but in person…"* (Cycle 3, Participant 7)

Repeated exposure to social situations where the individual experienced the positive rewards of enjoyment, relaxation and ease from both their environment and their interpersonal

interactions reinforced feelings of comfort and confidence, increasing social comfort over time. During these interactions, activity associated with fun, intimacy and empathy increased confidence and competence in social interactions, further facilitating the process of social comfort. Individuals engaged in reciprocal behaviours aimed at seeking and maintaining social comfort, such as confiding in trusted others and expressing vulnerability or emotions.

Studying personal bonds in international marketing, Witkowski and Thibodeau (1999) identify comfort levels as one of three key meanings of personal bonds, along with friendliness and trust. Individuals are more likely to self-disclose, thus fostering intimacy and trust, when they feel comfortable revealing personal information to others (Reis, 1988), with the reciprocal self and partner-disclosure of personal information and emotion observed in this study, particularly relating to the challenges faced, seen as a form of psychosocial support that built trust and rapport (Laurenceau *et al.*, 1998).

Parallels can be drawn with the literature on 'pair' collaboration in innovation, which suggests that dyadic relationships amongst business actors provide psychological support and emotional encouragement and alleviate strains and stresses typically associated with the hurdles of innovation (Alvarez and Svejenova, 2005; Hunter et al., 2017; Wright & Cropanzano, 1998), since there is only one relationship through which emotions can flow (Bellis and Verganti, 2021). In this tradition, the social comfort conceptualised in this study provides an intimate, psychologically comfortable space for relationships to begin, where individuals feel more at ease sharing and listening through reduced fear or negative evaluation from others.

As individuals experience the fun, enjoyment and ease of social comfort in this study, their sense of security and acceptance increases. This manifests as feelings of relaxation and emotional well-being. As a result of this subprocess, individuals acquire new social skills, which further enhances confidence and competence in social interactions. Individuals feel empowered to contribute to group activities through inclusive activity that promotes a sense of belonging and ownership, fostering a sense of solidarity, positive group identity and collective efficacy, all of which strengthen social bonds and contribute to the initiation of social relationships.

Social comfort at the group level was observed as the collective development and maintenance of a supportive, cohesive, and harmonious atmosphere within the physical setting and the social group that is facilitated by the presence of a non-hierarchical support network willing to provide emotional and instrumental support to members:

> *"I'd try and come up with a question or two for the end in case no one else asks a question* ((smiles)). *And once you start, other people will jump in, which is great, but it is important for the speaker, that they don't just get silence. Because they're going 'did people actually enjoy this?' "* (Cycle 3, Participant 8)

Social comfort in the group context is fostered by the reward of psychosocial support from other members, characterised by receiving emotional support and feelings of acceptance and security, laying a pathway for collaboration and information sharing. Group members reinforcing and adhering to these norms impacts communication patterns, for example the signalling and co-ordinating amongst tech meetup organisers during events to ensure new attendees had somebody to talk to, and the development of social roles within the group. As a result of the subprocess of social comfort at the group level, a cohesive atmosphere develops amongst the group.

In inter-organisational settings, culture can reflect the collective experiences, norms and practices when it comes to attitudes and behaviours in business interactions (Schein, 1990). Context can play an active role through which these norms are learned, fostering adaptive behaviours (Argote and Miron-Spektor, 2011). With this subprocess, the study identified psychosocial support as an important potential reward that prompted individuals to engage in repeat interactions in a social setting. Over time, receiving psychosocial support influenced individuals' confidence in making new connections and increased a sense of social proximity (Boschma, 2005) with others. This finding supports research on interpersonal relationships, which suggests that individuals who perceive that they have a supportive network of family and friends may feel more confident and comfortable in initiating new relationships (Sarason *et al.*, 1986). Similarly, in business relationships, employees who perceive they have supervisor support are more likely to engage in cooperative behaviours and establish positive working relationships (Eisenberger *et al.*, 2002).

Novel to the context of this study, which is not always seen at formal network-building events, was the presence of a non-hierarchical support network outside of an organisational setting, and a culture amongst them of working in co-ordination to ensure individuals felt welcome and at ease during their social interactions. Studies of epistemic communities (Cetina, 2009), open source communities (Franke and Shah, 2003) and occupational communities of practice (CoP) offer useful foundations for analysing groups of disparate actors who foster social capital by connecting individuals with like-minded peers and thus providing the foundations from which new relationships can emerge (Nahapiet and Ghoshal, 1998). In communities of practice,

‘meaningfulness’ in interactions is negotiated through participation in social communities that come together to pursue knowledge through shared activities (Wenger *et al.*, 2002) and, in doing so, develop a common identity (Brown and Duguid, 2001). The tech meetup organising group, including the additional volunteers who joined it during this study, did take on characteristics of a CoP in its emergent, informal nature that set its own agenda based on the routine problems that arose during events (Orr, 1990; Gherardi *et al.*, 1998; Gherardi and Nicolini, 2000; Wenger, 1998; Thompson, 2005). However, while communities of practice typically operate against the background of an organisation’s objectives (Lave and Wenger, 1991; Wenger and Snyder, 2000), the subprocess ‘social comfort’ might be more closely linked to the professional background of participants in this study, and the specific nature of the technological community.

Within open source software communities, in which information, assistance and innovations are freely distributed, social norms of sharing and collaboration play a crucial role in shaping interactions (Reagle, 2010). Online tech communities, in particular, can act as a valuable channel of information and social support (O'Mahony and Ferraro, 2007) and a precursor of local communities in collaborative spaces (Capdevila and Mérindol, 2024). Collaboration in these voluntarily-assembled communities is often motivated less by monetary rewards and more by intangible factors such as community cooperation (Antikainen *et al.*, 2010; Aslesen *et al.*, 2019) and altruism (Hars and Ou, 2002). Recognition of the role of communities in creating, shaping and disseminating innovations is an important development in the innovation field (West and Lakhani, 2008). In this study, the collaborative, non-hierarchical group of organisers and volunteers who supported the tech meetup did display several characteristics of an open source community, in their voluntary participation and enjoyment and altruistic-based intrinsic motivation (Lakhani and Wolf, 2005). An interesting area for future study would be whether, over time, this potentially ‘open source’-inspired new community might act as an innovation catalyst in the micro city by continuing to support the emergence of the ‘social comfort’ that provides for the repeated interactions amongst innovation-focused actors necessary to create common references and spark new relationships, thus allowing knowledge to flow more easily and creating the potential to spread innovation activity. However this is beyond the scope of the current study.

Identified subprocess 2 – Prosocial enculturation

Prosocial behaviour is voluntary behaviour intended to benefit others (Eisenberg *et al.*, 2013) often influenced by contextually-embedded agents of socialisation, including family, friends and colleagues (Grusec and Hastings, 2014). Enculturation is the process whereby an individual learns and acquires the accepted norms and values of one's own social or cultural environment through immersion in interactions with community members and cultural artefacts in a way that shapes individuals' cultural identity and way of engaging with the world around them (Rogoff, 2003; Berry *et al.*, 2002; Poole, 2003). As such, it is causally dependent upon the local cultural environment (Menary and Gillett, 2022). Prosocial enculturation is defined as the subprocess through which prosocial norms, values, and behaviours are observed, learned, internalised and reinforced without direct, deliberate teaching, fostering the development of a prosocial orientation within individuals and groups that is characterised by empathy, cooperation, altruism, and a sense of collective responsibility to the well-being of others within the cultural milieu of the socially-situated environment.

The subprocess prosocial enculturation identified in this study typically starts with, and is reinforced by, individuals observing, experiencing, benefiting from and, over time, modelling the prosocial behaviours of others. Through these interactions, individuals experience and learn about kindness and welcoming, and the impact this can have when encountering new ties. This manifested in participants experiencing and engaging in behavioural activity that reflected prosocial attitudes, such as being welcomed to the tech meetup, introduced to, engaged in conversation with, and befriended by existing community members when they didn't know anyone, and seeing others help with elements of the event organisation, such as helping to stack chairs and carry refreshments to the venue. Over time, individuals internalised the sociocultural norms of the tech meetup community into their own behaviour. There was also evidence of participants engaging in a rational cost-benefit analysis when deciding whether to actively engage in the community, with some noting the reputational benefits of prosocial activity.

Through experiencing and engaging in acts of kindness and support within the group, individuals learned and reciprocated prosocial norms and experienced a sense of satisfaction and contribution. Individuals experienced social reinforcement from their social environment based on these prosocial behaviours, such as being thanked by organisers and acknowledged as 'essential' to the smooth running of the tech meetup. An individual's commitment to prosocial behaviours and values was further strengthened by developing a sense of

identification with, and emulation of, other prosocial individuals within the cultural context, such as tech meetup organisers or attendees who regularly help out at events.

In interpersonal settings, enculturation often begins in early childhood through social learning, observation and imitation of family members, peers and caregivers (Bandura, 1986). Similarly, in business settings, newcomers to an organisation typically learn about culture, norms and expectations through formal orientation programmes, informal interactions and mentoring relationships with colleagues, observing and modelling the behaviour of leaders and colleagues (Schein, 1990) and exposure to organisational rituals and symbols (Bauer *et al.*, 2007; Allen and Meyer, 1990). Company climate and values, such as promoting respect and acceptance, provide context for understanding and interpreting these norms, thus playing an important part in the enculturation process (Schneider *et al.*, 2013). Organisational settings that emphasise well-being, psychological safety and respect are thought to contribute to a culture of prosociality (Edmondson, 1999; Brief and Motowidlo, 1986). Empirical studies have shown that prosociality is strengthened by intrinsic motivation (Grant, 2008). In social networks, norms and group dynamics can shape prosocial behaviours through a process of social contagion, when individuals conform to the behaviours and expectations of their peers (Aral and Nicolaides, 2017). Prosociality can facilitate the social exchange process through trust-building and collaboration (Podsakoff *et al.*, 1997). In business networks, prosocial behaviour often stems from norms of reciprocity and trust, manifesting in activity such as sharing information and offering resources to build social capital (Gulati, 1995; Burt, 2000; Ahuja *et al.*, 2012).

As a result of the subprocess of prosocial enculturation in this study, individuals underwent changes in their behaviour towards others, internalising the norms and practices of the collective group and developing a sense of purpose within the group characterised by empathy, cooperation, and concern for the welfare of others while also enhancing their sense of competence and personal well-being (Deci and Ryan, 2000).

The interpersonal literature acknowledges the key role of family environments in shaping prosocial development through parental modelling, reinforcement, and socialisation practices, with prosocial tendencies often associated with prosocial moral reasoning and social competence (Eisenberg *et al.*, 2013). Similarly one's peers can provide opportunities for social learning and influence prosocial attitudes and behaviours (Carlo and Randall, 2002). In business settings, leadership can play a pivotal role in promoting prosocial behaviours (Brown

and Treviño, 2006) while organisational citizenship behaviour is often impacted by organisational culture and climate, and integral factors such as levels of job satisfaction, perceived fairness and feeling valued and connected to the organisation (Organ and Ryan, 1995). At a group level in this study, prosocial enculturation was influenced by agents of socialisation motivated by concerns for the welfare of others and commenced with the transmission of prosocial norms and values to group members. These agents were initially the tech meetup organisers, who emphasised the importance of supporting attendees who might be shy, or did not have the social skills to easily make new ties, and described having an implicit 'social contract' of cooperative behaviour. Other altruistic practices noted included inviting attendees to bring home unconsumed refreshments.

Over time, as individuals became embedded in this subprocess, they also took on the role of promoting and reinforcing prosocial values and behaviour within the community by actively taking on community work, welcoming and befriending new members, and volunteering to help with the operational details of running the events. A sense of collective social responsibility was developed through actively engaging in these cooperative and supportive behaviours aimed at promoting the common good. Through these experiences, the group developed a sense of collective purpose and prosocial orientation towards their community that shaped their future behaviour in social interactions, and enhanced cooperation.

The findings of this study suggest the organisers and volunteers of the tech meetup played an important role as agents of prosocial enculturation, transmitting norms to attendees (Grusec and Hastings, 2014) through such activity as direct request for help, modelling and reinforcement (Bauer *et al.*, 2007). Similarly cultural artefacts such as the promotional material of the tech meetup, for example the website description of the event as a chance to 'connect with (and learn from) like-minded people… with ample time for socialising' (Waterford Tech Meetup, 2023) could be considered tangible expressions of the community culture and identity (Schein, 2010).

While the enculturation observed in this study was comparable to the closely-related interactive process of socialisation in the way individuals acquired the norms, values and behaviours of their social and cultural context and adapted to their social environment (Grusec and Hastings, 2014) there was a nuanced difference in scope and focus. Rather than learning and acquiring the beliefs and practices of society in general, the cultural norms, values and behaviours which were learned, internalised and enacted by participants referred specifically to the socio-cultural

milieu of the specific tech meetup context, such as volunteering at events, welcoming and supporting new members. Through the subprocess of prosocial enculturation, individuals thus developed an adaptive interpretation of the tech meetup community and acquired a heuristic guide for effective participation (Poole, 2003), or formed a cognitive scheme of cultural norms and expectations that would guide their perceptions and behaviour as they initiated new relationships. Over time, adhering to this guide shaped their sense of cultural identity as a distinct member of the community, supporting research which suggests that tactics such as welcoming newcomers in business settings and promoting social integration contribute to a sense of belonging and commitment amongst teams (Morrison, 1993).

Identified subprocess 3 – Social belonging

Gardner et al. (2000) describes the need to belong as a pervasive human motive that influences a range of cognitive, emotional, and behavioural responses. When belongingness needs such as a sense of connection, acceptance and inclusion go unmet, it can arouse a social hunger comparable to physical hunger for food-relevant stimuli.

The subprocess of social belonging identified in this study is particularly driven by the need for, and experiencing of, affiliation, friendship and acceptance on the part of the individual actor, and also influenced by inclusivity, shared characteristics, interests and values, which foster a sense of cohesion and camaraderie amongst the collective group and mitigates feelings of exclusion:

> *"There is always some shared interest. Whether it's tech or just looking after each other and I've been involved with communities in the past that were purely focused on building a community of supports for remote workers. And that's just making sure that if you need to rant about things that are going wrong in the remote space* ((smiles)), *you can do that. And so it's making sure that people are supported in general…"* (Cycle 3, Participant 2).

Social belonging is defined as the subprocess through which a shared sense of belonging and identification emerges through social interactions, characterised by a combination of intrinsic motivations, social behaviours, shared social experiences, and the cultivation of supportive and inclusive social environments.

The subprocess commences with, and is reinforced by, recognition of a sense of not belonging

to, or exclusion from, other groups, followed by individuals taking an active role in seeking out and participating in social interactions, community events, and activities of the tech meetup group. This is often prompted by intrinsic motivations such as the need for friendship, support, or identity fulfillment, or by extrinsic factors such as social opportunities, invitations, or shared interests.

In the literature, supportive interactions and emotional validation are typically recorded in interpersonal settings (Cohen and Wills, 1985) but also observed in workplaces (Rhoades and Eisenberger, 2002), enhancing individuals' sense of belonging and wellbeing. The subprocess 'social belonging' observed in this study was fuelled by social support and acceptance from other members of the tech meetup community, with its welcoming and accepting culture seen to create an environment of inclusivity and inclusive behaviours such as empathy for professional challenges faced fostering a sense of acceptance. At an individual level, the subprocess unfolded as participants experienced a welcome into the social setting of the tech community and become recognised or known by other group members through regular encounters and involvement in socially-situated activities. Participants were seen to engage in behaviours aimed at initiating and maintaining social connections and relationships, such as seeking out social interactions, sharing/ participating in social experiences and increasingly expressing affiliation through verbal and nonverbal cues. Recognition and support received from other community members was seen to bolster the process and strengthen feelings of belonging, with participants experiencing a sense of connection, attachment and inclusion when they perceived themselves as accepted, valued and integrated within the group. This manifested as feelings of warmth, acceptance, trust and emotional support from others.

As it progressed, this subprocess moved towards shared identification and self-categorisation as belonging to the tech community, and achieving a sense of positive distinctiveness and connectedness. The group offered a source of emotional, instrumental and informational rewards that strengthened new relationships and reinforced feelings of belonging. As a result of the subprocess, individuals experienced a change in their self-concept. They began to negotiate a strong sense of identity and belonging as a member of the group, which increased their confidence to integrate further into the collective.

In interpersonal relationships, a sense of social belonging often begins within, and is heavily influenced by, the family system, where individuals form their earliest attachments and social bonds (Bowlby, 1969). Peer acceptance and friendship networks also contribute to a sense of social belonging and identity (Brown, 1989; Rubin *et al.*, 2006). Belonging to peer groups with

shared interests (Hogg and Reid, 2006) and active participation and shared experiences within networks (Lin, 2002) can enhance feelings of connectedness and mutual trust. Subcultural communities can offer individuals a sense of belonging and camaraderie based on shared interests or activities, such as music, sports or other hobbies (Thornton, 1996). At the group level, the subprocess of social belonging identified in this study begins with, and is reinforced by, the acceptance and integration of new members into the social fabric of the group or community. This involved initiating activity such as introductions and efforts to make newcomers feel included and valued through acts of kindness, inclusion and support of fellow members. Individuals integrated into the collective and initiated new social connections and meaningful relationships by participating in ongoing group activities and shared experiences, which fostered a sense of continuity and collective memory. This promoted unity and solidarity amongst the collective group, which manifested as feelings of camaraderie and shared identity. Over time, the group experienced stronger bonds of trust and changes to its collective identity, with members exhibiting higher levels of investment in, and commitment to, the group as they distinguished it from other social groups by contributing their time and effort to its well-being and objectives.

Social belonging is closely intertwined with an individual's shared social identity, often derived from affiliations with family, friends and social networks in interpersonal relationships (Leary and Baumeister, 1995; Tajfel and Turner, 1986) and work teams or departments in organisational settings (Ashforth and Mael, 1989). In this study, integral to the subprocess of social belonging was a sense of becoming, or creating a personal history in the context of the tech meetup community (Wenger, 1998).

5.2.4 The social interaction space

The social science literature describes how individuals typically begin interpersonal relationships in such informal or semi-formal settings as the home, at school or college, at workplaces, in bars, at parties, online and numerous other places, with physical proximity, or propinquity, recognised as an important force in relationship initiation (Parks, 2017). The literature on place-making and urban design within urban innovation districts (Chapter 1) notes how social and public spaces make people accessible and provide opportunities for face-to-face interactions and shared experiences in business relationship building (Oldenburg, 2001).

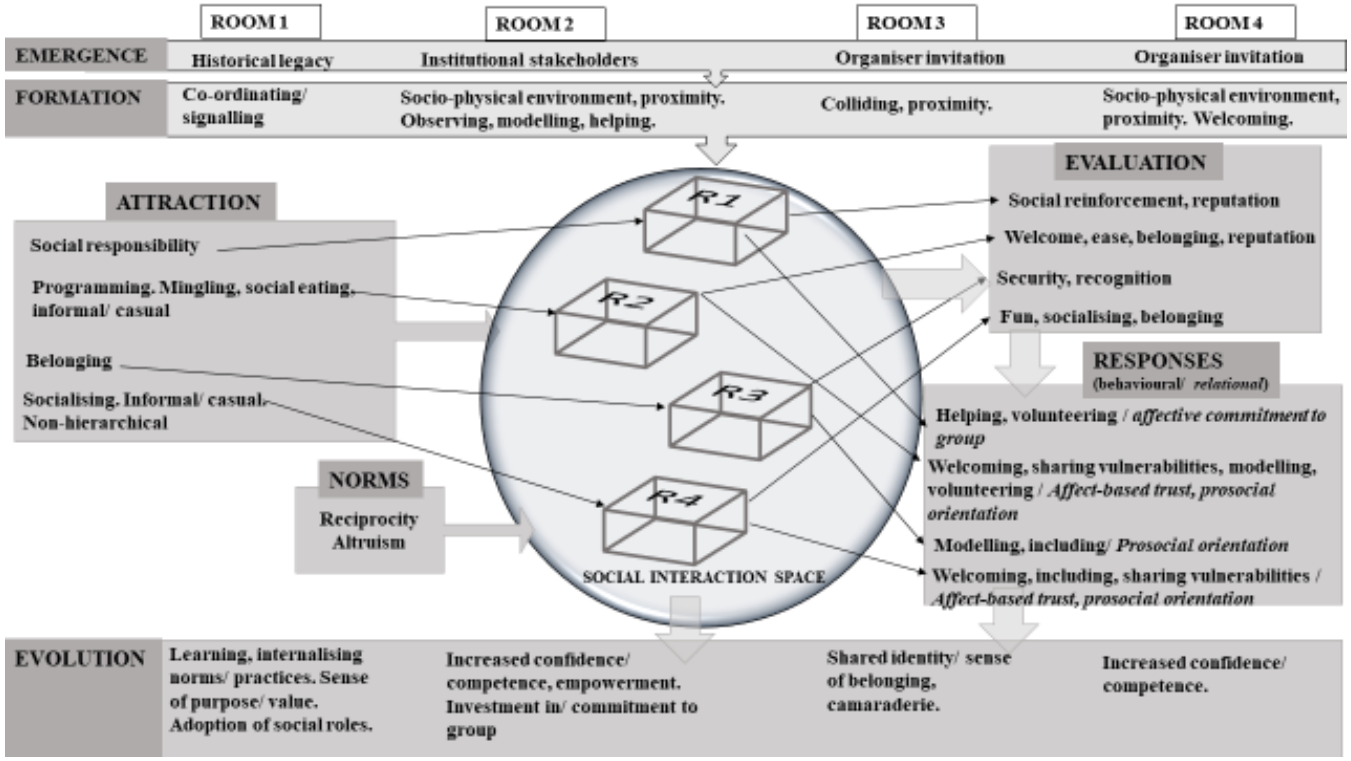
This study investigated the interactions that occurred within four separate but interconnected metaphorical rooms, grouped as the study's social interaction space, where people came

together regularly to interact, communicate, engage in social activities and meet new contacts. Aside from providing opportunity for meeting new contacts, the rooms were found to play an important role in shaping social norms and behaviours during social relationship initiation by providing contexts for social learning, cultural exchange and peer influence. Over time, participants associated these metaphorical rooms with increased well-being and resilience to social anxiety, and they were found to be crucial in facilitating social connections, fostering community cohesion and shaping collective experiences, thus enhancing community cohesion and identity. This formed the basis for the third proposition of this study:

> **Proposition 3:** *Relaxed, welcoming and informal social interaction spaces in which social relationships are initiated are enhanced by prosocial attitudes and behaviours, voluntariness, favourable social conventions and hierarchies, and the use of artefacts linked to collegiality and fun, leading to effective communication and community-building and the enabling of new social ties.*

Investigating whether, and how, the social interaction space might have shaped relationship initiation dynamics in this study necessitated a shift in how we consider the metaphorical rooms: from static, spatially-bound entities defined by physical attributes and spatial configurations, to dynamic and evolving environments impacted by human agency, ongoing interactions amongst individuals and groups, environmental factors and temporal dimensions that facilitated interpersonal connections and fostered community cohesion (Figure 24). This process-oriented perspective, not typically seen in the literature in the context of interaction spaces (Hernes, 2014), was facilitated by the study's qualitative methods, with the lived experiences, practices and meaning associated with the social interaction space elucidated through both interviews and author observations.

Figure 24 - A process view of the study's social interaction space



Room 1 – Organisers' WhatsApp group

Room 2: Tech meetup

Room 3: Walk to bar

Room 4: the bar

Source: created by author

Emergence of the social interaction space

The organisers' WhatsApp group was the first room to emerge in the study, and its emergence was influenced by the historical legacy of a previous meetup. The emergence of the second room, the tech meetup space, was strongly influenced by an intervention by institutional stakeholders to operationally support the meetup through the provision of a physical space for the events, and by sponsoring monthly refreshments. Rooms 3 and 4, the walk to the bar and the bar, emerged through an intervention of the organisers to invite attendees to come for a drink and a chat after the tech meetup ended.

Formation of the social interaction space

Once emerged, the rooms underwent a formation process that was strongly influenced by cultural dynamics amongst, and the prosocial behaviour of, the organisers, who engaged in activity aimed at creating a welcoming social setting conducive to positive interactions. This activity was often co-ordinated within Room 1, the WhatsApp group, but played out in Room 2, the tech meetup. Thus Room 1 was initially characterised as an organising space, with the other rooms associated with more informal, spontaneous interactions between individuals. Over time, however, as new organisers entered the WhatsApp group and social bonds developed between participants, this room also became a site of fun, catching-up and the exchange of information-based resources. The formation of rooms 2 and 4 was influenced by the socio-physical environment, such as spatial design, amenities and proximity, as well as the behavioural activity of occupants, with participants first observing and, over time, modelling the behaviour of others who welcomed and befriended new attendees and helped out at organising. The spatial configuration at tech meetups, such as a fluid space between speakers and audience, helped to focus meaningful interactions and create a sense of community. Recurrent casual relational events, such as smiling 'hello', chatting at a refreshments table or walking to the bar with strangers after the meetup (entering Room 3) provided a foci of activity (Simmel, 1997; Feld, 1981; Whyte, 1980) for initial interactions that informed subsequent relations and nascent relationships. Room 3, the walk to the bar, was largely formed through the 'collision' opportunities it created for new contacts to meet, introduce themselves and chat.

Through the lens of social exchange theory, proximity in the 'rooms' allowed early rewards, such as fun and at ease at informal socialising, to be exchanged without the costs of time or effort that might be associated with interacting through formal networking initiatives. The

anticipation of interaction associated with being proximal, knowing the tech meetups would take place every month, may also have increased the likelihood of relationship initiation with others, with many participants describing repeated interactions at consecutive meetups. The interpersonal relationship initiation literature offers an explanations for this, with regular exposure and the anticipation of interacting with someone again often causing people to be more courteous and friendly to each other, and the familiarity associated with seeing someone multiple times increasing the desire to initiate a relationship (Zajonc, 1968).

Attraction into the social interaction space

The four metaphorical rooms attracted individuals through a number of inter-related means, all connected through the voluntary, informal and non-hierarchical nature of the rooms. Individuals were attracted to Room 1, the WhatsApp group, through a self-reported sense of shared social or civic responsibility towards the tech community, and a desire to help that community. Programming of interesting tech-related events and the opportunity to mingle, socially eat and catch up with others in an informal, socially-situated space were key attractors to Room 2, the meetup. The sense of belonging engendered by being invited to walk with, and walking with, other members of the community to the bar was an attracting force to Room 3, while the opportunity to socialise in an informal space and meet individuals from all levels of an organisation was an important attractor to the bar itself (Room 4). Common to all rooms was that individuals felt self-motivated, rather than mandated by their organisation, to occupy the interaction space. Thus the voluntariness of the rooms characterised them as 'open fields' (Murstein, 1970), where the choice of whom to interact with was intrinsically rewarding. This differentiated them from the 'closed fields' of workplaces or more formal networking events such as 'speed networking', where people are expected to interact, often based on the roles they played or their place in the hierarchy of their organisation.

Dress code and social conventions within rooms 2-4 guided views and attitudes of those who entered the rooms, contributing to the perception that the meetups and trip to the bar afterwards were relaxed and open in nature, which in turn influenced interaction behaviour and helped to cultivate an openness within the rooms towards new ties. This link between a preference for informal dress codes and social interactions reveals an interesting connection between participant perceptions about clothing choices and comfort levels when meeting new contacts. Rather than dress acting as a form of symbolic communication to convey personal brand and influence how an individual was perceived in professional networks (Fairhurst and Sarr, 1996;

Johnson and Lennon, 2017), the preference amongst participants for informal and comfortable clothes was not so much an expression of who they are, but rather who they are not (Freitas *et al.*, 1997), which is individuals who they consider to engage in structured, formal networking activity. The preference for casual attire was seen as an example of participants' search for acceptance, belonging and identity within this nascent community and a reaction to not feeling they 'belonged' elsewhere, at formal, professional events. Using an informal dress code, such as wearing clothes they felt most comfortable in, or not feeling compelled to wear make-up, protected them from psychological harm within their socio-cultural environment and increased their confidence to interact with others. Thus the wearing of informal attire instilled participants with a type of social power (Roach-Higgins and Eicher, 1992) that positively impacted their interactions.

The informal dress code of the meetups was also associated with perceptions of approachability (Johnson *et al.*, 2014), with suggestions that it lowered social barriers by eliminating hierarchies, making individuals appear more accessible and friendly (Sebastian and Bristow, 2008) which could, in turn, positively influence social interactions. For example, the more collegiate dress code supported the diversity of the meet-up make-up, from students to experienced professionals.

The findings raised interesting insights into the use of artefacts in Room 2, namely particular types of refreshments, as both an attractor into the room and also a contextually-dependent communication and community-building tool. The serving and consumption of pizza and drinks at tech meetups provided opportunities for individuals to connect, share experiences, and build social networks, as well as being symbolically linked to collegiality and fun. In the tech industry, particularly in startup culture, there has been a tradition of providing free or easily accessible food to employees. Pizza, with its convenience, cost-effectiveness and universal popularity, has often been a staple in these environments. Academic studies on the intersection of pizza and the tech community are rare, though some attention has been paid to Amazon's "two-pizza teams," a small autonomous team that can be fed by two large pizzas, which are thought to instil a sense of ownership amongst members (Denning, 2019). Amazon's agile approach has been adopted by many tech organisations, and the sharing of these pizzas is considered to create a casual atmosphere that encourages crucial collaboration and brainstorming.

The author's field notes from meetup observations show how the sharing of pizzas emerged as a notable symbol of connection and intimacy, fostering a sense of unity and belonging amongst attendees and thus influencing the initiation of relationships. The physical act of sharing pizza facilitated communication and social interaction, providing context for attendees to come together at the meeting point of the refreshments tables and share experiences, thus strengthening early social bonds. On being asked about this in subsequent interviews, several participants referenced the Amazon "two pizza teams" in positive terms, suggesting the role of pizza in expressing the cultural identity of the tech community and reinforcing a sense of belonging and connection to that sub-cultural community. However the key point to emerge was how sharing pizza evoked positive emotions. The activity generated a sense of intimacy amongst individuals, creating a feeling of physical and emotional closeness. The physical activity of sharing pizza – such as holding the pizza box while another person picked up a slice - promoted feelings of friendliness, reciprocity and co-operation, with this mutual act of support often prompting introductions and encouraging conversation and open communication, which provided the foundation for social bonding.

This finding supports previous scholarship on the multifaceted role of shared meals and communal eating in the provision of an interactive space symbolising belonging that acts as a positive enabler of new social ties (Giacoman, 2016; Fischler, 2011; Mennell *et al.*, 1992). However the symbolic, communicative, cultural, and emotional dimensions of pizza in this study raise new and valuable insights into the affective qualities of commensality and the potential to introduce different forms of social eating to support interactions and social bonding and facilitate the circulation of ideas in nascent business networks. The value ascribed by participants to the serving of pizza, following the action research intervention to introduce it at tech meetups, points to its importance to them as both providing an interactive space but also symbolising a sense of belonging and shared identity (Butler and Fitzgerald, 2010). For the tech meetup participants, eating pizza – a staple of the tech community – signified that they are very much one of the people with whom they ate (Sobal, 2000).

Normative rules of exchange within the social interaction space

A basic tenet of SET is that relationships evolve over time into trusting, loyal and mutual commitments (Cropanzano and Mitchell, 2005). In order for this to happen, parties must adopt

and abide by normative rules of exchange in their behavioural activity. Generally, these rules originate in reciprocity or negotiated rules, as would typically be seen in economic transactions. The former is thought to allow for greater levels of trust and commitment between individuals than negotiated rules (Molm *et al.*, 1999).

Interdependent exchanges in this study involving mutual and complementary arrangements (Molm, 1994) lacked a specific time-frame for the return of the favour and particularly involved the exchange of socioemotional benefits that emphasised the needs of the other party (Clark and Mills, 2012). While data analysis found evidence of both 'social' and 'economic/ opportunistic' transactions between participants in what was essentially viewed as a social relationship, the majority of those statements fell into the 'social' category (19 references across 16 interviews, compared to seven references across three interviews in the 'economic/opportunistic' sub-category).

These long-term oriented social exchanges were found to be rooted in the subcultural norm of the tech meetup community (Gouldner, 1960), in that new members were welcomed, introduced and engaged with in the four metaphorical rooms, with the group collectively engaging in interpersonal interactions to ensure new attendees felt included in group activities. The receiving party (these new meetup attendees) was seen to respond to these interactions, and the welcome they received, by initially engaging in small talk. Over time, this interdependence was seen to encourage cooperation, as these new attendees were seen to adopt and mirror the initiating behaviour of those who had welcomed them by welcoming other new attendees in a reinforcing cycle that engendered personal obligations, gratitude and trust (Blau, 1964). Thus reciprocity, which suggests that individuals are inclined to respond in kind to the actions of others, presented as a social norm (Gouldner, 1960), with those who attended the tech meetups feeling obliged to behave reciprocally. For instance, individuals were seen to offer information or support to other members of the tech community as a means of establishing goodwill and laying the foundation for future interactions (Cropanzano & Mitchell, 2005). At the group level, this positive reciprocity orientation (Perugini *et al.*, 2003) was seen to influence both behavioural choices and outcomes by causing individuals to become committed to the group (Blau, 1964). Thus reciprocity in this study was both transactional but also an adopted norm influenced by cultural orientation (Gouldner, 1960), with a high exchange orientation (Clark and Mills, 1979) towards positive reciprocity (Uhl-Bien and Maslyn, 2003) observed amongst new group members who were eager to be accepted into the collective.

SET posits that individuals engage in social interactions and initiate relationships based on the expectation of receiving rewards and minimising costs, which shapes their behaviours during the initiation phase as they strive to maximise outcomes within their social exchanges (Emerson, 1976; Blau, 1964). This is based on the assumption that social interest is anchored in self-interest, with individuals seeking out partners with whom they anticipate interaction will prove rewarding, and calculating the degree to which they find a potential partners' attributes attractive. However an under-explored norm of social interaction which emerged in this study was the idea that individuals initiated action not out of self-interest but out of the interest of the collective group.

Blau (1964) describes philanthropy as an indirect social exchange, while Meeker (1971) proposes altruism, or social responsibility, as an additional key exchange rule. This lesser-discussed norm of social interactions was found to guide the choices made during interpersonal exchanges in this study, with individuals willing to engaging in interactions for the good of the broader local tech community.

Altruism is considered the basis for some socially acceptable activities such as volunteering or charity work (Piliavin and Charng, 1990). However it is a multidimensional concept that refers to a broad reason of motives that cause people to help others (Wilson, 2015). Altruistic acts in this study were sometimes direct, as in between two actors, but predominantly indirect, benefiting the welfare of the broader community. They tended to be reciprocal in nature, (Ballinger and Rockmann, 2010), in that individual actors undertook actions to the advantage of the community with an implicit expectation that they, as a member of that community, would benefit. As such, the altruism seen in this study was not so much a 'true altruism' but more a beneficial, symbiotic behaviour that provided longevity amongst the members of the social group (Trivers, 1971), with the expectation of future positive encounters over time that could result in beneficial returns. The costs, or risks, of this altruism were low in comparison to the potential net gain, usually involving individuals behaving in a welcoming and friendly manner at tech meetups, and helping out with organising the event.

Evaluating interactions within the social interaction space

Drawing on insights from SET, individuals were seen to assess or evaluate their early interactions within the social interaction space based on the rewards and risks associated with

the activity, and the benefits they had experienced to date, with intrinsic rewards such as fun and welcome manifesting far more frequently than extrinsic rewards, such as new business opportunities.

Individuals feeling comfortable in a social situation was the earliest, and most prevalent, reward associated with this reciprocal behavioural activity. This psychosocial support first emerged as a potential reward during the 'Deliberation' phase, when individuals recognised their discomfort at previous events and actively sought out alternatives. When participants described their interactions in the metaphorical rooms, it became clear that the comfort experienced, particularly in rooms 2 and 4, was enjoyed and appreciated as an intangible reward with high particularism and a low concrete value, regarded as symbolic and of important significance to receiving parties (Cropanzano *et al.*, 2017; Foa, 1974). Empathy and altruism from the collective group were important resources in facilitating that comfort, reinforcing feelings of ease and relaxation that created the conditions for introductions and interactions. This supports the view that intangible benefits which are highly particularistic and symbolic are exchanged in a more open-ended manner (Cropanzano and Mitchell, 2005). Over time, it became evident that this transfer of emotional support contributed to group cohesion and perceptions of a community developing.

An additional potential reward which first emerged during the 'Deliberation' phase was the search for belonging within the tech meetup community, often accentuated by feelings of exclusion from other business or start-up communities. This feeling of connectivity and belonging was boosted by the non-hierarchical nature of the social connections formed through the tech meetups, acting as a source of knowledge and information that individuals felt they might not have access to in a more formal, hierarchical workplace setting, for example walking to the bar (Room 3) and chatting in the bar (Room 4) with individuals they admired for their professional achievements. The gifting of food or drinks in rooms 2 and 4, particularly the introduction of pizza as a refreshment, was another reward that added to a sense of belonging. Finally, there was an element of strategic self-presentation at play in rooms 1 and 2, with individuals describing how helping to support the workings of the tech meetup, and the broader tech community, could benefit their professional reputation in the longer term.

Socioemotional benefits resulting from situations when an individual acquires resources that increase self-esteem and tackle social and esteem needs have been shown to be an important predictor of outcomes (Shore *et al.*, 2006), often making an individual feel valued or treated

with dignity. However, there is no consistency in the literature regarding whether both emotional and economic types of benefits are equally important for the parties in relations, or the relationships between types of resources and the type of relationship (Cropanzano and Mitchell, 2005). The findings of this study suggest that socioemotional benefits outweigh economic benefits during the early process of relationship initiation, and that actors who benefit from socioemotional benefits during the early stages of relationship initiation will, in turn, reciprocate by contributing this resource or reward to new actors.

> **Proposition 4:** *Socioemotional benefits outweigh economic benefits during the early process of social relationship initiation, with informal social interactions bringing forth affect-based trust through the sharing of vulnerabilities, and volunteering seen as a collective act of social group membership and belonging associated with an increased sense of personal efficacy and empowerment.*

Responses within the social interaction space

In the tradition of Cropanzano *et al.* (2017), responses in this study which brought about change in the social interaction space can be divided into relational, or the interpersonal constructs that operationalised relationship quality, such as trust (Lewicki *et al.*, 2006; Schoorman *et al.*, 2007), commitment (Meyer and Allen, 1991; Bishop *et al.*, 2000) and identification (Mael and Ashforth, 1992); and behavioural, which measured the behaviour of actors, such as prosocial activity (Vandyne *et al.*, 1995). While behavioural responses were instrumental, and can be defined in terms of their intent, relational responses were a more open-ended and emotional construct that can be viewed by their effects (Cropanzano and Mitchell, 2005).

Trust plays a central role in relationship initiation according to SET, serving as the glue that binds parties together and facilitates cooperation and exchange. Trust encompasses perceptions of reliability, integrity and benevolence, which are essential for reducing uncertainty and fostering confidence in interpersonal interactions (Schoorman *et al.*, 2007). Trust in this study appeared with a willingness of actors to be vulnerable to another individual by sharing their own vulnerabilities, such as the positive initiating action of sharing stories of the challenges faced as a tech entrepreneur. This was done in anticipation that the individual would reciprocate with a positive behavioural response by sharing their own vulnerabilities, particularly in rooms 2 and 4. This affect-based trust (Lewis and Weigert, 1985) accelerated interpersonal closeness by connecting individuals on a shared difficulty or pain point. Thus sharing vulnerabilities was

an important antecedent to interpersonal trust that tended to occur more in an informal, socially-situated setting than might be seen in traditional, formal networking environments.

Commitment, considered vital in adding value to the initiation of a business relationship (Cann, 1998), revolved around the willingness of individuals to invest their time and energy into supporting the workings of the tech meetup group (Room 1) and becoming a part of it (rooms 1-4), both because they recognised the importance of initiating and strengthening relationships with others but also because of a prosocial orientation towards the collective group. An affective commitment (Meyer *et al.*, 1990; Shore and Wayne, 1993) to the collective tech meetup community was seen to be boosted by positive initiating actions, such as experiencing and observing the prosocial activity of others whilst being welcomed and befriended on arrival into rooms 2-4. Previous studies have found that commitment can be a predictor of prosocial behaviour in organisations (Reichers, 1985). In this study, the affective commitment that developed towards the group through repeated interactions positively impacted social interactions.

As positive initiating actions increased relational responses, increased levels of trust and commitment generated positive behavioural responses amongst participants, enhancing the likelihood that individuals would behaviourally respond in kind to the treatment they received. This cooperative and helpful reciprocal behaviour, going beyond the role of a tech meetup attendee to someone who actively provided constructive contributions to the collective, could be considered a form of citizenship behaviour (Katz, 1964), a discretionary, individual extra-role behaviour typically studied in organisational settings that promotes the effective function of the group (Organ, 1988). Actions consistent with citizenship behaviour are prosocial (Brief and Motowidlo, 1986) and often involve volunteering and helping others (Bateman and Organ, 1983). Altruism directed at specific individuals is seen as a key category of organisational citizenship behaviour (Smith *et al.*, 1983). The prosocial orientation and sense of collective social responsibility that developed in this study manifested in individual behavioural responses such as observing and modelling the behaviour of others who voluntarily helped at events, welcoming and befriending others. These voluntary actions suggested a personal, affective commitment to others reflecting a psychological attachment to the group that was characterised by value congruence and an interest in the welfare of both the other individual party and also the collective group, which increased through repeat interactions over time.

Evolution within the social interaction space

As a result of entering into a welcoming physical and relational space that offered both physical and psychological comfort, individuals capacity to initiate new social relationships within the local tech community was seen to adapt and evolve. Occupation of rooms 1 and 2, the WhatsApp group and the tech meetup group, was seen to offer individuals a sense of purpose and value within the community, as they learned and internalised the norms and practices of the community and adopted new social roles. For example, participants who described helping to tidy the room at the end of the meetup built an awareness of current, and expectation of future, interactions with others who also helped. Over time, the meaning of this interaction shifted from 'helping out' to an indicator of community membership within this familiar shared space, helping to forge a distinct social identity for participants as belonging to this tech community, and having a distinct role to play within it.

Thus volunteering their time and effort to others every month in rooms 1 and 2 created a generalised norm of reciprocity and drove the evolution of individuals' capacity to form new ties within these two rooms through sharing an identity with others, as well as boosting collective investment in the tech meetup community, of which they valued being a member. This supports previous research into the increased sense of personal efficacy and personal empowerment associated with volunteering for individual volunteers (Piliavin and Siegl, 2015) and how an individual's psychological engagement with their volunteering organisation is increased by their pride in their organisation as well as their feelings of being respected within the agency (Boezeman and Ellemers, 2008; Omoto *et al.*, 2010).

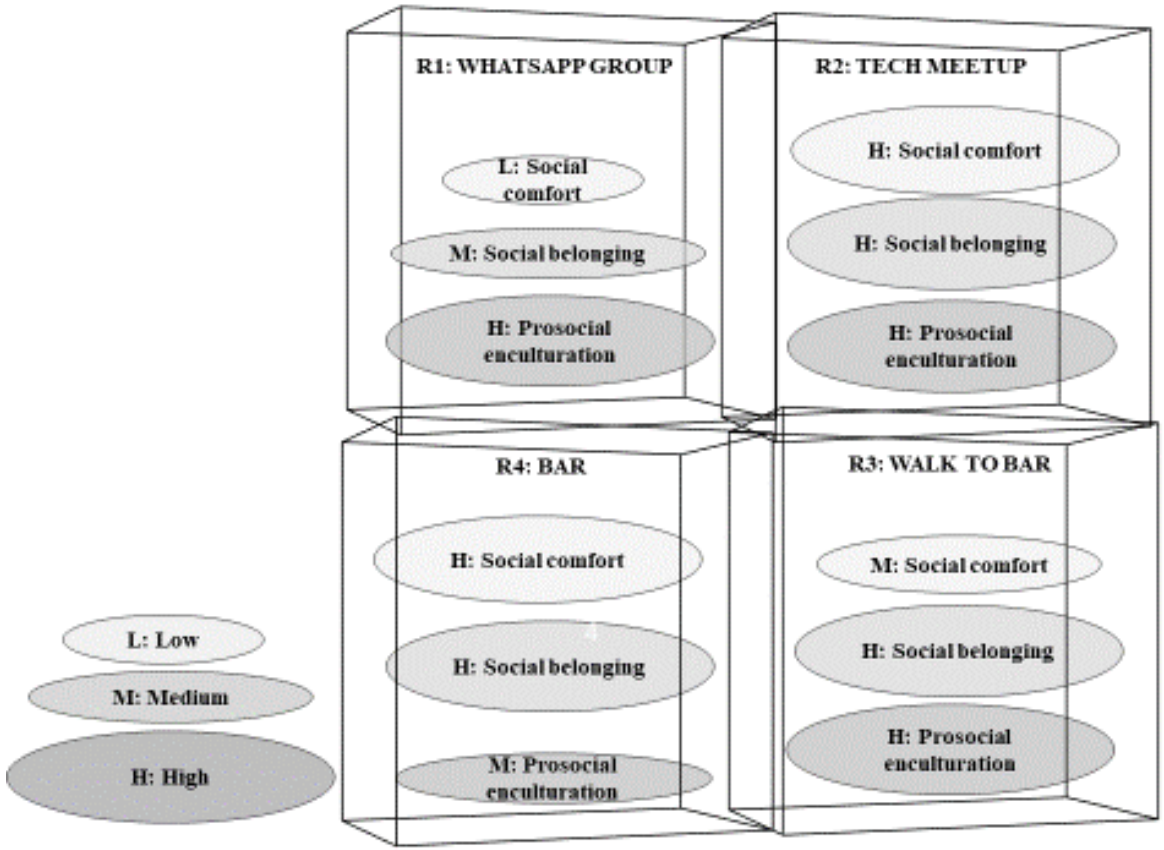
Socialising in Rooms 2 and 4 was associated with increased confidence and competence, with individuals becoming more empowered in their social interactions, while Room 3 was associated with increased collective camaraderie and the development of a shared sense of belonging and identity as a member of the community. Cumulatively, these changes in response to occupation of the 'rooms' was seen to positively impact early social relationship initiation by creating an improved sense of community that encouraged further engagement and involvement in helping and supporting this community.

Three subprocesses of social relationship initiation within the social interaction space

Though physically separate, the four rooms were interconnected, in that interactions that commenced in one 'room', for example at the tech meetup, could continue or be resumed in another, for example walking to the bar. Individuals could also occupy more than one 'room' at the same time, with many instances of interactions taking place within the organisers WhatsApp group while people were in attendance at the tech meetup or in the bar.

There was evidence of the three subprocesses in all four rooms. An analysis of the degree of the three constructs in the context of the rooms (Figure 25) revealed a high degree of social comfort in rooms 2 and 4, a moderate degree in Room 3 and a low degree within Room 1. There was a high degree of social belonging in rooms 2-4, with a moderate level in Room 1. There was a high degree of prosocial enculturation in rooms 1-3, but a moderate degree in Room 4. Hence all three subprocesses were present to a high degree only within Room 2 (at the tech meetup itself, the informal, social event which had drawn individuals together in the first place).

Figure 25 - Degree of constructs present in each of metaphorical rooms



Source: created by author

A broad literature base has demonstrated that social contexts shape social relationships and the networks they give rise to. Notably absent, however, is empirical evidence of just HOW that context matters (Doehne *et al.*, 2024). Empirical studies that examine the types of settings in which relationships begin and distinguish the settings in which people meet along dimensions that could have implications for the course of relationship development are rare (Graziano, 2008). By advancing a process-oriented understanding of informal, socially-situated interaction spaces in business relationship initiation that extends beyond their conceptualisation as static entities, this study offers a novel approach to investigating the dynamic processes underlying interaction spaces that extends theory but also serves to inform the design and management of these spaces in practice. This will be of particular interest to organisations interested in creating welcoming and enticing social spaces that promote social interaction. This contribution will be discussed in further detail in the final chapter of this thesis.

5.2.5 Beyond Social Exchange Theory

SET provided this study with a valuable framework for understanding relationship initiation by emphasising the principles of reciprocity, cost-benefit analysis and comparison levels. Applying it to the findings facilitated a systematic approach to explaining motivations, norms and behaviours during the complex phenomenon of social relationship initiation amongst business actors by examining the perceived rewards and costs associated with forming relationships, and the interpersonal dynamics at play as new contacts considered new relationships, and then experienced nascent interactions. It also provided a robust theoretical framework to take a process-oriented approach when examining the social interaction space in which social relationships were initiated.

A number of other theoretical frameworks were considered that offered insights into the emotional experiences and decision-making of individuals during the process of relationship initiation.

Interpersonal attraction theory offered a potential means of understanding the psychological factors that influenced individuals' initial perceptions and preferences for new relationships, such as social proximity through regular meeting at tech meetups, similarity in terms of professional backgrounds, and the way several participants disclosed how they actively sought

out new contacts at the meetups based on their perception of their competence and credibility in the sector, as they represented valuable resources and sources of learning support (Byrne, 1971; Berscheid and Walster, 1978; Berscheid and Reis, 1998).

The importance of social comfort as a key construct of social relationship initiation prompted consideration of uncertainty reduction theory (Berger and Calabrese, 1974) to examine the way individuals engaged in a strategy designed to reduce their uncertainty and increase predictability in new relationships. This was done through information-seeking behaviours such as asking questions, seeking common ground and engaging in self-disclosure to provide information about themselves and encourage reciprocity, establishing a connection based on shared interests or values.

In particular, social identity theory (SIT) (Ashforth and Mael, 1989; Tajfel *et al.*, 1979) was considered pertinent to the intrinsic motivation in business networking identified in this study, in that individuals derive intrinsic motivation from networking when it aligns with their social identity and group affiliations. Entrepreneurs often engage in networking driven by a passion for their ventures, the desire for creative collaborations and the intrinsic satisfaction derived from building meaningful connections (Shane, 2003). In this study, a sense of meaningful belonging within the tech community was seen to enhance intrinsic motivation to engage further in relationship-initiating activities (Ashforth and Mael, 1989). This was motivated by participants' need for social belonging within a community that provided affiliation and a sense of inclusion, following feelings of not they belonged to, or feeling excluded from, other business groups. This manifested in findings from cycles 1 and 2, which showed how participants considered themselves 'apart from' the broader business community and anathema to attending formal networking events in the micro city. Through the lens of both social identity (Tajfel and Turner, 1986) and social categorisation (Turner *et al.*, 1987) theories, this shows evidence of their perception of 'out-groups', to which they did not belong. During Cycle 3, participants were motivated to form a bond with others who shared a similar social identity, who they met at informal, social events (self-categorised as 'in-groups'). This impacted both their interpersonal and intergroup behaviour, with participants maintaining a positive image of the tech meetup group as a community they felt a part of. Participants were more inclined to form connections with those who belonged to similar or compatible social groups, as these individuals were perceived as sharing common values, interests, and experiences (Abrams and Hogg, 1988), demonstrating an in-group favouritism, or showing a preference and positive regard towards members of the tech community over other business groups or networks (Tajfel,

1970). This tendency towards in-group favouritism shaped individuals' perceptions of similarity, trust, and rapport with others based on shared group memberships.

Through the lens of SIT, it could be argued that social categorisation and identification based on salient attributes or characteristics (Terry *et al.*, 2000) served as a basis for comparison during the early process of relationship initiation, influencing individuals' perceptions of similarity, trustworthiness and relational compatibility. Individuals demonstrated a comfort initiating interactions with others who shared a tech background as they perceived them as belonging to the same social category, and thus more relatable.

However, while SIT might have offered insights into how individuals' self-concepts and their negotiation of identity within the tech meetup group influenced their propensity to form connections with others, neither it nor the other theories considered sufficiently enabled an examination of the nuances, or an explanation of the complexity, of two crucial ideas that emerged from the data in this study that particularly related to the significance of context and emotions in social relationship initiation:

i) the rational calculation of socio-emotional risks and rewards in social interactions, and decision-making process about whether to invest time, effort and emotional energy into forming new connections and becoming part of the tech meetup community;
ii) the process of socio-emotional resource exchange at play within the social interaction space as uncertainty decreased in a socially comfortable setting, and how this shaped behaviour such as the sharing of personal information and vulnerabilities and offering of social support, and contributed to the initiation of early social relationships with new contacts.

The next chapter will draw together the main conclusions, implications and limitations of this study, as well as presenting suggestions for further studies.

Chapter 6: CONCLUSION

The theoretical literature within the relationship initiation discourse and specifically in the context of technological entrepreneurial communities is scant on several vital questions. This inductive study set out to investigate early social relationship initiation within a technological entrepreneurial community in a micro city context by answering the following central questions:

> *What are the dynamic subprocesses of social relationship initiation in the context of technologically-focused entrepreneurial communities that originate in informal, social settings, and how do these findings progress existing knowledge? (RQ5)*
>
> *What contextual factors and environmental conditions influence the initiation of social relationships in technologically-focused entrepreneurial communities?(RQ6)*

Congruent with its action research methodology, it combined research-based and practice-based aims and objectives that involved purposefully supporting the creation of a community of technology-focused entrepreneurs in an Irish micro city, and gathering insights about the process. This final chapter demonstrates how this was achieved.

Section 6.1 summarises the research study in the context of the research questions and Section 6.2 the main findings. Section 6.3 explains the significance and implications of the findings in the context of the extant literature. Section 6.4 describes the limitations of the research while Section 6.5 offers directions for future researchers as a follow-up to this study.

6.1 Study overview

This inductive study used practical action research (Holter and Schwartz-Barcott, 1993; McKernan, 1996) in order to bring a process perspective to the foreshadowed research question of 'how' social relationships are initiated in the community, and 'how to' improve this initiation. Qualitative data was collected during three iterative cycles of planning and implementing interventions, analysis and evaluation over a 25-month period in the field, from May 2021 to June 2023. Semi-structured interviews were the main type of data used.

The study was supported by a research enterprise partner, local government authority Waterford Council which, at the outset of the study, conveyed to the author its dual goals of affecting changes in its approach to innovation generation in the micro city through working

with innovation communities, and developing knowledge of the process; and its plans to create an urban based innovation footprint within its new cultural quarter through the development of a start-up-focused innovation building and other innovation-focused initiatives. Waterford Council's plans directly shaped the first research question at the outset of the study, which was answered by undertaking a systematic review and theoretical thematic analysis of the existing literature on the creation of urban innovation districts in the business and management literature. This review identified 'Place', 'Policy' and 'Actors' as the key strategic dimensions of urban innovation districts, and confirmed that relational proximity, local interaction and synergistic relationships are essential components in enhancing knowledge spillover and innovation creation in urban innovation districts.

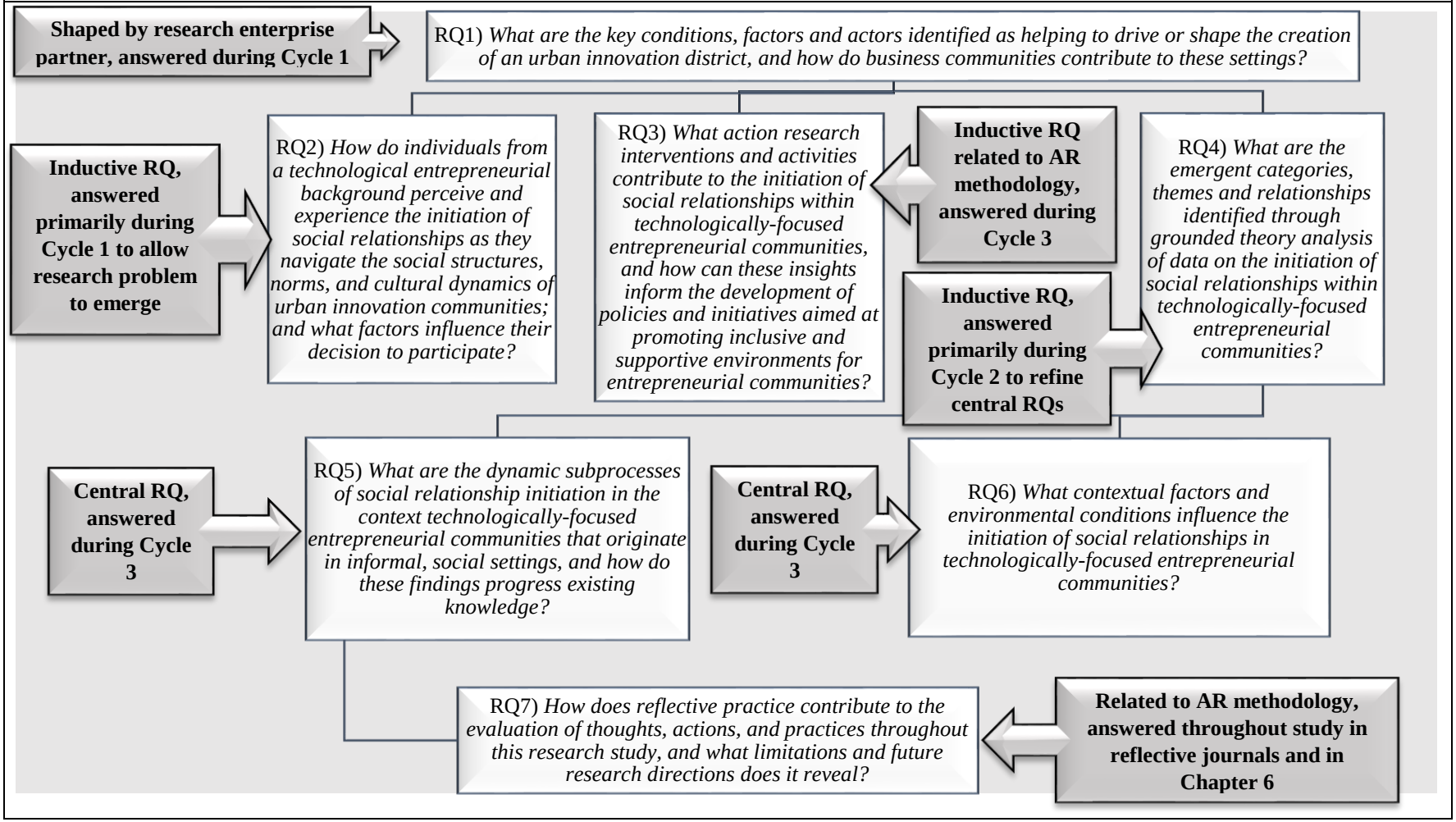
RQs2-6 emerged through an iterative and reflexive process of observation, reflection and engagement with the research context. RQ 2 was primarily answered during the initial exploration and immersion in the research context of cycle 1, though participant experiences remained an important focus during cycles 2 and 3. The author successfully reconstructed participants' perceptions of their relational experiences in the localised setting and the meanings they ascribed to those experiences, as well as exploring potential interventions. Key statements emerging from the data were a perceived lack of interaction and relationship formation within the community (Cycle 1); and that technological entrepreneurs did not feel comfortable at formal, institutionally-led community-building and networking events, and did not find them conducive to making 'authentic' new connections (Cycle 2). This resulted in the most meaningful and key AR intervention to take place during this study (and response to RQ 3): the launch of the monthly tech meetups at the start of Cycle 3 (Appendix F). Identification of this catalysing intervention, and the novel approach of an institutional actor making a decision to resource an informal, innovation-focused social initiative for the target population without seeking to become directly involved in that event, or use it as a means of promotion, offers a new policy approach towards business relationship-building.

Through grounded theory analysis (Charmaz, 2014), the author responded to RQs 3 and 4 to gain a deeper understanding of the complexities and dynamics at play during Cycle 3 interventions, while also reflecting the study's interpretivist emphasis on understanding the subjective interpretations and meanings embedded within the data, which formed the basis for answering RQs 5 and 6. The microinterventions deployed during Cycle 3 also offered valuable insights into activities that might support relationship initiation in social settings. In response to RQ 5, this study developed a model of social relationship initiation amongst business actors

(Figure 22) and identified three inherent, interconnected and context-dependent subprocesses of social relationship initiation which work in synergy to co-create the conditions essential for new social relationships as business actors move from the pre-interaction phase, before direct communication or engagement occurs, to nascent interpersonal interactions at informal, socially-situated events (Proposition 2). It conceptualised this pre-interaction phase as the psychosocial-driven 'Deliberation' phase which, if positively reinforced by readiness, belongingness and active seeking shifts motivational focus and leads to the 'Early Social Interaction' phase (Proposition 1).

Additionally, by taking a process approach to the social interaction space in which these early social relationships are initiated, the thesis offered a novel approach to considering how contextual factors and environmental conditions can directly and indirectly shape the process of early social relationship initiation in technologically-focused entrepreneurial communities (Figure 24). The relaxed, welcoming and informal social interaction space of this study, associated with symbolic, intrinsic rewards, was seen to be are enhanced by prosocial attitudes and behaviours, voluntariness, favourable social conventions and hierarchies and the use of artefacts linked to collegiality and fun, leading to effective communication and community-building and the enabling of new social ties (Proposition 3). The social context was hugely important to this study, with informal social interactions linked to socioemotional benefits that outweighed perceived economic benefits and contributed to the emergence of trust and an increased sense of personal efficacy with the creation of new social ties (Proposition 4).

Figure 26 - Summary of approach to research questions



Source: created by author

6.2 Study contribution

6.2.1 Theoretical contribution

The study's first contribution to knowledge, albeit a minor one in the broader scheme of the thesis, is an analysis of the major themes that intersect all three urban innovation district literature categories. The findings suggest that cities should consider the use of targeted start-up policy and interventions and development of physical spaces and events that enhance relationship-building to distribute innovative activities and facilitate the transfer of the codified and tacit knowledge that drive innovation (Faems *et al.*, 2005). This will be of interest to academics and policy-makers who are interested in creating the internal and external conditions in which an innovation district and urban knowledge community can thrive. The second, associated, contribution is identifying a number of potential research gaps regarding the network ties of the actors charting the boundaries of innovation networks within these districts, the processes of interaction involved in knowledge production between them (Acuto *et al.*, 2018), the sharing and exchange of ideas and skills (Kayanan, 2021) as they work and socialise, the governance, policy and planning arrangements necessary to ensure the best interests of stakeholders, shareholders and the district as a whole, and the identification of a need for further empirical work to investigate interactive behaviours between key actors.

The first main contribution of this study is the development of a conceptual model of social relationship initiation amongst business actors (Figure 22) that captures the essential dimensions and dynamics of the phenomenon under study. The model provides a nuanced understanding and reveals novel insights by identifying two distinct stages, 'Deliberation' and 'Early Social Interactions', suggesting that actors must move through the first stage in order to commence the second. At both the individual actor and also the group or community level, the model identifies the key behavioural activity conducive to social relationship initiation, the rewards and risks assessed during the process, and the change that occurs which facilitates the initiation of new social relationships.

The second main contribution is the empirical identification and elucidation of three previously unexplored subprocesses of early social relationship initiation amongst business actors within the model, further enriching understanding of the mechanisms and dynamics of the phenomenon. These new subprocesses expand the scope of existing models and frameworks,

offering new avenues for exploration and investigation into how they contribute to relationship initiation and development.

The third main contribution relates to the context of the study, namely conceptually distinguishing the earliest interaction settings in which people meet for the first time along the dimensions that could have implications for social relationship initiation amongst business actors. The study identified four separate but interconnected metaphorical 'rooms' in which social relationship initiation occurs and took a process view (Figure 24) of how the rooms came into being, and shaped social norms and behaviours during social relationship initiation. This key contribution repositions social interaction spaces as dynamic and evolving environments crucial to facilitating social connections, rather than static and spatially-bound entities. The significance of the three main findings of this study will be discussed in Section 6.3.

Finally, this study responds to calls for empirical studies of interactions in business relationships incorporating real-time and interaction-related data sources (Ford and Håkansson, 2006; Halinen and Mainela, 2013; Rocca, 2013; Guercini *et al.*, 2014). It makes a novel methodological contribution by conducting multi-site action research as a conceptually distinct variant of action research implementation within the four 'rooms'. Traditionally, action research is carried out in a single organisation (Reason and Bradbury, 2001), or at multiple distinct sites observing different groups of participants (Butterfoss *et al.*, 1993). Less has been written on how to conduct AR across multiple cases (Fletcher *et al.*, 2015), and rarer still are empirical studies of single cases using multiple sites involving the same group of participants. Novel to this study was the scope of four transition spaces, or 'rooms', with the author conducting the action research concurrently from 'inside' each of these four rooms. This provided rich insights and led to greater coverage in a naturalistic environment.

6.2.2 Practical contribution

The deep embeddedness of the author in the research setting facilitated open communication with both local government and innovation-focused actors to identify and execute interventions aimed at solving a 'real-world' problem' (Coghlan, 2019) reported by research enterprise partner Waterford Council and also described by research participants during Cycle 1 interviews: feelings of a 'disconnection', or lack of interaction and engagement, amongst local technological entrepreneurs. Grounded in the principles of action research, the study makes several practical contributions by generating contextually-relevant, actionable insights

informed by empirical evidence related to how this problem was tackled, in order to support the initiation of new social relationships within the community.

Networking initiatives play a crucial role in fostering collaboration, innovation and economic development within local business communities. During the review of urban innovation district literature (RQ1), the author noted how institutional actors often attempted to strengthen collaboration within these districts through such policy interventions as fiscal incentives, dedicated administrative structures and the provision of amenities extending beyond the conventional office setting to promote spatial proximity and stimulate social interaction and knowledge exchange (Arauzo-Carod, 2021; Esmaeilpoorarabi *et al.*, 2018b; Morisson, 2019). The author also came across multiple examples of formal private firm and local government-funded business networking initiatives in innovation regions and neighbourhoods (Nathan, 2020), such as conferences, seminars and trade shows, as well as acknowledgement of the value of innovators interacting at socio-cultural sites in the generation of informal, social networks (Zukin, 2020b). However the review discovered an absence of empirical studies that consider influencing interventions which cumulatively impact policy, place and actors in the shaping process of innovation districts, with studies often confined to generic interventions applicable to all districts that do not take into account localised socio-cultural context or characteristics. Before this study took place, there was no other empirical action research study that the author is aware of which captured a 'real world' example of Triple Helix actors making an explicit policy intervention to support the operationalisation of innovation community-led informal events in a social setting during the creation of urban innovation districts without the direct involvement of, or promotion by, Triple Helix actors. Hence the study makes a practical contribution by offering new empirical work that identifies, and assesses the impact of, a context-specific intervention that acted as a catalyst by providing social encounters and reinforcing the community, thus building a platform for enhanced business relationships.

The main action research intervention undertaken in this study involved the research enterprise partner resourcing an informal, innovation-focused monthly social event without seeking to become directly involved in that event, or use it as a means of promotion. This action was a direct response to a clearly expressed preference from the target population (at the end of Cycle 2) that the event be community-run and not managed or branded by institutional organisations. This offers a fresh perspective to policy-makers in urban areas on the criteria for selecting a potential intervention to enhance relationship-building amongst business actors, and supporting the development of innovation-focused communities and initiatives within these communities.

Though social settings provide a multitude of opportunities for fostering mutual understanding and empathy during relationship building (Morgan and Hunt, 1994), social relationships can be difficult assets for private organisations to manage (Aarikka-Stenroos *et al.*, 2018). The study's acknowledgement of the situational factors of social relationships through the conceptualisation of the 'social interaction space' in which engagement occurs adds to knowledge on how socialising can impact peer friendships amongst professional contacts (Sias and Cahill, 1998). Identifying levels of the subprocesses of social relationship initiation within the four distinct 'rooms', and the key activities within these rooms, will be especially valuable in guiding stakeholders to exploit the potential of these spaces and the activities therein more efficiently by breaking down formal barriers and fostering a relaxed atmosphere that encourages spontaneous interactions. For example, the positive response to introducing pizza at tech meetups could help inform the design and implementation of interventions that involve introducing different forms of social eating to support interactions and promote open communication and ice-breaking at events. This will be of interest to managers and organisations interested in developing targeted strategies and interventions at events that facilitate relationship formation.

While there has been considerable effort made to understand how various online social channels shape a participatory culture in the technological sector (Storey *et al.*, 2016; Barua *et al.*, 2014), less attention has been paid to offline social interactions (Sharma *et al.*, 2022). The research context of this study played an important role metaphorically but it also generated an important practical contribution in the context of technological communities. The empirical evidence that participants often found the socialising element of the tech meetups – such as the refreshments during the interval or going to a bar after the event – of more value than the subject matter of the meetups themselves challenges previous thinking (Sharma *et al.*, 2022). This, coupled with the discovery of the subprocess 'social comfort' in social settings, has significant practical implications regarding what makes an event popular among the technological community. It will assist organisers to plan future tech meetups and increase participation. In the longer-term, the findings could be built upon in future studies to better understand the mechanism of building technological communities in offline settings.

Finally, while the focus of this study was the individual level and data collection ceased in June 2023, the author continued her involvement with the event and participants after this date, noting the emergence of business relationships amongst several attendees. This opens up the

potential for future studies, and new directions in the research, including a multi-level analysis that considers impacts and outcomes at a network and organisational level.

6.3 Study significance

Although business relationship initiation is an area of increasing interest to B2B marketing researchers (Valtakoski, 2015; Edvardsson *et al.*, 2008), it is still an unclear and not particularly well-documented phase of relationship development (Aarikka-Stenroos *et al.*, 2018), with the majority of understanding to date related to how relationships are sustained (Gummesson, 2002; Håkansson, 1982). Similarly, while the interaction approach considers interpersonal interaction integral to business exchange, as business is inseparable from the personalities, experience and attitudes of the individuals involved (Håkansson, 1982), the personal interactions required to exchange social values (Halinen and Törnroos, 1998) remains a limited area of IMP studies, and the human emotions associated with these one-to-one social exchanges (Andersen and Kumar, 2006) even lesser so.

This study answered two key research questions (RQs 5 and 6, Figure 26) by developing a conceptual model of social relationship initiation amongst business actors, identifying three inherent subprocesses, and taking a process approach to conceptualise the contextual factors, or the 'social interaction space' in which these three subprocesses influence social relationship initiation. This section will consider these three key contributions to knowledge in the context of the extant literature.

6.3.1 A model of social relationship initiation amongst business actors

As discussed in Section 5.1, there has been extensive theorising in both the business and interpersonal literature about how human relationships are formed and evolve, some specific to the type of relationships and others to context and characteristics. However knowledge remains mainly conceptual or – at the most – results from limited empirical investigations (Klimas *et al.*, 2023), with initiation often minimised as the first part of seminal relationship development models. Using social exchange theory, this study adds to the limited research on relationship initiation within existing relationship development models by proposing an empirically grounded model to explain social relationship initiation amongst business actors, and how social bonding through subjective social interaction can encourage relationship

development in the early stages (Wilson, 1995). The findings enhance scholarly discourse by concurring with seminal relationship development models that the earliest stage is characterised by uncertainty and ambiguity as parties navigate a landscape fraught with unknowns, but offers new insights into how the process unfolds.

The study finds that actors take a practical approach to initiating new social relationships by first deliberating whether or not to enter into a new physical and relational 'Social Interaction Space', where connections might be formed and then, later in the process, regularly assessing the value of staying within this space compared to leaving (Thibault and Kelley, 1959; Ring and Van de Ven, 1994). In doing so, it identifies a new yet critical juncture during relationship initiation not typically acknowledged in the business literature, the 'Deliberation' phase, wherein the foundation for future interactions and relational trajectories is established.

The extant relationship development literature suggests that the earliest evaluation of business relationships involving mutual benefits and similarity (Morgan and Hunt, 1994; Anderson and Narus, 1990) typically occurs after initial exchanges have occurred, or pre-interaction based on past experience (Ford, 1980; Dwyer *et al.*, 1987) or personal reputation (Larson, 1992). Previous studies have acknowledged a pre-relationship stage or phase, when partners first hear or gain knowledge about one another (Heffernan and Poole, 2004) and search for signs of trustworthiness and social reputation (Abosag and Lee, 2013). However the findings of this study challenge previous IMP thinking (Valtakoski, 2015; Mandják *et al.*, 2015) that initiation corresponds with Dwyer *et al.*'s (1987) and Wilson's (1995) awareness and exploration, and search and selection phases.

The earlier, internal psychosocial act of 'Deliberation' identified in this study that impacts an actor's willingness and desire to commence first social interactions with others differs from previous thinking in that is affective-based, often influenced by historic personal experience and focused on the intrinsic rewards associated with informal, social events. This supports the view that human emotion is an important variable governing behavioural intention, decision-making processes and interactional dynamics during the initial stages of relationship initiation (Andersen and Kumar, 2006) and adds to the growing but limited research agenda that shines a light on the role of emotions in B2B interactions and decision-making processes (Kemp *et al.*, 2018; Fraboni, 2023).

The study finds that the internal, psychosocial activity which takes place prior to interactions constitutes an important 'propelling' part of the social relationship initiation process (Figure

23) directly connected to affective rewards that enhance personal well-being. If the deliberation is positive, actors start to define exchange and its content within the social interaction space, and assess whether the rewards match their needs identified during deliberation, which increases the individual's initiation capacity. A negative assessment within the social interaction space can result in the process ceasing, or the actor returning to 'Deliberation'. Therefore this study takes a novel approach by proposing 'Deliberation' as an integral part of the initiation process, rather than simply an antecedent of interactions.

While adopting the seminal stages model of relationship life cycle (Ford, 1980; Wilson, 1995; Dwyer *et al.*, 1987) proved useful in delineating this 'Deliberation' as outside of the 'Social Interaction Space', this study does not accept that relationship development occurs in sequential, predictable and irreversible stages. Instead, the model suggests 'Deliberation' as a crucial and deciding first step in the process, after which the process becomes more fluid and iterative (Batonda and Perry, 2003; Plewa *et al.*, 2013; Rao and Perry, 2002) inside the 'Social Interaction Space '. Hence the study proposes a multipath, situational model for the initiation of social relationship initiations that integrates a stages approach with contextually-dependent phases, once interactions commence.

The model supports Knapp's (1978) theory that relationship initiation is often guided by social norms and standards, with limited investment or expectation of returns during earliest interactions that prioritise emotional fulfilment and social support. Thus, although the social relationships formed in this study were between business actors, the earliest relationship-building elements during the 'Deliberation' stage were more akin to interpersonal relationships, such as emotional and social support, possibly due to the socially-situated nature of the new relationships. This suggests the impact of contextual setting on the dynamics of social relationships, and the importance of creating an autonomy-supportive setting which increases intrinsic motivation. It also challenges previous thinking on relationship initiation (Aaboen and Aarikka-Stenroos, 2017) by suggesting the importance of actor bonds at the start, rather than the end, of relationship initiation in the start-up context.

Once the actor enters the 'Social Interaction Space', the nascent relationship begins to display characteristics typically evident in the early stages of a business relationship, such as an assessment of benefits, coordinated and collaborative activity and cooperation (Anderson and Narus, 1990), such as sharing information, making an effort to support events and a commitment to shared values (Morgan and Hunt, 1994) relating to the prosocial orientation

towards the community, which increased commitment levels. This assessment, and its importance to sustained interactions, reflects the complex and unpredictable nature of social relationship initiation. During this phase, the findings support the literature which suggests that personal values and similarities are particularly important during the earliest interactions, when uncertainty exists (Abosag and Lee, 2013).

6.3.2 Three subprocesses of social relationship initiation

Business relationship initiation is considered a manifold process comprising multiple process elements and involving various personal and organisational actors and other entities that can contribute to that process (Aarikka-Stenroos *et al.*, 2018). Personal relationships within these business relationships are considered both a resource between actors and a vital link that binds actors together (Nahapiet and Ghoshal, 1998). The author agrees with previous studies that business relationship initiation is a multi-phase process (Aarikka-Stenroos *et al.*, 2015). This study creates new process-minded knowledge by identifying three distinct but related subprocesses, with separate activities and unique characteristics, which are vital to starting a new social relationship. Synthesising the individual-level subprocesses with group-level dynamics provides a holistic perspective that enriches understanding of how interpersonal dynamics shape community cohesion. This approach helps to elucidate how each of the three subprocesses encompass 'need awareness', a 'searching' process, early interactions and the negotiation of norms as important precursors of social bonds. It also demonstrates how attraction to belonging to a collective can spur individuals to engage in relationship-building behaviour, and how third parties, such as the tech meetup organisers, can play a crucial role in triggering or facilitating the dyadic initiation of new relationships (Mandják *et al.*, 2015).

Identifying how each of these subprocesses shapes the 'need' and 'search' for a new partner, holds important implications for understanding how and where crucial relationship elements such as trust (Doney and Cannon, 1997), commitment (Morgan and Hunt, 1994) and resource dependence (Anderson and Narus, 1990) come into play. For example, the discomfort recognition experienced during the subprocess 'social comfort' was seen to be directly connected with a mistrust associated with historic experience of attending formal, institutionally-run networking initiatives. Hence this study identified mistrust as both a consequence of historic experience but also an antecedent of social relationship initiation that shapes the 'search' element (Wilson, 1995). Similarly the observation of prosocial behaviour

during the subprocess ‘prosocial enculturation’ reflects Dwyer et al.’s (1987) ‘awareness of partner existence’, with indirect reciprocity (Axelrod and Hamilton, 1981) appearing as a result of observing and learning this behaviour. The self-disclosure of personal information (Altman and Taylor, 1973) during ‘social comfort’ and norms identified, learned and ultimately adopted during both ‘prosocial enculturation’ and ‘social belonging’ mark the ‘matching’ and establishment of an initial relationship, when trust begins to emerge (Larson, 1992). The ‘social belonging’ sought by actors corresponds to Levinger’s (1980) recognition of ‘initial attraction’ as the first phase in informal affective relationships, associated with a growing sense of attraction or curiosity prompting a desire for deeper connection. The attraction identified in this study was not a physical attraction between actors which influenced first impressions (Berscheid and Walster, 1974), however, but more of an attraction towards belonging to a distinct community and gaining insider status.

Previous studies have associated comfort levels in new relationships with closing a deal, mutual understanding and the contact’s pleasantness (Witkowski and Thibodeau, 1999). A rarely acknowledged challenge in research on the formation of professional connections is that actors find early interactions unpleasantly instrumental, transactional and thus inauthentic (Rossignac-Milon *et al.*, 2024) and are ambivalent towards instrumental networking, despite recognising the benefits of being well-connected (Kuwabara *et al.*, 2018). Identification of the subprocess ‘social comfort’ holds particular relevance for this small but growing body of literature into how initial interactions impact social relationship initiation amongst processionals, such as how participants in this study felt more comfortable discussing non-work topics during initial interactions (Martin *et al.*, 2022). Perceptions of a ‘shared reality’, where individuals felt a sense of fun, ease and comfort in their interactions (Rossignac-Milon *et al.*, 2021) thus became a crucial element of the ‘social comfort’ subprocess that impacted relationship initiation.

6.3.3 Social Interaction Space

Seminal works have identified proximity, which facilitates initial contact (Levinger, 1980; Granovetter, 1973), as a key factor influencing relationship formation. The business relationship literature acknowledges the importance of the micro environment in the early stages of relationships (Hastings *et al.*, 2016), with the spatial arrangements and features of physical interaction spaces shown to shape the dynamics of social interaction (Elsbach and

Pratt, 2007). Chapter 1 described how socially-embedded interaction spaces in urban innovation districts serve as fertile ground for the emergence of new relationships, as individuals or entities interact, exchange information and negotiate social bonds. However, rarely seen in the context of relationship initiation is a process-oriented perspective of these interaction environments.

This study identifies informal, socially-situated sites of interaction as an 'initiation contributor' to relationship initiation (Aarikka-Stenroos *et al.,* 2018) because they create a sense of ease and security amongst actors that facilitates first contacts. However, rather than view the locations in which interaction took place as static, this study took a novel approach by conceptualising an intersubjective 'Social Interaction Space' that played an important role in determining actors' relationships with each other based on their social reality (Latané and Liu, 1996). Adopting a process perspective to this space allowed for a comprehensive exploration of the temporal dimension of this space as it came into being, and the crucial micro-level actions, reactions and interconnected events therein that shaped social relationship initiation. It also helped to identify pivotal elements within these spaces that exerted influence on dynamics and outcomes, such as the voluntary, community-initiated way in which rooms 3 and 4 came into, the social comfort experienced by being welcomed at tech meetups (Room 2), the sense of belonging and connectedness created walking with other members of the community to the bar (Room 3) (Oldenburg, 2001), the sense of identity associated with the organiser WhatsApp group (Room 1) (Twigger-Ross and Uzzell, 1996), or how and when social norms such as reciprocity and altruism became embedded within the rooms. Consideration of the levels of the three identified subprocesses in the metaphorical rooms (Figure 25) supports research which suggests that individuals are more likely to engage in open, spontaneous communication when they feel relaxed and at ease in comfortable surroundings (Russell and Snodgrass, 1987).

The findings add to the body of literature that explores the social exchange processes during interactions in informal settings (Auld and Case, 1997). They create new knowledge about the cultural expectations and sociocultural meanings that interaction spaces acquire through active and engaged participation within them (Lentini and Decortis, 2010), and how the social functions of these spaces can impact interaction (Nova, 2005). This offers a new direction for studies of relationship initiation by considering the way business actors use space to support social interactions.

6.4 Study limitations and challenges

While inductive studies are valuable for exploring new phenomena and generating rich insights, several limitations relating to both the tangible circumstances of this study and also its research design presented. These are acknowledged and addressed below in order to enhance the rigour, credibility and relevance of the findings, thus contributing to the advancement of knowledge.

6.4.1 Theoretical limitations and challenges

Limited research on the topic

A lack of longitudinal and particularly action research studies that examine the processes of dyadic business relationship initiation, particularly in a social setting, and the potential moderating or mediating factors involved, was encountered during this study. A shortage of robust empirical evidence potentially impacted the development of clear research propositions as the lack of a strong theoretical foundation may have resulted in the study's findings lacking depth and coherence, limiting interpretability. Additionally, the lack of prior research made it difficult to identify appropriate AR interventions for investigating the research question effectively. This was mitigated by adopting an exploratory approach with semi-structured interviews in order to explore the topic in depth and uncover any nuances and complexities that may not be captured in the existing literature, and adopting an iterative approach to data collection and analysis to allow for flexibility and responsiveness to emerging insights and the iterative development of RQs based on emerging patterns and themes. Thus the author embraced the opportunity to generate new ideas rather than being constrained by existing theories or literature during early coding.

Data saturation

In the absence of predefined hypotheses, achieving theoretical data saturation was difficult to ascertain, particularly given the limited sample size and data collection period. This presented as a limitation in that it potentially affected the scope and depth of the study. There is a possibility that further insights may have emerged, had data gathering continued for longer, or the sample size been increased. To mitigate this limitation and enhance validity and credibility of findings, the author at all times strived to provide transparency around data collection and

analysis processes, for example providing details of participant recruitment processes (Appendix H) . This assisted in enhancing confidence in research outcomes.

6.4.2 Methodological limitations and challenges

The limitations posed by the action research methodology, along with the steps taken to ensure quality, are considered in Section 3.2.4. Below are two additional potential methodological limitations which arose.

Sample size and generalisability

A total of 48 individuals were interviewed during this inductive study, 15 in Cycle 1, 18 in Cycle 2 (of whom ten were existing participants from Cycle 1) and 25 in Cycle 3. This sample size was relatively small and highly localised, limiting generalisability beyond the study's specific context. The findings may not apply to other situations without further validation, and a larger group, broader populations or different contextual setting may alter outcomes in a future study. The author attempted to mitigate this potential limitation by enhancing the transferability of the findings through the provision of a detailed description of the research context and methodology. Additionally a comparison of the findings with existing literature served to identify commonalities and differences from previous similar empirical works.

Data collection method and participant bias

There is a potential for subconscious bias with qualitative interviews, in that interviewees' perceptions are, by their nature, subjective and therefore subject to change over time according to circumstance (Alshenqeeti, 2014). This opens up the potential for bias and attribution, particularly regarding the positive and negative forces affecting social relationship initiation (Cycle 1). However the subjective views of participants were considered important qualitative data in the context of this study, rather than a potential limitation, aligning with the study's interpretivist paradigm of emphasising social context and interest in the subjective realities of participants.

6.4.3 Empirical limitations and challenges

Contextual constraints and participant access

Accessing research participants and engaging them during the research process posed some challenges, particularly during cycles 1 and 2, when COVID-19 pandemic restrictions in Ireland prohibited in-person meetings and public gatherings. This presented as a potential limitation to the representativeness and validity of the data. There was concern that this limited access might impact the creation of trust and rapport with participants, and place limitations around supporting the building of a technological entrepreneurial community (PO1). The author navigated this by maintaining flexibility and adaptability in research design and implementation at this time, for example the contingency plan of using online platform Zoom to interview participants, which allowed the observation of non-verbal gestures. The author took care during online interviews to create an atmosphere conducive to trust and rapport-building, such as ensuring she conducted interviews in a private space.

Time constraints and scope

The time constraints of this study may have limited the scope of the study and depth of analysis, resulting in an incomplete or superficial exploration of the research topic and potentially leading to incomplete findings. Once data gathering commenced, the author made use of specific tools to help in organising the research process and optimising the use of time and ensuring focus, for example interview guides (Appendix L). The author also paid particular attention to refining and then prioritising the emergent research questions that specifically investigated the phenomenon of social relationship initiation (RQs 5 and 6).

The study generated a relatively high volume of data over a two-year period, from May 2021 to June 2023, when data collected ceased. This created potential for methodological errors and posed the risk of the author becoming overwhelmed by, and absorbed with, data organisation, at the expense of thorough analysis (Myers, 2019). As a mitigation, qualitative data analysis software programme Nvivo was used to help organise the data. The author undertook specialised training in Nvivo as part of her PhD studies, to maximise its benefits during the study. This ensured data was easily searchable and full use could be used of linking memos, thus facilitating an accurate and transparent data analysis process (Welsh, 2002) and an organised and effectively-managed research study.

6.4.4 Analytic limitations and challenges

Author-induced bias

The highly contextualised setting of the study and active involvement of the author introduced the potential for researcher bias, with criticism levelled at both action research and grounded theory for the embeddedness of the author and their agency in the construction and interpretation of data (Olesen, 2007). This presented as a potential limitation that risked the overlooking of alternative explanations or competing interpretations of the data. It was particularly of concern during time periods when the author was required to negotiate and adopt multiple roles during Cycle 3 that simultaneously straddled the action (as a volunteer helping to organise the tech meetups) and the research (data collection at the meetups). This posed a threat to the quality of the data collected, and accuracy, validity and significance of the findings.

To mitigate this bias, scrupulous reflection-in-action (Schön, 1995) was engaged in throughout the study, including a detailed reflection upon the role of the action research both prior to and throughout fieldwork (sections 3.2.3 and 3.2.4) and ongoing reflection regarding the approach taken to data collection and analysis (tables 3 and 4). Reflection on observational data gathered, such as at tech meetups and within the organisers WhatsApp group, was particularly helpful in validating findings and thus enhancing credibility. Reflective journaling and digital memos created a detailed audit trail of the research process and analytical decisions, as well as the rationale and justification for those decisions. The digital memos, in particular, ensured a clear and transparent presentation of findings.

Inductive approach

Conducting data analysis before reviewing the literature on the phenomenon may have inadvertently introduced confirmation bias to the study. The absence of guidance of prior literature caused the author to doubt her ability to interpret the findings and question whether she was rediscovering empirical findings that were already established in the literature. It might have caused the author to overlook alternative explanations or conflicting evidence from the literature and instead interpret findings to align with preconceptions, thus leading to missed opportunities for theory development and limiting the authors' ability to develop novel insights without a comprehensive understanding of existing literature. To offset this, towards the end

of data analysis during Cycle 3, an inductive-abductive approach was employed to iteratively generate and refine interpretations of the data, thus moving from an inductive exploration that identified patterns and relationships without imposing preconceived categories to then considering explanations for the observed patterns from the literature. This approach allowed the author to develop nuanced interpretations that were grounded in the data while also considering alternative perspectives and theoretical frameworks. The literature review also synthesised findings from several other fields, such as sociology and psychology, to provide a broader conceptual framework for the study and add to the coherence of the findings. Future studies might benefit from undertaking a literature review at the start of the study in order to contextualise findings within existing theoretical frameworks and identify gaps in knowledge.

6.4.5 Ethical limitations and challenges

Ethical considerations, such as ensuring participant confidentiality, informed consent and respect for autonomy, can present as a potential challenge in inductive action research, particularly when navigating power dynamics within the research setting. To overcome this, the author strove to uphold ethical integrity by establishing clear guidelines for ethical conduct at the outset of the study, seeking input from the university ethics committee and maintaining the highest standard of ethical principles by, for example, obtaining informed consent from participants (see Section 3.7).

6.5 Directions for future research

The starting point for studying entrepreneurship through social networks is considered to be a relation or transaction between two people (Aldrich, 1986), with social contacts often seen as a 'gate-opener' to facilitate the emergence of a business relationship (Batonda and Perry, 2003; Mainela and Ulkuniemi, 2013; Aarikka-Stenroos *et al.*, 2018). This PhD study has gathered a considerable volume of data relating to the exchanges and norms between individuals as new connections were made, and social relationships initiated. However, due to her ongoing involvement with the tech meetup community, the author has continued in the ethnographic collection of data beyond the lifetime of this study. This offers the potential for a multitude of future longitudinal studies both within and beyond the IMP tradition that consider future patterns, variations and trends during the initiation and evolution of social relationships, the social settings in which these relationships emerge, and their impact on collaborative

innovation in micro city environments, as well as the market opportunities and resources that might present as relationships develop, and the potential to study relationships that discontinue or decline. This would permit a more detailed analysis of the relationships between personal interaction and the situational factors identified, and whether some process elements become more important than others over time, thus deserving to become the focus of a future study. The propositions developed during this study could particularly influence debate within this discourse and a list of proposed future research directions connected to these propositions has been suggested (Table 5).

Table 5 - Future directions for research associated with this study's propositions	
Proposition	**Directions for future research**
Proposition 1: Early social relationship initiation is reinforced by a psychosocial act of deliberation linked to the decision to commence interactions and reinforced by readiness, belongingness and active seeking that sees the intrinsic rewards associated with informal, social events shift motivational focus and increase intrinsic motivation.	This study particularly focused on the positive reinforcers that prompted and encouraged individuals to step into the social interaction space in the pursuit of early social interactions and new relationships. Future directions for study should include the validation of this model through empirical evaluation and stakeholder feedback. Another interesting area for future studies would be the negative reinforcers which result in individuals not moving forward in the process, particularly the contextual, intrapersonal psychological and socio-cultural aspects that might influence that decision. This study considers relationship initiation at the individual actor level. Future studies could undertake a multi-level analysis to provide a more comprehensive understanding of the dynamics at play across different contexts and scales, shifting analysis to the organisational level (including how an organisation's structures, culture, and strategic goals shape relationship initiation and how norms influence initiation behaviours) and the network level (including the role of external reputation or positioning in initiating relationships). This study particularly focused on individuals who indicated readiness or active-seeking behaviour towards initiating new relationships. An interesting area for future studies would be the process inherent in business relationships formed in a social setting as a result of being pursued by someone interested in forming a new connection with them, and a comparison of the findings with this current study. In addition, the strong negative opinions regarding networking events during cycles 1 (Constrainers) and 2 (Inhibitors) presents as an interesting area for future study regarding the negative assumptions and responses of those who chose to not attend meetup events; and their characteristics.

Proposition 2: Social comfort, prosocial enculturation and social belonging are three inherent, interconnected and context-dependent subprocesses of social relationship initiation which, when working in synergy, co-create the conditions essential for new social relationships amongst business actors to begin.	This study identified a contextual connection between the subprocess social comfort and the specific community under study, made up of technological professionals. It drew parallels between how sharing and collaboration play a crucial role in shaping interactions within open source communities in the technological sector. An interesting area for future studies would be to investigate if social comfort exists as a construct in other sectors, and whether its properties are the same. The findings of this study relate to innovation actors in an Irish micro city, and the complex interaction of cultural and social factors as they were subjectively construed and negotiated. Additional research is needed on the culture-specific mechanisms that might account for individual differences in prosocial behaviours in other international contexts. Such studies could focus on the ranges of sociocultural contexts that function as learning environments for actors. This would add to knowledge on how specific cultural environments are socio-culturally constituted, and the implications for social interactions during relationship initiation. The contextual setting of this study limits its generalisability. Future research should continue to explore the factors that shape individuals' sense of belonging during relationship initiation within different social environments, considering the dynamic nature of social interactions and identities.

Proposition 3: Relaxed, welcoming and informal social interaction spaces associated with symbolic, intrinsic rewards are enhanced by prosocial attitudes and behaviours, voluntariness, favourable social conventions and hierarchies, and the use of artefacts linked to collegiality and fun, leading to effective communication and community-building and the enabling of new social ties.	This study focused on positive responses to the social interaction space within the contextual setting, and the impact this had on interactions. An interesting area of study would be to focus specifically on negative responses, and on individuals who chose not to enter the interaction space as a result of these responses, or not to continue interactions within that space based on an assessment or rewards and risks. The voluntary, informal and non-hierarchical nature of the rooms within the social interaction space proved significant in this study. An interesting area for future study would be to use an experimental design and introduce additional 'rooms', some of which were not voluntary, and to observe and compare interactions in the voluntary and non-voluntary rooms amongst the same group of participants. The link between dress codes and social interactions in this study revealed an interesting connection between participant perceptions about clothing choices and comfort levels when meeting new contacts which could provide a future direction for research on how attire impacts interactions and the initiation of business relationships in different contextual settings. This proposition raises interesting insights into the use of artefacts and consumables during relationship-building events and the affective qualities of commensality. It opens the potential for future studies to investigate and compare how the type of consumable served during social eating impacts engagement and potentially acts as a social catalyst for interactions. Individuals in this study were found to engage in symbiotic altruistic acts towards the community with an implicit expectation that they, as a member of that community, would benefit in the future. A further direction for study would be an examination of whether commitment levels to the community, and the community's longevity over time, are impacted by a social exchange actually occurring, or not.

Proposition 4: Socioemotional benefits outweigh economic benefits during the early process of social relationship initiation, with informal social interactions bringing forth affect-based trust through the sharing of vulnerabilities, and volunteering seen as a collective act of social group membership and belonging associated with an increased sense of personal efficacy and empowerment	This study considered four key 'rooms' in which social interactions occurred. However there is a possibility that interactions amongst participants also occurred in additional 'rooms' unbeknownst to the author which might have impacted outcomes. Future studies could search for, compare, and analyse the interactions within any 'hidden' rooms of interaction, paying particular attention to the rewards and risks associated with these rooms, the behavioural and relational responses, and the positive changes associated with them that might impact social relationship initiation. This study took a novel methodological approach by conducting action research from inside four distinct but interconnected 'rooms' within one overarching 'social interaction space'. Future studies that take a similar methodological approach could treat each 'room' as a single case study, using it as a sub-unit of analysis and making cross comparisons of the rooms to account for variables, and how these might impact outcomes. The study was limited in generalisability in that it was limited to the technological community. Further research is required to validate if the findings related to the social interaction space applies to other business actors or communities. Such work could compare and contrast the findings of this study.

Source: created by author

Due to her ongoing involvement with this technological community, the author has had the opportunity to attend, observe and gather data at a number of creative, collaborative events, such as social hackathons and codefests, social coding events that bring together technological professionals to improve upon or build new programmes. Creativity is an important asset in inter-organisational innovation (Çokpekin and Knudsen, 2012) that helps teams flexibly respond to competitive environments, rapidly changing markets and new technology needs through the introduction of new knowledge, ideas, solutions, processes, or products (Amabile *et al.*, 1996; Johannessen *et al.*, 2001; Gundry *et al.*, 2016). However creativity in collaborative innovation has not been empirically conceptualised as a process inherent in collaborative innovation, nor have foundational theory and practice-based approaches been comprehensively researched and developed (Bahemia *et al.*, 2017; Petersen *et al.*, 2003). Due to the author's access to this community, there is a strong potential for further research that takes an ethnographic or perhaps experimental approach to investigating creativity as a process within the collaborative innovation context, identifying what it is, how it works and how it interacts with the other elements of collaborative innovation within technological communities.

Finally, this study lays the groundwork for future empirical studies to consider how the intervention taken at the start of Cycle 3 might influence the shaping process of an urban innovation district in the medium to long term, or the internal dynamics of such an intervention. Such work could significantly enhance understanding of the role and activities of innovation actors as new urban innovation districts are created by offering a fuller account of the human factors affecting district creation.

6.6 Conclusion

This study brings an IMP approach to the 'actor layer'(Ford *et al.*, 2008) of social relationship initiation amongst business actors, which it defines as an *'incipient phase of deliberation, early social interactions and strategic self-presentation embedded in social contexts, including cultural norms and historical dynamics, where the earliest socio-emotional bonds are beginning to come into being'* (Source: author).

It concludes that, amongst technological entrepreneurs in a micro city context, there are three subprocess of social relationship initiation, 'social comfort', 'prosocial enculturation' and 'social belonging', that span a 'Deliberation' phase, before actors meet, and 'Early Social

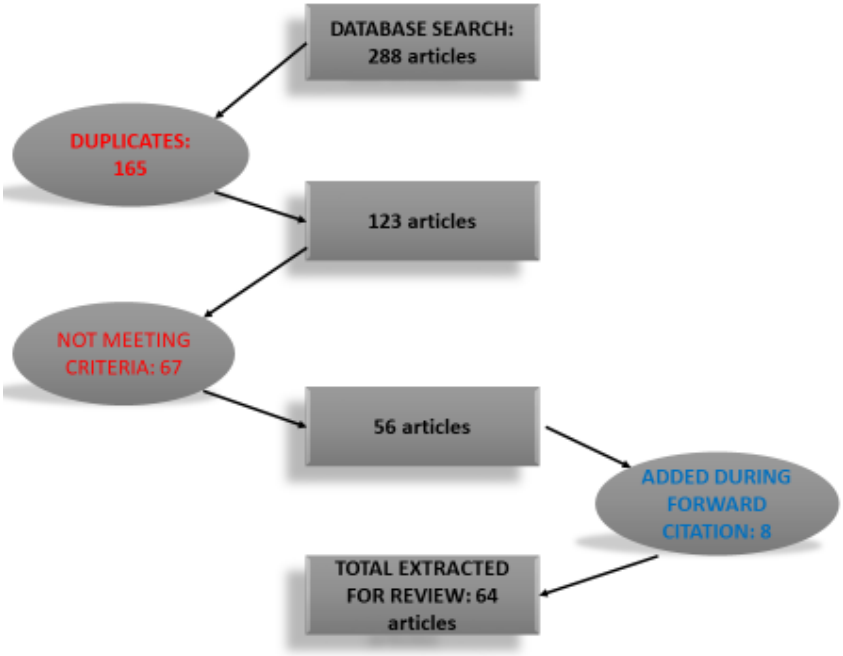
Interactions'. These subprocesses occur in a dynamic, evolving 'Social Interaction Space' and are influenced by a social exchange process which reinforces actors' entry into that interaction space. Inside that 'space', early behavioural activity conducive to meeting new contacts occurs, as well as an assessment of associated risks and rewards of interacting, which influences the decision to continue interactions and remain in the 'space'. Repeat interactions give rise to changes that impact social relationship initiation at both the individual level, such as improvements in actors' confidence interacting with new contacts, and at the group level, such as the emergence of a collective identity. Cumulatively, these contribute to social relationship initiation.

Underscoring the multifaceted nature of the social relationship initiation process, this study sheds new light on the diverse mechanisms and factors at play during social interactions that will be of value to academics and practitioners interested in strategic partnerships and client relations, and relationship initiation and building outside an organisational setting. The findings will equip them to broaden both theoretical understanding and practical application in navigating the intricate landscape of modern business community and networking environments effectively.

Furthermore, recognising the significance of interpersonal and social interactions in business relationship initiation aligns with a broader worldview that prioritises human connection and collaboration in an increasingly digitised world, underscoring the enduring value of face-to-face encounters and interpersonal rapport. Acknowledging this can foster a culture of empathy, inclusivity and reciprocity, thereby laying the foundation for enduring relationships and sustainable business practices.

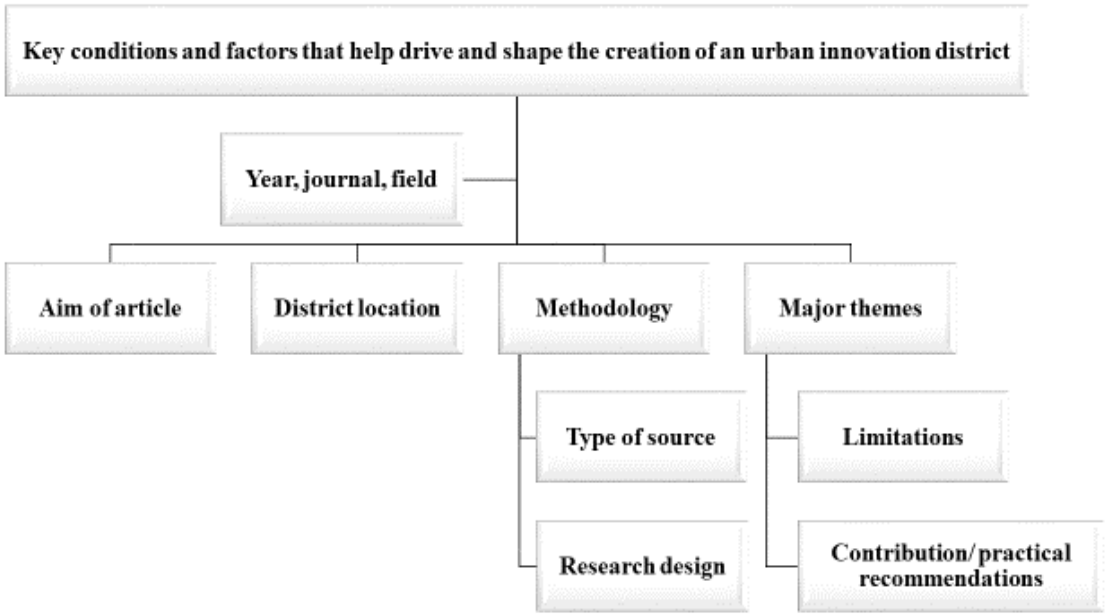
Appendices

Appendix A – Systematic contextual literature review findings



Source: created by author

Appendix B – Literature classification framework



Source: created by author

Appendix C - Key literature on 'Policy' as a strategic dimension of urban innovation districts						
Author (year)	**Major themes**	**Location**	**Methodology**	**Theoretical considerations**	**Limitations**	**Contribution**
Asgari *et al.* (2021)	Anchor approach, with university as innovation ecosystem builder	N/A	Literature review (meta-synthesis analysis, text-mining)	N/A	Does not consider other influencing ideas in shaping processes	Conceptual model for implementation of university-based innovation district
Clark *et al.* (2010)	Relationship between innovation ecologies and regional resilience	81 regions categorised	Empirical study (spatial analysis of inventions that resulted in triadic patents)	Markusen's (1996) industrial districts framework	Use of patents as dataset is incomplete, not all inventions are patented	Innovation district typology based on percent of small firm patents, overall patent rate
Davidson *et al.* (2023)	Aligning innovation objectives with wider societal and environmental needs, urban experimentation	Melbourne Innovation District (MID) City North, Australia	Single case study	Transformative innovation policy (Coenen and Morgan, 2020)	Focuses on COVID-19 pandemic scenario, findings may change in post-pandemic environment	Conceptual framework of urban experimentation processes
Egan (2022)	Ecosystem support organisations supporting nascent high-growth high-tech firms	Houston Technology Center, Texas, USA; Cortex Innovation Community (CIC) innovation district, St. Louis, Missouri, USA	Discussion paper	Entrepreneurial ecosystems (Feld, 2012)	Limited global examples	Measurement framework for making rudimentary need, impact, and cost–benefit assessments of municipal high-growth high-tech entrepreneurship policy
Gianoli and Palazzolo Henkes (2020)	Urban regeneration projects in complex environments	22@, Barcelona, Spain	Single case study	Adaptive governance systems (Janssen and Van Der Voort, 2016); Triple Helix approach (Etzkowitz and Leydesdorff, 1998)	Limited to one single case	Use of adaptive governance framework, bridging organisations and constant feedback mechanisms, in light of existing assets and local advantages
Heaphy and Wiig (2020)	Governance and spatial planning of waterfront districts	Seaport Innovation district, Boston, USA; Silicon Docks, Dublin, Ireland	Multiple case studies	Smart city strategy-making (Coletta *et al.*, 2019; Hollands, 2020)	Only considers waterfront innovation districts	Impact of 'corporate town' of skilled, globally-mobile tech workers on place and heritage
Kayanan (2021)	Deriving profit from entrepreneurial livelihood	Seaport Innovation District, Boston, USA; Silicon Docks, Dublin, Ireland;	Multiple case studies	Place-based economic development policies (Kline and Moretti,	Does not include perspective of tech entrepreneurs	Innovation districts as interim policy measure to secure financial resources

		Cortex Innovation District, St. Louis, Missouri, USA		2014); Florida's Creative Classes (Florida, 2002a)		
Nathan (2022)	Causal impact of a UK tech cluster programme	Tech City area, London, UK	Single case study using microdata in a synthetic control setting	Cluster policies (Porter, 1998)	Lack of clear cluster comparators makes comparison challenging	How 'light touch', market-orientated interventions raise firm and job counts, increase cluster density, but also change area characteristics and cause overheating
Wang *et al.* (2021)	Negative externalities of spatially targeted fiscal incentives	Hangzhou (China)	Single case study	Policy zoning (Lefebvre, 2003)	Bounded rationality of suitability evaluation system, calculation process, use of case limited to just one country	Suitability evaluation index system to assist planners in determining spatial scope during district planning

Source: created by author

Appendix D – Key literature on 'Place' as a strategic dimension of urban innovation districts						
Author (year)	**Major themes**	**Location**	**Methodology**	**Theoretical considerations**	**Limitations**	**Contribution**
Arauzo-Carod (2021)	Amenities and economic-oriented neighbourhood characteristics important for district creation	Barcelona, Spain	Spatial exploratory and econometric analysis of single case	Agglomeration economies (Duranton and Puga, 2004) and Creative Classes (Florida, 2002b)	Limited to one case	Identifies location determinants of high-tech industries at urban level
Charnock and Ribera-Fumaz (2011)	Contemporary strategies to engineer urban competitiveness	Barcelona, Spain	Discussion paper	Social production of space (Lefebvre, 2003)	Sole focus is representations of a produced space; further consideration required of spatial practice	Compactness as solid spatial basis for global competitiveness; importance of coherent and unified governance strategy
Esmaeilpoorarabi *et al.* (2018a)	Role of context, form, function, ambiance and image	One-North, Singapore; Arabianranta, Helsinki; DUMBO, New York; MPID, Sydney	Inductive multiple case study	Knowledge-based urban development (KBUD) (Knight, 1995; Carrillo *et al.*, 2014)	Results based on four case studies; generic indicators don't take into account localised, place-specific characteristics	Preliminary indicators/ framework of indicators of place quality at cluster scale
Esmaeilpoorarabi *et al.* (2018b)	Innovation district activity	Brisbane, Australia	Multiple case studies	Theories of clustering and agglomeration (Porter, 1998; Krugman, 1996)	Based on limited number of cases (3) in same city. Some place-based characteristics difficult to generalise.	Framework for investigating place characteristics of innovation districts
Esmaeilpoorarabi *et al.* (2018c)	Place quality as complex multidimensional phenomenon impacted by quality of clusters' context.	N/ A	Delphi method and analytical hierarchy process	Theories of land use (Porter, 1998) and Florida's (2002a) Creative Classes	Only generic indicators applicable to all innovation districts considered	Multi-scalar framework for evaluating place quality, including indicators at regional, city and cluster levels
Hamidi and Zandiatashbar (2019)	Impact of regional compactness, spatial clustering, urban amenities on number of innovative firms	Medium and large metropolitan areas and metropolitan divisions in USA	Multilevel modelling of available compactness indices	Geography of innovation (Florida, 2002a) and theories of clustering (Scott and Storper, 2003; Porter and Stern, 2001)	Single measure of innovation productivity offered, not generalisable to other measures related	Conceptual framework of variables affecting innovative firm location that examine relationship between urban sprawl,

					to process of innovation such as start-ups	place-based characteristics and innovation productivity
Morisson (2019)	Use of anchor space	Barcelona, Spain; Medellin, Colombia; Paris, France	Multiple case study	Triple helix (Etzkowitz and Leydesdorff, 1998); Knowledge-based urban development (Knight, 1995)	Limited analysis of economic and knowledge spillovers of centres	Innovation centre within districts as a new scale of analysis; importance of start-ups in triple helix arrangement for urban policymakers.
Pancholi *et al.* (2020)	Socio-cultural role of anchor universities in facilitating placemaking, platforms of collaboration and knowledge exchange	Macquarie Park Innovation District (MPID), Sydney; Kelvin Grove Urban Village (KGUV), Brisbane, Australia	Multiple case study	Knowledge-based urban development (KBUD) (Knight, 1995; Carrillo *et al.*, 2014)	Specialised socio-cultural context and context-specific challenges and their internal dynamics not addressed	Collaborative approach by anchor university as socio-cultural network and placemaking facilitator
Taecharungroj and Millington (2023)	Enhancing knowledge and resource sharing through amenities	24 global districts	Density and diversity of districts analysed using Points of Interest (POI) on Google Maps data	Quadruple Helix model (Carayannis and Campbell, 2010)	Not fully representative of all global districts	Categorisation of amenities
Van Winden and Carvalho (2016)	Role of diversity and urbanity	The Digital Hub, Dublin, Ireland; Kista Science City, Stockholm, Sweden; Biocant Park, Cantanhede/Coimbra, Portugal	Multiple case study	Geography of innovation (Florida, 2002a)	Does not explore conditions under which knowledge locations might have positive socioeconomic effects; or how institutional actors interact and make decisions.	Identifies three key drivers of urban knowledge locations and innovative activities
Yun *et al.* (2018)	Relationship between open innovation and architectural design	Macquarie Park, Sydney, Australia; One North, Singapore; Strijp-S, Eindhoven, The Netherlands	Multiple case study	Open innovation (Chesbrough, 2003)	Not generalisable beyond given case studies.	Analytical framework to explore cases of tacit-knowledge-based open innovation

Source: created by author

Appendix E – Key literature on 'Actors' as a strategic dimension of urban innovation districts						
Author (year), '*Journal*', Field	**Major themes**	**Location**	**Methodology**	**Theoretical considerations**	**Limitations**	**Contribution**
Acuto *et al.* (2019)	Accountability and value of municipalities investing in boundary-spanning organisations (BSOs)	Barcelona, Spain; Ruta N., Medellin, Columbia	Review of city case studies	Information ecosystems (Barns *et al.*, 2017)	Limited case-study selection based on geographical spread, availability of data and language capabilities.	Capabilities/ benefits of boundary-spanning organisations
Esmaeilpoorarabi *et al.* (2020b)	Social coherence between knowledge workers and public	Sydney, Melbourne, Brisbane (Australia)	Multiple city case study, using public opinion survey on community attitudes towards engagement	Knowledge-based urban development (KBUD) (Carrillo *et al.*, 2014; Knight, 1995)	Contextual factors not considered; limited number of attributes covered	Mezzo-scale community engagement model that identifies features to enhance public inclusiveness
Esmaeilpoorarabi *et al.* (2020c)	Societal impact on urban and local communities, how general public engages with districts	Sydney, Melbourne, Brisbane, Australia	Multiple city case study using public opinion survey on visitor data	Theories of clustering and agglomeration (Porter, 1998; Krugman, 1996)	Limited number of case studies involving mature districts only	Decentralising across inner-city suburbs improves public engagement
Esmaeilpoorarabi and Yigitcanlar (2023)	User preferences and decision makers' perspectives in planning, design, and development	Kelvin Grove Urban Village (KGUV); Diamantina Knowledge Precinct (DKP); Brisbane Technology Park (BTP), Australia	Multiple case study in single city	Porter's (1990b) Competitive Advantage Theory; Florida's (2002b) Creative Classes	Use of three cases in same city limits generalisation	Identifies similarities and differences between user preferences and decision makers' perspectives
Leon (2008)	Barriers to engagement with international knowledge workers	22@, Barcelona, Spain	Single case study using cognitive cluster analysis	Importance of human capital to innovation (Saxenian, 1996; Florida, 2002b)	Limited to a single city	District more likely to prosper when local governments develop policies and tactics to attract, connect with international workers.
Pique *et al.* (2019a)	Synergies between strategic actors	22@ (Barcelona, Spain)	Single case study	Triple Helix model (Etzkowitz and Zhou, 2017)	Limited to single example	Framework to understand evolution of urban 'areas of innovation' from

						inception to maturity; role of Triple Helix agents
Rapetti *et al.* (2022)	Role, key activities of Triple Helix actors	Porto Digital, Brazil	Single case study	Triple Helix (Etzkowitz and Zhou, 2017)	Limited to single case study. Absence of detailed indicators revealing actual existence and behaviour of supporting actors	Framework of KPIs to track and monitor progress, advances understanding of distinct lifecycle stages
Tan *et al.* (2023)	Informal communication spaces as sites of knowledge spillover, communication	Gaoxin South District, (GXSD), Shenzhen, China	Single case study	Knowledge-based urban development (KBUD) (Carrillo *et al.*, 2014; Knight, 1995)	Limited to one case study, three spatial types	Preliminary evaluation index system of informal communication spaces
Zukin (2020a)	Critical mass of actors required to build urban tech ecosystem, use of discursive, organisational and geographical spaces	New York	Discussion paper	Florida's (2002b) Creative Classes	Writing immediately post-COVID; outlook may change in aftermath of pandemic	Insights into how face-to-face encounters amongst tech workers instil trust and establish social bonds

Source: created by author

Appendix F – Schedule of action research interventions		
Cycle	**Intervention**	**Rationale**
Cycle 1	Open call to community to take part	To access participants; discover their perceptions and experiences of community, networking
Cycle 2	Organisation of meeting of technological entrepreneurs, also attended by research enterprise partner representatives	Disconnect identified amongst community and lack of awareness of regarding planned innovation initiatives
Cycle 3	Launch of monthly tech meetups	Preference amongst community for informal, social events
- **Microintervention 1**	Researcher acted as bridger of relationships at informal, social events, making introductions, initiating conversations	Introversion of some participants
- **Microintervention 2**	Change of post-event socialising venue	Post-event social venue (bar) not conducive to mingling due to seating arrangements
- **Microintervention 3**	Change in operational detail of meetup - introduction of pizza	Negative comments regarding food at meetup

Source: created by author

Appendix G – Excerpts from reflective journal

Wednesday, 16th November, 2022

Last night, I found myself grappling with the multiple roles I hold within the study. As organiser and participant in the tech meetup, I experienced the complexities of managing data collection while ensuring the event ran smoothly.

Being responsible for the logistical aspects of the event places additional pressure on me. As an organiser, I was concerned about timing, participant engagement and the smooth running of the event. My concern is that this logistical focus might have occasionally distracted me from my role as a researcher. I found it challenging to observe participant interactions critically while also coordinating tasks.

To mitigate this in the future, I will try to delegate some organisational responsibilities to my colleagues prior to the event, which will hopefully allow me to shift my attention more freely between the event and meaningful observations. However I need to have more awareness of the importance of balancing my roles.

Wednesday, 13th December 2022

Similar to last month's meetup, I again felt there were moments last night when I was too immersed in the running of the meetup and that this hindered my ability to engage as a researcher. I tried to allocate specific intervals during the event solely for taking notes of observations, by sitting at the back of the room during talks). This worked relatively well, as it provided me with time and space to jot down observations from the talks and also, during Talk 2, about the interval. However I do not have this facility in the bar, so again the layers of complexity of the action research are becoming apparent. One thing that I have to be mindful of is not creating any distance between myself and participants by this action. I need to continue to reflect upon this 'dual presence' and any impact it might have. To this end, I've drawn up some questions that I will continue to consider in the months ahead (captured in Table 4).

Tuesday, 14th February, 2023:

I acted as MC of tonight's meetup, with many of my research participants in the audience. I'm concerned that this could give rise to ethical dimensions and subtle power dynamics. Is there a possibility that my dual role (event organiser and researcher) might have influence how participants engage with the event, and with me. Being the organiser could give me a level of authority, potentially silencing dissenting voices or alternative perspectives. I wonder if some participants felt pressured to only tell me the positive about the event, that my position may impact their willingness to share authentic feedback.
There's also a risk that, as their 'host', they see me as the gatekeeper/ or linked to the enterprise partner. Again, this might make them feel they need to uphold the perceived views of the partner, rather than challenge them. Moving forward, I need to create clear spaces for open dialogue, ensuring that participants feel safe to express disagreement without any fear of consequence. I need to be mindful of any potential power imbalance and remind myself that my role as a researcher requires me to remain open, even in moments where there are perceptions that I might hold authority.

Tuesday, 12th March, 2023:

Tonight's meetup prompts me to reflect on the relationships forming between myself and participants. I have believed from the outset that my ability to form relationships is central to the success of the study, as it gives me consistent access, and acceptance within the community. However building and maintaining these connections does add a layer of complexity. Originally I was viewed as an organiser by attendees, a point of contact, someone responsible for the event's structure and atmosphere, which may have placed me in a position of authority. I noted during interviews how some participants mentioned their expectations around the management of the meetup, which may have initially created a sense of formality in our interactions or power imbalances, affecting how participants engage with me (and with each other!). However, through participation in the social activities, such as going to the pub after the event, I can see more informal relationships emerging between myself and participants. My active involvement, conversations and the craic are allowing me to connect with participants on a personal level and build rapport based on shared experiences. To me, these interactions feel more organic and reciprocal, which is important for fostering trust. For example, participants now regularly share personal stories with me, about their families, careers, hobbies etc. This growing sense of openness is beneficial for the depth of my action research, but also for the meetups themselves, in terms of social cohesion. This blurring of the boundary between researcher and participant is interesting to me but, in the interests of transparency, I think I need to continue to remind attendees of my research during conversations, without them feeling they are being "observed" in an overly formal sense, as the informal nature of the meetups seems to be key to fostering genuine connections.

Appendix H – Participant selection summary, with inclusion and exclusion criteria			
	Cycle 1	**Cycle 2**	**Cycle 3**
Research focus	Participants' experiences and views regarding interaction and their relationships with other business actors within the local technological entrepreneurial community	Participants' experiences and views regarding the meeting organised at the start of Cycle 2 (Appendix J)	Participants' experiences and views regarding interactions at new tech meetup
Technique *[no. of participants]*	Volunteer/ self-selection sampling through open call utilising traditional and digital media, trade magazines, institutional and enterprise partner social media sites (Appendix I) to ensure maximum variation. *[8]* Purposive sampling based on set criteria to neutralise self-selection bias of respondents wielding particularly strong opinions (Bethlehem, 2010) and reach appropriate participants who might not have seen advertisements for the open call *[7]*	Use of existing data set *[10]*. Non probability (snowball) sampling (Jacobs, 2013) based on set criteria *[8]*	Purposive sampling based on membership of tech meetup organiser (EO – event organiser) group *[7]*. Researcher also a member of this group. All EO participants knew each other in a professional capacity before the study commenced, four had been involved in organising the tech meetup prior to the event's abandonment due to COVID-19 pandemic restrictions. All members of this group shared an interest in relaunching the tech meetups and creating opportunity for interaction and engagement in a social setting. Non-probability (stratified based on gender then randomly selected) based on attendance at tech meetups (EA – event attendee) *[18]*
Criteria for selection / *exclusion*	Experience of starting, growing or spinning out a company in the technology sector/ *Under 18 years*	Experience of starting, growing or spinning out a company in the technology sector; interested in providing opportunity for networking and community-building in the city and surrounding areas / *Under 18 years; not operating in the technological sector*	Organiser of local tech meetup (EO dataset) and/ or registered to attend local tech meetup on the relevant meetup.com page, and subsequent attendance of a minimum of two out of three events per quarter (EA dataset)/ *Under 18 years. Those who registered for tech meetups but did not subsequently attend two out of three events per quarter*

Practical / *theoretical* considerations	Limited supply of respondents to the open call. Need to minimise self-selection bias and increase variation in the sample. Access constraints: difficulty locating participants who met the criteria. *Explore problem issue and delineate scope of 'problem' that action research would seek to address.*	Reaching new potential participants in specific population with similar characteristics who meet criteria. *Recruit a participatory community with shared characteristics and/ or a shared practical problem and hence being able to understand one another's worlds (Grzybowski, 2008)*	Ensuring equal representation of male and females, despite the tech meetup audience being 80% male. Ensuring all individuals had equal chance of being recruited. On noticing that females made up approximately 20% of all attendees, the researcher took the decision to stratify the EA dataset cohort based on gender and then applied simple random sampling to both subsets. This decision was taken not to differentiate between males and females in the research, or to compare responses from both, but instead to ensure the overall cohort was representative. Simple random sampling was achieved by taking a full list of participants and randomly selecting individuals using a table of random numbers. The total number of individuals selected in each stratum was proportional to the size of each stratum. *Recruit a participatory community with shared characteristics and/ or a shared practical problem.*

Source: created by author

Appendix I – Press release issued to media for Cycle 1 Open Call seeking participants

'Helping innovation to thrive'
Change-makers sought for new Waterford Council-SETU research study

- Have you experience of starting, growing or spinning out a company?
- Have you ideas about practical actions that could drive new innovation-focused initiatives in our county?
- Could you spare half an hour, to take part in a change-making project aimed at helping Waterford's innovation community to thrive?

Waterford Local Enterprise Office and Waterford Cultural Quarter, in collaboration with SETU, are seeking participants for a new research study which will explore how Waterford's community of innovators can be helped to thrive.
The research is particularly aimed at people who have experience of setting up, growing or spinning out companies and are willing to share their experiences and views on Waterford's innovation ecosystem. Waterford Cultural Quarter is particularly interested in hearing the opinions of entrepreneurs working in digitally-focused cultural and creative-related industries, such as design, content creation, app/ web/ video game development, AR/ VR technologies and UI/ UX.
SETU researcher Michelle Clancy said the project is an opportunity for members of Waterford's innovation ecosystem to share their 'lived experience' and be part of a change-making project focused on taking practical actions to drive innovation activity:
"For this first phase of the study, I hope to speak to people who have experience of setting up, growing or spinning out companies across Waterford's innovation ecosystem, including start-ups, entrepreneurs and disruptors. I'm asking them to take part in a short Zoom interview with me, just half an hour, to share their views – based on their own, lived experience – regarding the gaps and barriers to driving innovation activity and the positive actions that could be taken. Further into the research project, and in collaboration with the research partners, we would hope to implement some of those actions."
The research study is taking place under the supervision of Dr. Eugene Crehan of the Centre for Enterprise Development and Regional Economy (CEDRE) at SETU and Dr. Thomas O'Toole, Head (Dean) of School of Business, SETU.

- If you can spare half an hour to contribute to this research project, please email michelle.clancy@postgrad.wit.ie All information will be treated in the strictest confidence. The research has received approval from SETU School of Business Ethics Committee.

ENDS

Source: created by author

Appendix J – Participant invitation to attend Cycle 2 meeting

Ref. 'Establishing an Innovation Footprint in the Cultural Quarter of a Regional Capital City' - SETU/ Waterford Council PhD research study

Dear XXX,

I hope you are keeping well.

Following your participation in my research study **Establishing an Innovation Footprint in the Cultural Quarter of a Regional Capital City** last year, I'm writing to you on behalf of myself and my research partner, Waterford Council, to update you on Phase 2 of the research, which is due to launch next month.

Having interviewed entrepreneurs like yourself across a range of sectors, the findings of the research suggest there is a lack of relational or networking space specifically for innovators in Waterford. Additionally, it was noted by numerous respondents that innovation is not 'visible' locally, and Waterford's 'innovation story' lacks cohesion. A number of interviewees spoke about the benefits of innovation hubs in providing physical and networking space to support local ecosystems.

Based on these findings, I'd like to share with you some new and exciting news that I hope is of interest:

Waterford Council is currently working to rejuvenate the Cultural Quarter of the city (O'Connell Street and its hinterland) and has been granted significant funding from the Department of Housing, Local Government and Heritage's Urban Regeneration and Development Fund (URDF).

One major project currently in development is the acquisition and renovation of a building in the Cultural Quarter for the purposes of creating an innovation hub. It's anticipated that this building will include a shared space for start-ups and innovators, and also a ground floor public interface area.

As part of my research, I will be working with Waterford Council and Dr. Pat Lynch of SETU's RIKON research group on the planning of this new innovation hub. The initial hope is to bring together a group of local innovators to explore how the building could be best designed to support innovation and facilitate networking, idea-making and the broader development of Waterford's innovation capabilities and capacity.

In bringing together this group, which will be multi-professional and industry-focused, comprising local start-ups, founders, innovators and creators, Waterford Council also hopes to provide a broader opportunity going forward for networking and engagement across Waterford's innovation ecosystem.

The project will start with a kick-off meeting at the **Gallery of Art, O'Connell Street (Cultural Quarter), Waterford, 4-5pm on Thursday, 3rd March** and I'd really love if you could come along?

Richie Walsh, Waterford LEO, Katherine Collins, Cultural Quarter and Dr. Pat Lynch will attend to outline the plans and there will also be an opportunity for discussion amongst the group regarding how Waterford Council and SETU could better work with the local ecosystem to help innovation to thrive.

If you are unable to attend but are still interested in becoming involved with the group, please do let me know and I will keep in touch.

Best wishes and thank you for your interest in this project

Michelle Clancy

Source: created by author

Appendix K – Cycle 2 interview guide design

The following tactics were employed when designing the interview guide:

- The sequence of interview questions moved from the broad (background information questions) to the narrow (their particular experience of formal networking events which they have attended).
- Possible responses were not included in the questions, to offset against any danger of the researcher leading or influencing the response.
- Questions were asked one at a time and multi-part questions were not asked, to ensure the participant was not confused or distracted, and that the interview remained focused.
- Follow-up questions were formulated based on what the individual participant in order to further tease out their opinion (Patton, 2015), eg "Tell me more about your opinion on that".
- A small number of closed, contextual questions were designed to limit the responses to specific facts (eg participant's profession, sector).
- Open questions were used to explore the participant's own views on f networking events they have attended, allowing participants to generate descriptions in their own words. Despite the potential for subconscious bias and attribution with qualitative interviews (Alshenqeeti, 2014; Brown, 2001), the subjective views of the participants were considered important qualitative data in the context of this project, rather than a potential limitation.

Source: created by author

Appendix L – Cycle 3 interview guide

Tell me about yourself and your experience in the technology sector.

Other events

Have you attended networking events before? Tell me about them?
Does the meetup differ from these? How?

Tech MeetUP - pre-event

Where did you hear about the event?
What made you want to go? (What motivated you to attend?)

Event

Tell me about what happens at the event? (including when you arrive, interval)
Who do you attend with? Who do you sit with? Who do you talk to at event? Have you met anyone new through the event?
Did you specifically approach them? Why? How did that go?
Was it a chance encounter?
What did you discuss? Did you connect afterwards (eg online)? Did you directly contact them afterwards? Tell me about that – why?
Did you speak with the person again, at a subsequent event?
Tell me about the speakers and presentations. Are the topics relevant to your career or any projects you're working on?
Did you ever approach the speakers? Why? Tell me about that
Have you met anyone at meetups that you would go to for advice? Has this happened - how often, example
Have you ever discussed a project you were working on, a problem you had with it, an idea you had (eg more experienced person)? Tell me about that…
Is there anyone attending the event that you might seek out or recruit to support a new project or idea of yours? Is there anyone there you might approach for advice in the future? Anyone you would trust with an idea? Anyone attending that you've not yet met but would like to? Will you get a chance to meet them? What part of the event is your most/ least favourite? Why is that? Informal conversations???

Impressions of others interactions

From watching other people attend, who do others sit with, talk to? Have you seen evidence of others chatting about projects, ideas, problems? Who do they go to for advice? Who can they trust?

After event

Do you go to the pub? Why/ Why not? Tell me about what happened there? What do you discuss there? Did you meet anyone new there? With regards to someone new you met, did you stay in touch afterwards? Who reached out first? Why, what reason?

About the meetups

Tell me about the atmosphere at the meetup. Do you feel welcome? What makes you feel welcome? What makes it enjoyable/ fun? Have you ever applied /benefited from things that you have learned at a technology-oriented meetup?
You said you attended because (XXXX) – did this end up happening? Did it benefit you or not? What makes you continue to attend? If someone asked you about the tech meetup, how would you describe it? Would you be recommending it? Why? What features of the meetup do you particularly value? Does it offer something useful that cannot be obtained from other sources? If you could change anything about it, what would it be? Why?

Networks

What best defines a network for you? *Watch out* for the following: ties between them (technical principle); friends on social media (connectivity principle); personal contacts/ friends (biographical principle); people who could be asked for help (trust principle).

What defines a community? Would you think you a member of a tech network or community? Why? Who is in this network/ community? What happens within it? What holds this network/ community together? Why do you stay involved in it?

Source: created by author

Appendix M – Data collection operational details			
Method/ ***source***	**Date/** ***location*** **[duration]**	**Data**	**Gathering method [research instrument]/ PREPARATION/** ***storage***
Interviews/ Individual participant	**Cycle 1:** May-September 2021 **Cycle 2:** February-May 2022 **Cycle 3:** August 2022-June 2023 *Various, included start-up company offices, SETU and also via video conferencing due to public health restrictions* [1-1.5 hour interviews]	**Cycle 1:** semi structured interviews - participants' perceptions of their relational experiences, interactions within local technology start-up community. **Cycles 2**: semi structured interviews - participants perceptions of attending recent meeting and interaction and collaboration that happens at, and as a result of such events. **Cycle 3:** semi structured interviews - participants perceptions of attending tech meetups and interaction and collaboration that happens at, and as a result of such participation.	Audio file recorded on portable dictaphone; later transcribed electronically and printed in hard copy [Interview guide, laptop (for Zoom interviews, portable dictaphone for in-person interviews)] / INTERVIEW DATA TRANSCRIBED USING ZOOM (Zoom, 2023) AND OTTER.AI (Otter.ai, 2023) UNIQUE IDENTIFIER APPLIED TO EACH PARTICIPANT / *Digital files in Google Drive; hard copies stored in locked filing cabinet at researcher's home*
Unstructured interviews/ Individual participant or group of participants	**Cycle 2:** Meeting with participants, institutional stakeholders, 2rd March, 2023 *Waterford Gallery of Modern Art* [2 hours] **Cycle 3:** Monthly tech meetups, second Tuesday of month, 7-9pm, September 2022- June 2023. *Waterford Medieval Museum auditorium* [2 hours]	Field notes recording details of events and informal conversations at events	Initially written into a notebook using Gregg shorthand, later transcribed electronically/ [Hand-written notebooks] / *Hard copy notebooks stored in locked filing cabinet at researcher's home . Digital transcriptions saved in Google Drive*
Observation on digital channels/ ***EO***	August 2022 – June 2023 *Tech meetup organiser group Whatsapp* [Ongoing]	Conversations regarding the organising of meetups	Monthly report of all interactions downloaded two weeks after final interaction related to each meetup to allow capture of relevant post-event discussion/ [Whatsapp] / *Electronic copies saved in Google Drive.*

organising group			
Reflective journal/ *Researcher*	October 2020 – June 2023 *Transcribed at researcher's home* [ten minutes at end of each working day; plus 1.5 hour writing session per week*]*	Researcher's reflections of research process; account of reflection of observations at tech meetups, during informal interviews with participants, digital interactions	Handwritten into a notebook. Relevant sections highlighted manually (colour coded: green – research process; blue: observation/ interactions ate events)/ [Written notebooks, highlighters *]/ Hard copy notebooks stored in locked filing cabinet at researcher's home. Digital transcriptions saved in Google Drive.* *Relevant sections transcribed electronically*

Source: created by author

Appendix N – Data collection protocols	
Rules of engagement	Every effort was made to establish and maintain a warm, friendly manner towards participants, with questions posed in a clear, balanced and non-judgmental way. The setting for individual interviews was always a quiet and private space, where conversations could not be overheard, or interfere with audio-recording. An overt approach to participant observation was taken at all times. For example, when speaking to people informally at meetups, the researcher at all times identified herself as a researcher conducting research into interaction; on occasions where the researcher acted as the event MC, she again introduced herself similarly from the podium and invited any questions from the floor regarding further details about the research. This open approach was taken in order to adhere to the ethical importance of introducing the researcher's presence and purpose.
Interview guides	An interview guide providing a basic set of questions or topics for discussion was drafted, to ensure all relevant areas, including the emerging research questions and objectives, were adequately and comprehensively covered (Lune and Berg, 2017) and enhance the trustworthiness of the study (Kallio *et al.*, 2016). However the researcher brought a degree of flexibility to the order in which these questions were put, to ensure that participants could speak freely and offer in-depth, lengthy responses if they wished, so that conversation tangents relevant to the research question could be pursued, and that clarification questions could be asked based on participant responses (Rubin and Rubin, 2005).
Interview recording	All individual interviews were recorded and later transcribed into a Word document. All Cycle 1 interviews and some Cycle 2 interviews took place using cloud-based video conferencing tool Zoom due to COVID-19 public health restrictions prohibiting in-person meetings at that time. Zoom's ubiquity during and after the pandemic ensured that all participants had the technical knowledge to use the service, and were accustomed to using it in their day-to-day lives. The researcher preferred videoconferencing to 'non-visual' telephone interviews as it was felt that the ability of the participant to see the researcher, coupled with the researcher's ability to record and respond to the nonverbal such as facial expressions, was an important factor in establishing rapport and building interpersonal connections (Deakin and Wakefield, 2014), allowing for the collection of rich data.
Memoing	An active listening position was adopted during interviews and at tech meetups by remaining alert for other cues, particularly non-verbal cues, with memoing used to note any non-verbal aspects. Immediately after each data gathering exercise, the researcher noted any personal thoughts or feelings about the interview. These were reviewed and then included in the reflective journal. This extensive memoing was also used as the researcher logged the research process, made analytic decisions (Miles *et al.*, 2018) and reflected upon this process (Saldaña, 2021), offering another valuable data source.
Field notes	When collecting observational data using field notes at tech meetups, the researcher had two objectives: i) a predetermined goal of observing and documenting specific time points and scheduled activities, for example the arrival of attendees, interaction during the interval, interaction during the tidying of the room after an event; ii) to take an exploratory and open approach by recording conversational or unstructured interviews. To help with organising data, field notes were documented into two categories within one notebook, as follows: **POb1 (Participant observation 1)** - Notes that documented the event 'as it was', including such details as the content of speaker presentations, the room layout, seating arrangements, presence of food, drink, and the researcher's observations on this. **POb2** (**Participant observation 2)** – Notes that documented informal conversations or interviews at the event with participants. This practical approach to observing and recording material surroundings and social interactions in the field provided a mechanism for documenting behaviours, interactions and unexpected occurrences which might not been recorded in a traditional interview setting. For example, special attention was paid to any changes in behaviour and the researcher noted how, during interactions with a representative from the enterprise partner at tech meetups, participants' demeanour changed. Instead of talking about the tech event or making informal conversation, they instead started to discuss their business and potential professional

	opportunities that the institutional actor might help them with. These kind of observations were documented as data but also helped to inform more focused questions during indepth interviewing. Where feasible, field notes were recorded using Gregg shorthand during a tech meetup, although the researcher took great care to never visibly take notes whilst interacting with participants, in case this affected behaviour or outcomes. This note-taking was also limited somewhat by the researcher's commitment to assist with organising and running the event. Detailed field notes were written up immediately after the tech meetup ended, while the events were still fresh in the researcher's mind, and using shorthand notes as a memory aid. Notes were reviewed the following day for accuracy and then transcribed into Word documents.
Digital interactions	Analysis of Whatsapp conversations within the EO dataset took place throughout Cycle 3 of the study. As participant observer and a member of the organising group, the researcher took part in these conversations. It was noted by the researcher that the group tended to become active in the days preceding each tech meetup, as discussion took place about the impending meetup. It was most active on the day of, and particularly during, the meetup. The group remained active in the days after the meetup and conversation within the group tended to then then lull until a couple of days before the next event. After noting this pattern for the first three months of the data gathering, the researcher developed a data collection protocol whereby a dataset incorporating pre event, event and post-event discussion would be downloaded and saved as a Word doc two weeks after the last post-event comment. This approach was taken to ensure that datasets were kept manageable, and that all discussion was appropriately captured. Should conversations take place 'between events', these were downloaded and documented separately.

Source: created by author

Appendix O – Data preparation protocols	
Reading 1	Each file initially saved in a folder entitled DRAFT on the research study's secure cloud location. The letters and symbols '_draft' were added to the file name. The second, third and fourth playing involved the researcher reviewing a recording or notes whilst reading a hard copy printed version of the transcribed notes to cross-check for accuracy.
Reading 2	After the second reading, the document was resaved in a folder entitled PROOF 1 and the letters and symbols '_pf1' were added to the file name.
Reading 3	After the third reading, the document was resaved to a folder entitled PROOF 2 and the letters and symbols '_pf2' added to the file name.
Reading 4	After the fourth and final review, the document was saved in a folder entitled FINAL and the letters and symbols '_final' were added to the file name. Hard copies of transcriptions were stored in a locked filing cabinet, for future reference.
Importing to Nvivo	Each non-coded transcript was only imported into Nvivo when it had passed the fourth round of proof-reading and review, the researcher was confident that all data was captured correctly and the document was saved in the FINAL folder with the letters _final after its file name.

Source: created by author

Appendix P – Procedural steps for data proof reading		
File name	**Stage of proof-reading**	**Next step**
Example_draft	Draft, indicating the first draft of the file that had been transcribed using an audio or video file, field notes or a reflective journal	Move file to Proof 1 folder
Example_pf1	Proof 1, indicating the first time transcribed data was proof read in hard copy format	Move file to Proof 2 folder
Example_pf2	Proof 2, indicating the second time transcribed data was proof read in hard copy format	Move file to Final folder
Example_final	Final, indicating the third and final time transcribed data was proof read in hard copy format	Import file to Nvivo

Source: created by author

Appendix Q – Transcription choices

Naturalised data	Justification for gathering
Interview background noises	Particularly relevant during Zoom-recorded interviews, to assess if background noise or technical interference caused distraction.
Pauses	When recorded with a gesture or non-verbal signal (eg a smile, eye-rolling, grimace) can shed further light/ suggest emphasis on meaning of spoken content.
Overlapping talk between researcher and participant	Can help to avoid misrepresentation, eg if not all of participant's words were captured
Intentional response tokens of both participant and researcher (ie, using mono or bi-syllabic sounds)	Informational content; captures meaning, eg 'Uh huh' or 'Mm hmm' to indicate agreement or 'Huh' to record if a speaker asked for a phrase or question to be repeated (Gardner, 2001)
Non-verbal vocalisations of both participant and researcher, eg gesticulations such as pointing, nodding, smiling, laugh, grimace, eye-rolling	Informational content, meaning attached to these that can influence the conversation and relay understanding of the researcher. For example, could indicated affective state of participant such as happiness, distress.
Pace of speech slowing down or speeding up	May add more detail, emotion or emphasis to what participant is expressing
Raised voice	May add more detail, emotion or emphasis to what participant is expressing

Source: created by author

Appendix R - Codebook for non-verbal data, adapted from Jefferson Transcription System Symbols and modified by author	
Symbol	**Description**
(.)	A micropause - a pause of no significant length.
(0.7)	A timed pause - long enough to indicate a time. (0.7) is the silence measured in 10^{ths} of a second.
[ ]	Square brackets show where speech overlaps.
(( ))	Double parentheses contain transcribers comments or descriptions, eg ((laughs))
> <	Arrows showing that the pace of speech has quickened. >and then she said<
< >	Arrows showing that the pace of the speech has slowed down. <and then she said>
°word°	Degree sign indicate syllables or words distinctly quieter than surrounding speech by the same speaker °and then she said°
( )	Unclear section.
Underlining	Denotes a raise in amplitude, pitch or emphasis, eg he said
↑	Rise in intonation
↓	Drop in intonation
→	Entered by the analyst to show a sentence of particular interest. Not usually added by the transcriber.
CAPITALS	Louder or shouted words relative to surrounding talk.
(hhh)	Laughter in the conversation/speech.
: : :	Colons - indicate a stretched, lengthening of a sound, eg O:::kay. Length of row of colons indicates length of prolongation. One or two colons common, three or more colons only in extreme cases.
.hhh	Indicates an inbreath (row of hhh with a dot at the start). Three letters indicate 'normal' duration. Longer or shorter inbreaths indicated with fewer or more letters.
Hhh	Indicates an outbreath (row of hhh without a dot). Three letters indicate 'normal' duration. Longer or shorter outbreaths indicated with fewer or more letters.

Source: created by author

Appendix S - Example of Cycle 1 initial coding

Initial code	Data chunk	Tentative focused code
Connecting - benefits Empathising/ Relating Disconnect/ siloing Connecting - benefits	You have the [redacted]. And they're great little ecosystems there for young entrepreneurs tapping into local knowledge… You're surrounded by people who are going through the same throes of setting up a business. You get to bounce ideas. Anyone in [redacted], all the tech companies in here are all communicating with each other. And all the tech companies then outside, depending on their size and scale will communicate somewhat but no (0.4) there has been a break down. Because the tech meet-ups, we'd all have a few beers and a few pulled pork blaas ((laughs)). But we're all chatting to each other. I'm chatting to [redacted] and [redacted] are chatting to [redacted] and all this carry on. Whereas that's just broken down at the moment, that's just not happening formally ((shakes head)) (0.3). Only on a personal level, now, there's probably tech heads and CEOs and that carry on communicating somewhere but there's no genuine chatting…Those relaxed ideas, when they're social, that's when ideas fly around. I got invited out to the super computer in TSSG because I came in to here. I came in to a tech meet-up, I met yer man that ran it and a couple of days later I was out there in the server room. So, yeah, it just goes to show.	Proximity - benefits Connecting informally FOMO Connecting informally

Source: created by author

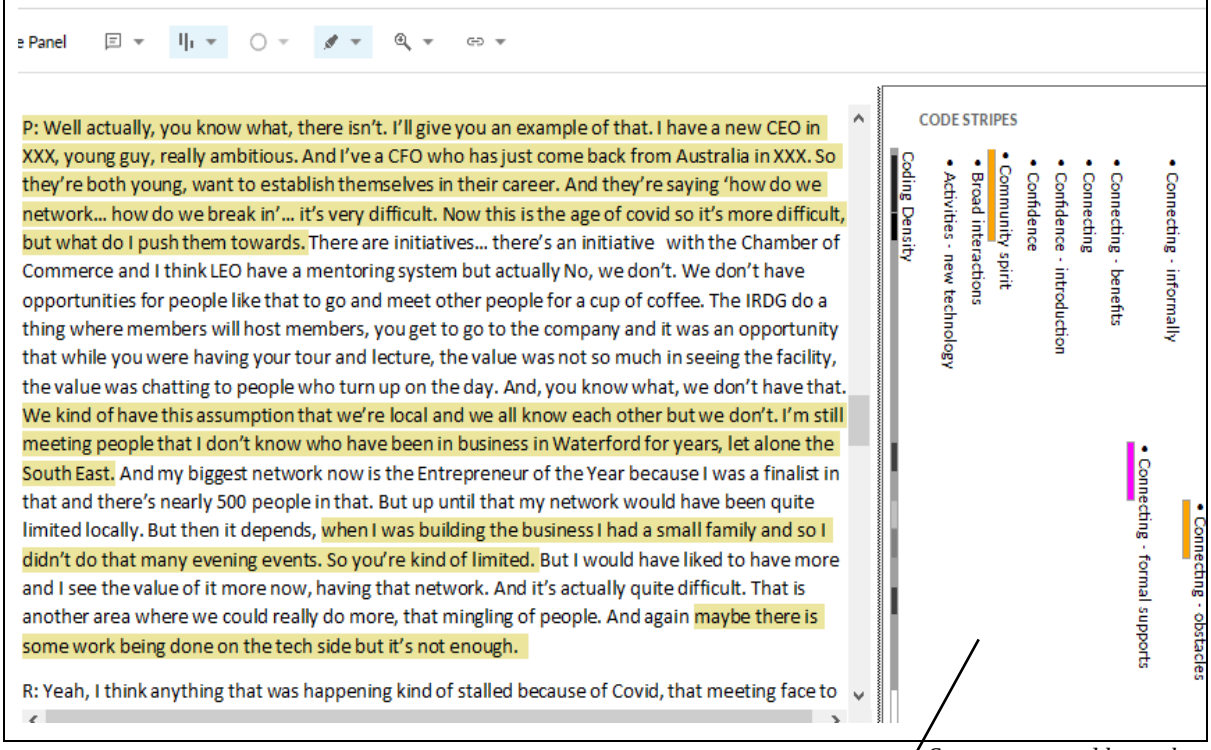
Appendix T - Table of initial codes from first coding cycle

Name	Description
Activities - new technology	Refers to participants' comment regarding activities/ events relevant to new technology that are happening
Broad interactions	Refers to participants' comments on need to have broad range of interactions with as many as possible
Community spirit	Refers to participant's views on existence/ strength of start-up community (spirit)
Confidence	Refers to participants' comments relating to having confidence, or a lack of, when interacting
Confidence - introduction	Refers to participants' comments regarding how having an introduction helps with their confidence around interactions
Connecting	Refers to participant talking about the importance/ value of connecting with their network
Connecting – benefits of	Refers to perceived benefits of connecting with network
Connecting with experienced entrepreneurs	Refers to participants comments about interacting with more experienced entrepreneurs
Connecting - formal supports	Refers to participants' views on formal supports available from institutional actors that might help with connecting
Connecting - informally	Refers to participants' views on casual, informal networking
Connecting - obstacles	Refers to participants' views on obstacles to connecting with other start-ups
Connecting - outside sector	Refers to participant' views on importance/ value of connecting with start-ups/ professionals outside their sector
Connecting - own efforts	Refers to steps participants' are taking on their own initiative to star connected
Connecting - proximity	Refers to participants' comments on how proximity to other start-ups has impacted them/ their work
Connecting - sector	Refers to participants' view on importance/ value of connecting with others in their sector
Connecting - types of events	Refers to participants' views on the type of organised events available for networking
Covid	Refers to participants' views on the impact of Covid-19 pandemic on their own networking and interactions
Creating collaborative culture	Refers to participants' views on how to create a culture of collaboration
Creating opportunity for interaction	Refers to participants' views on how opportunity could be created for interaction
Disconnect	Refers to views regarding a disconnect between ecosystem supports/ institutional actors and a siloing of supports
Events - content	Refers to participants' views on the planned activities, talks or other content at planned networking events
Events - purpose of	Refers to participants' views on the stated and advertised purpose of planned networking events
Exchange - social	Refers to participant's views on social interactions, talking with other start-ups
Exchanges - other's experiences	Refers to participants' views on sharing own experiences and listening to other start-ups' experiences
Finding expertise	Refers to participants' views on finding expertise necessary for the business within networks.
FOMO - exclusion	Refers to expressions of belief that collaboration is happening but participant is not a part of it
Identification - outsider	Refers to participants' identification/ feelings of being an outsider at some events
Insecurity	Refers to expressions of feelings of insecurity and vulnerability amongst start-ups

Isolation	Refers to participants' feelings of isolation, including as a result of Covid
Mistrust	Refers to comments regarding trust, or lack of
Nurturing	Refers to examples of 'mothering' or nurturing behaviour amongst peers
Optics	Refers to participants' views on importance placed on 'optics' or public perception, rather than on the substance of the issue itself
Participating - value	Refers to participants' views on where they would see value in participating in events/ networking activities
Proximity - Benefits of within co-working spaces	Refers to participants' comments on using co-working spaces
Quirky setting	Refers to participants' comments regarding events that took place in quirky, not-typical place or surroundings
Reassuring	Refers to participants' views on reassurance they received through interactions
Relationships - existing network	Refers to participants' views on relationships/ interactions with contacts in their own network, from their own past, and how they impacted their start-up
Relationships - formal	Refers to participants' comments on formal, business relationships, including with institutional actors
Relationships - mentors	Code refers to participant views relationships with senior entrepreneurs/ mentors and importance/ value of connecting with them
Resources	Refers to participants' comments on resource challenges facing start-ups
Risk	Refers to participants' comments on risks facing start-ups
Role of institutions	Refers to participants' views on role of institutional actors in supporting innovation/ start-ups
Social anxiety	Refers to participants expressing apprehension or fear of social situations, interacting with others in social situations
Spontaneous interaction	Also serendipitous interactions, refers to unplanned encounters with others resulting in interaction/ networking that would not have otherwise occurred
Stress	Refers to participants' comments regarding stress start-ups are facing
Strong network -luck	Refers to instances when participants attributed their strong network (and the benefits of this) to 'luck'
Supporting each other	Refers to participants' comments about supporting each other, willingness to and benefits of

Source: created by author

Appendix U - Example of using Nvivo coding stripes during initial coding to manage coding and provide insights



Source: created by author

Stripes indicate densest parts of coding in transcripts when participant discusses if there is enough regular interaction/ engagement with other entrepreneurs

Appendix V - Example of Cycle 2 tentative focused coding

Source: created by author

Appendix W - Correspondence from SETU School of Business Ethics Committee

March 8th, 2021

Dear Michelle,

Thank you for submitting your application to the School Ethics Committee for approval.

Study Title: 'Establishing an Innovation Footprint in the Cultural Quarter of a Regional Capital City'

It is a detailed application and consideration has been given to a range of ethical issues highlighted as relevant to the planned project with supporting ethical protocols in the appendices.

We are satisfied to approve your application however we would ask that you and the team consider the feedback highlighted below in finalising your study protocols:

1. Information sheet

- Regarding the key stakeholders, (selection across four pillars: Government, Academia, Industry and Civil Society/ Community) alluded to in your application, you might consider informing participants of this plan.
- It would be helpful to clarify the length of planned monthly meetings in respect of stakeholders participating and numbers involved.
- It is assumed that observation will be undertaken using note taking and not recording. This could be made explicit.
- There is a reference to a 45-minute interview following each action, however the number of actions is unspecified. Hence would it be possible to provide an estimated range possible for potential participants to be able to gauge the level of commitment?
- The participating risks are well documented, however you may also consider whether participant representative organisations might also be anonymised.
- You could also note in your information sheet that withdrawal can take place up to the point of data merge.
- There is reference to surveys under verification of finding sections, this is not noted in your application.

2. Consent form

- You should consider adding a line to request consent for your CoP meeting note taking.

We are aware of your timelines for completing this phase of your research and we wish you well with your research study.

Yours sincerely,

Denis Harrington

Prof Denis Harrington, Chair of Business School Ethics Committee

Appendix X - Researcher's response to correspondence from SETU School of Business Ethics Committee

15th March, 2021
Dear Professor Harrington,

Many thanks for your recent correspondence approving my application to the School Ethics Committee for my study: 'Establishing an Innovation Footprint in the Cultural Quarter of a Regional Capital City'.
Before finalising my study protocols, I wish to note that I have taken on board your feedback and updated my Information Sheet and Consent Form, please see attached.
I would like to take this opportunity to sincerely thank you and the other committee members for your valued observations and considerations.

Kind regards

Michelle Clancy

Source: created by author

Appendix Y - Participant information sheet for Cycle 3 (tech meetup attendees)

Information Sheet

'ESTABLISHING AN INNOVATION FOOTPRINT IN THE CULTURAL QUARTER OF A REGIONAL CAPITAL CITY'

Michelle Clancy
School of Business
SETU

I would like to invite you to take part in my research study. Before you decide, you need to understand why the research is being done and what it would involve for you. Please take time to read the following information carefully and do not hesitate to contact me at michelle.clancy@postgrad.wit.ie if you have any questions or require additional information about any aspect of the study

Background information

Michelle Clancy is a PhD student at SETU's School of Business. Her research study*, 'Establishing an Innovation Footprint in the Cultural Quarter of a Regional Capital City',* is taking place under the supervision of Dr. Eugene Crehan, Director of Programmes at SETU's Centre for Enterprise Development and Regional Economy (CEDRE) research centre and Dr. Thomas O'Toole, Head of SETU's Business School, and in collaboration with Waterford City & County Council, Waterford Local Enterprise Office and Waterford Cultural Quarter. The study has received the Irish Research Council's Enterprise Partner Scheme Award.

What is the purpose of this research?

Waterford Council is currently engaged in developing the O'Connell Street area of the city into a Cultural Quarter. It has a number of innovation-focused initiatives planned for this area, including the development of a Smart City Experimental Urban Lab, a high-tech prototype workshop intended for interdisciplinary collaboration and other projects aimed at developing innovative and sustainable concepts for the 'City of the Future' through the application of analytics and technology.

My study aims to support Waterford's innovation footprint and collective innovation capacity by examining interaction and collaboration within the local innovation ecosystem, specifically the technological-focused community. In particular, the study is looking at how informal events and initiatives (such as Waterford Tech MeetUp) contribute to interaction and support an inter-connected ecosystem.

What will the research study involve?

This study involves 'Action Research', whereby the researcher works with innovation-focused stakeholders from the key areas of the public sector, academia, industry and the local community to identify and examine how interaction and collaboration begins, develops and evolves. As an 'action researcher', I am immersed in the research environment with the dual objective of actively supporting projects that might enhance interaction and collaboration (eg by helping to organise the Waterford Tech MeetUps); and discovering how interaction and collaboration might be better supported in the future by observing and documenting these events.

Why am I being asked to participate?

You are asked to participate because you attend (or have attended in the past) the Waterford Tech MeetUp.

Do I have to participate?
No, participation is entirely voluntary. If you choose to participate you will be asked to sign an informed consent form and will reserve the right to withdraw from the study at any time.

What would participation in the study mean for me?
This study observes and documents how informal events and initiatives (such as Waterford Tech MeetUp) contribute to interaction and support an inter-connected ecosystem. Participation in the study would require you to be available for an interview via Zoom or in person with the researcher at a time and date of your convenience. This interview will discuss your involvement in innovation-related activities in Waterford, specifically the Tech Meetups but also any other events or initiatives you wish to discuss where interaction and collaboration between the technological community occurs. The interview will be recorded for the purposes of transcription only and data will be anonymised, to maintain the strictest confidentiality. The researcher is also engaged in observing, and documenting her observations, of how these events are organised and how they run. Again, any information documented during observation is completely anonymised to protect anonymity at all times.

What are the benefits of participating?
Participation will offer you the opportunity to provide your perspective and feedback and contribute to an enhanced understanding of innovation activity and stakeholder collaboration within the technological community; and to be part of a project aimed at practically impacting the creation and shaping of an innovation footprint in the city. It is hoped that the findings will particularly inform Waterford Council's approach to working with, and supporting collaboration within, the local technological community in the future.

What are the risks associated with participating?

It will be necessary to gather and store some personal data relating to participants, eg your contact information and signed consent forms during the study, which could potentially present a risk of personal data breach.

To minimise risk, the researcher will be compliant with all GDPR requirements when handling this data. All hard copy documents relating to participant (and any representative organisations, if relevant) contact information and signed consent forms will be stored in a secure digital location for the duration of the study.

The primary data to be collected during this study relates to individuals who may be identifiable from the raw recordings or full interview transcripts. The following steps will be undertaken to protect the privacy of participants and their organisations:

- Participants will be anonymised when interviews are being transcribed to avoid recognition through the data.
- Only the researcher will know the identities of all participants, thus a protocol of confidentiality will be adopted. The researcher agrees not to provide the data, or any part of it, to any third party unless legally required.
- In circumstances where the data will be used in peer-reviewed publications, it will be anonymised to protect the identity of the source.

Can I withdraw at any point?
Yes, you may withdraw at any point up to the point of data merge and have any data you provided destroyed.

How will data gathered be managed and used in the study?

The data collected from you will be aggregated with the data from other participants. The findings will be made

available to Waterford City & County Council. It is anticipated that the findings will be used to help inform policy decisions and activity relating to innovation-focused actions by the local authority.

The results of the research will be published in the researcher's PhD thesis and the study may also be published in a research journal. All information you may give will be treated in the strictest confidence and neither you nor your organisation will be identifiable at any stage in the publication or presentation of the findings.

After consent is received, audio/ video data will be collected and stored using digital recording and also transcribed into Microsoft Word and coded using specialised software. To preserve anonymity, separate documents will be maintained containing actual names and linked pseudonym coding systems. Data will be stored on SETU's cloud-based encrypted storage system and on an external encrypted hard drive, with the most up-to-date anti-virus software used across devices.

The data gathered during the course of this study will not be made available beyond the researcher. All data will be stored in a secure manner in SETU, utilising passwords and encryption to prevent unauthorised access, and will be held for up to five years after the final data collection date or as long as is necessary in line with good ethical practice. All data will be encrypted to the standard of AES 256, which is considered highly secure and used by the U.S Government and many financial institutions.

All data collected for the study will be retained for five years after the date of publication. After this date, the softcopy data will be destroyed through the use of software which will overwrite the space on which data is saved to, resulting in the permanent deletion of data. Any physical hard copies of data will be shredded in line with SETU policies. No data will be shared by third parties unless legally required to do so.

Has this project been ethically reviewed?

Yes, this project has been ethically approved by SETU's School of Business Ethics Committee.

Source: created by author

Appendix Z - Informed consent forms

Participant consent form

'ESTABLISHING AN INNOVATION FOOTPRINT IN THE CULTURAL QUARTER OF A REGIONAL CAPITAL CITY'

Michelle Clancy
School of Business
SETU

Name of Individual/ Organisation (Block capitals):

I confirm that I have read and understood the information sheet provided and the above researcher has fully explained the aim and nature of the study, as well as the commitments required of me as a participant. I have had the opportunity to ask questions about the study. ☐

With regards to my contribution:

I am voluntarily participating in this study. ☐

I grant permission to record my interviews for transcription purposes. ☐

I understand that I can withdraw from the study at any point. ☐

I understand that all information I provide for this study will be treated confidentially and that my own (and my organisation's details, where relevant) will be anonymised. ☐

I understand that the anonymised data will be cited in the project thesis and other publications. ☐

I understand that signed consent forms and original audio/ video recordings will be retained by the researcher, stored upon a secure server, until five years after the project concludes ☐

Participant: Date:

Researcher: Date:

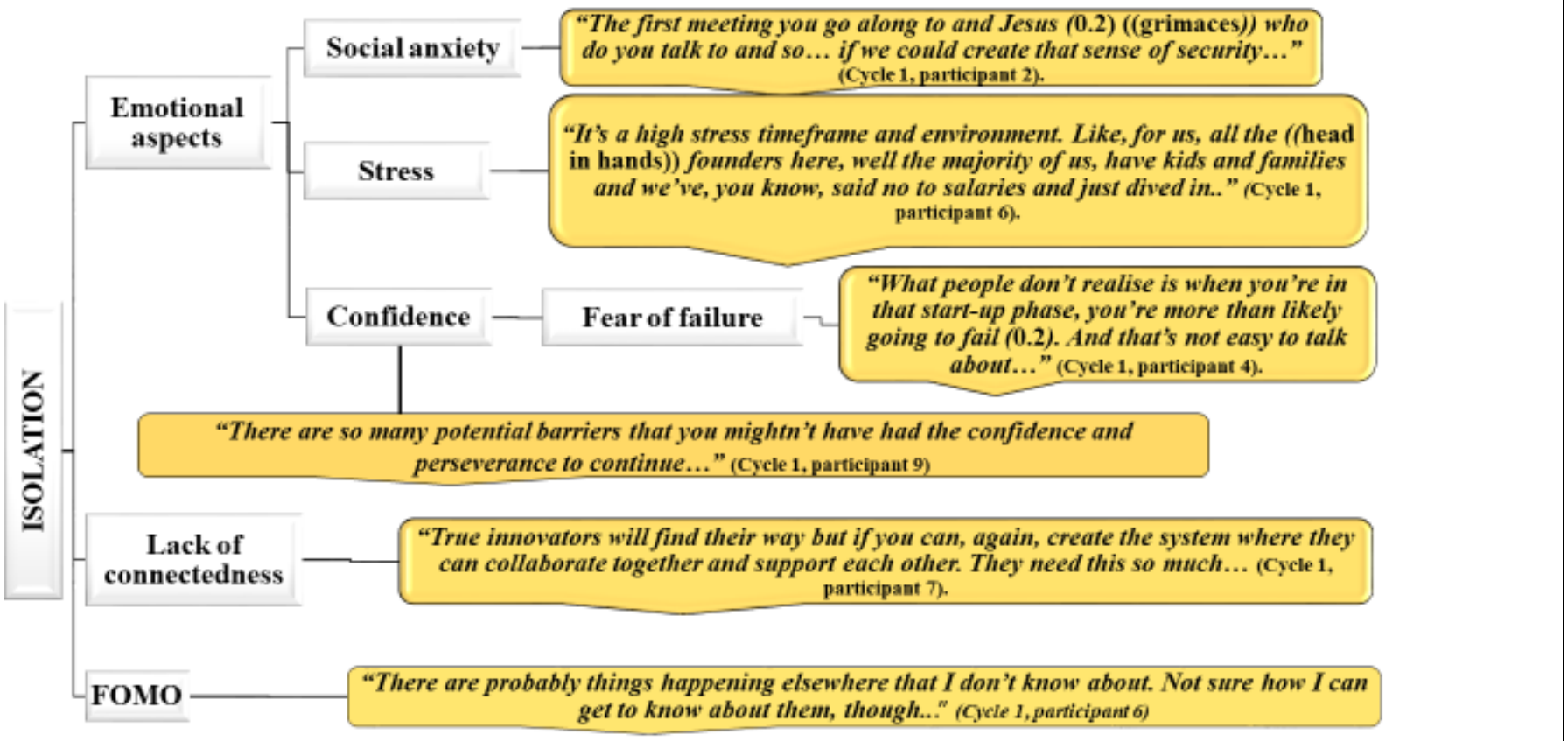
Source: created by author

Appendix AA - Key principles, codes and strategies applied in this study	
Consideration	**Assurance**
Codes of Ethics	The researcher familiarised herself with the SETU Code of Ethics prior to the commencement of fieldwork to ensure she was aware and fully briefed of her responsibilities within this.
Application to SETU Ethics Committee	The research study applied to, and received approval from, SETU's School of Business Ethics Committee.
Relevant documentation developed, approved by SETU School of Business Ethics Committee	1) Information sheet to inform participants about the study and what being involved would mean for them. Participating risks were documented on this sheet. 2) Informed consent sheet to facilitate voluntary and informed consent.
Checklist	The researcher designed and developed a Checklist to be used ahead of all interviews, to ensure compliance with ethical standards.
Participant recruitment	Some participants were purposefully selected based on set criteria.
Participation	Participants freely participated and could withdraw without disadvantage up to the point of data merge. This was clearly indicated on relevant participant documentation. Informed consent was secured prior to any data gathering, with each person reading and signing a consent form agreeing to the terms surrounding data usage and storage.
Participant confidentiality and anonymity	Confidentiality of response was guaranteed to all participants from the outset. The researcher used coding of participants to protect identity and secure data storage. To ensure confidentiality, the researcher conducted Zoom interviews in a private office room in her own home, with the door closed. In-person interviews took place in private offices with the door closed.
Reflexivity	Researcher conducted reflective journaling throughout the study to make visible and scrutinise 'interpretative crisis' (Denzin, 1994) regarding the researcher's subjective bias of the phenomena or personal moral stance or opinion. Regular discussion regarding potential bias with supervisors.
GDPR compliance	All research complied with Irish GDPR requirements relating to the collection of personal data.
Data collection protocols	An interview guide was created.
Introducing researcher's presence and purpose during observation	An overt approach to observation was taken at all times. For example, when speaking to people informally at tech meetups, the researcher at all times identified herself as a researcher conducting research into interaction; on occasions where the researcher acted as the event MC, she again introduced

	herself similarly from the podium and invited any questions from the floor regarding further details about the research.
Digital data storage	An institutional Microsoft OneDrive was used to store all digital and audio files collected, so that they could be used as a reference point throughout the study. This was considered a secure storage location for the project data as all files are encrypted during transfer and while they sit in the cloud (Microsoft, 2023). The use of OneDrive is cost neutral which was particularly appropriate given that there was a very limited budget attached to this study. Use of OneDrive meant the data was easily accessible by the researcher and easy to manage and search. As an additional safeguard, two-factor verification was used for login purposes, with end to end data encryption and password verification used to send messages via WhatsApp.
Secure hard copy data storage	Hard copies of reflective journals, field notes or printed transcriptions were stored in a locked filing cabinet at the home of the researcher.
Potential conflicts of interest	An audit was undertaken by the researcher to identify any potential conflicts of interest amongst stakeholders. This process was repeated quarterly during active fieldwork.
Publication agreements	Publication arrangements were made between supervisors, the researcher and enterprise partner prior to the study commencing.
Data destruction	In line with the policy of SETU's School of Business, project data will be destroyed within five years of completion of the study.

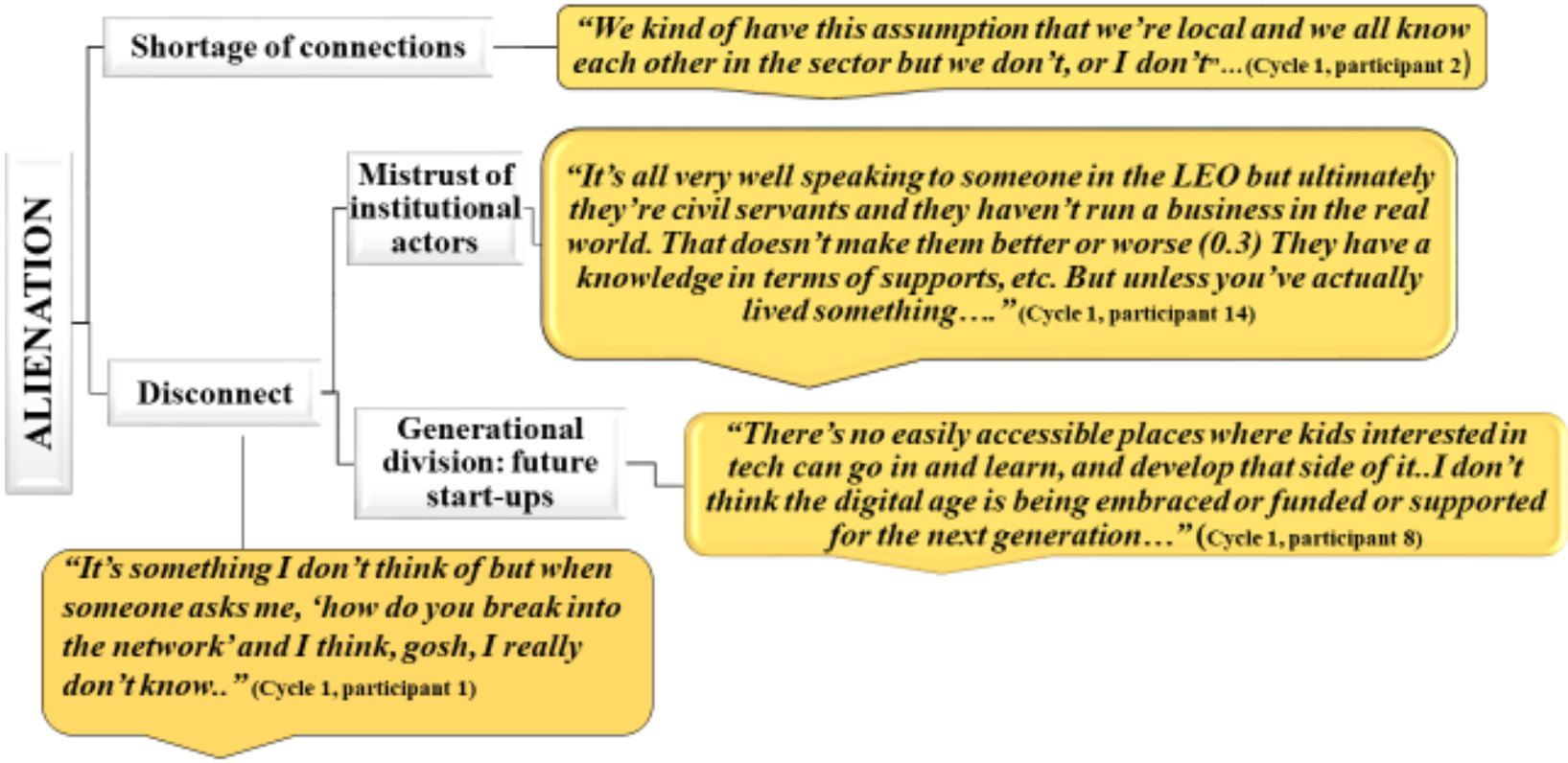
Source: created by author

Appendix BB – Sample participant quotes from Cycle 1 analysis relating to sub-category of 'Isolation', constraining relationship initiation



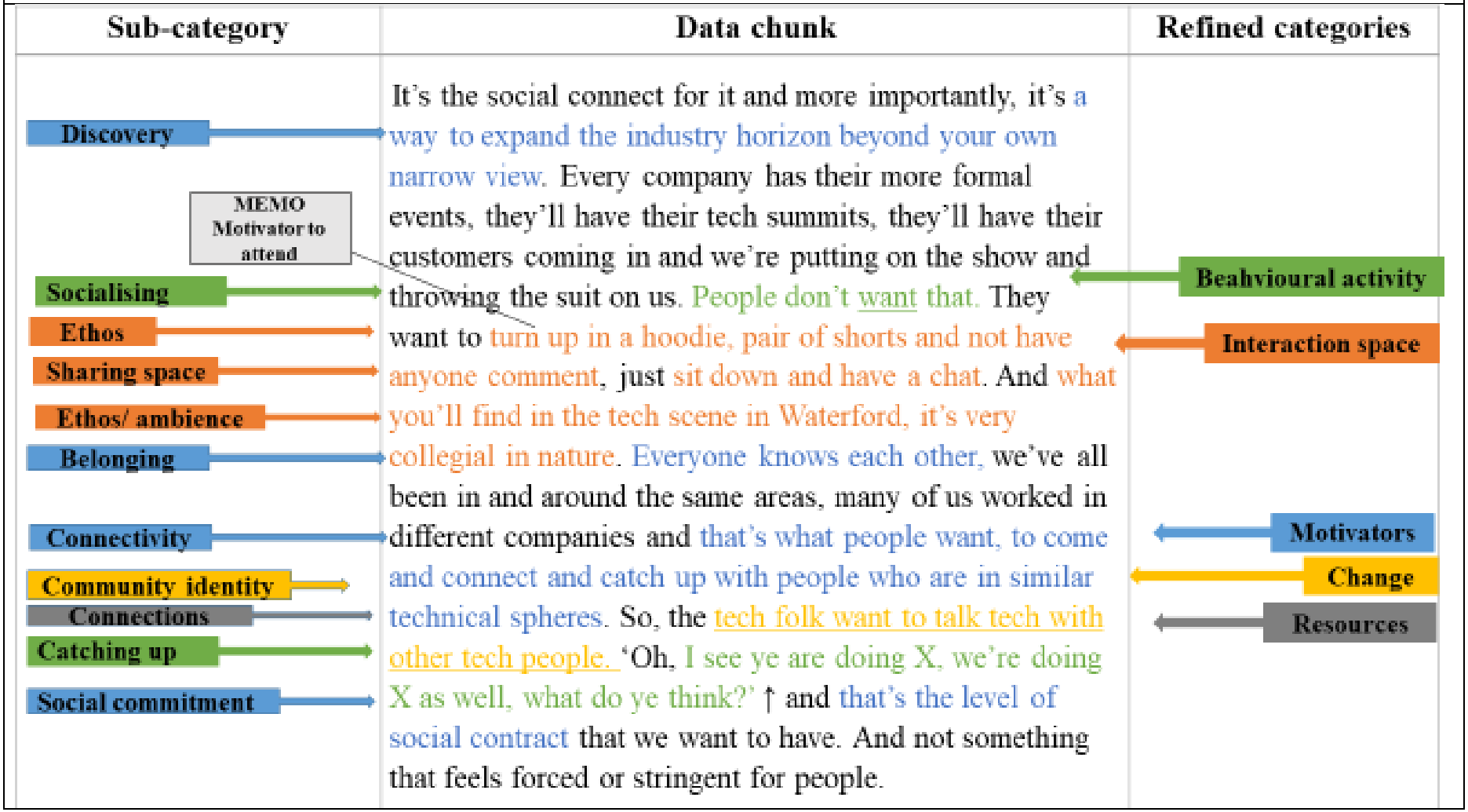
Source: created by author

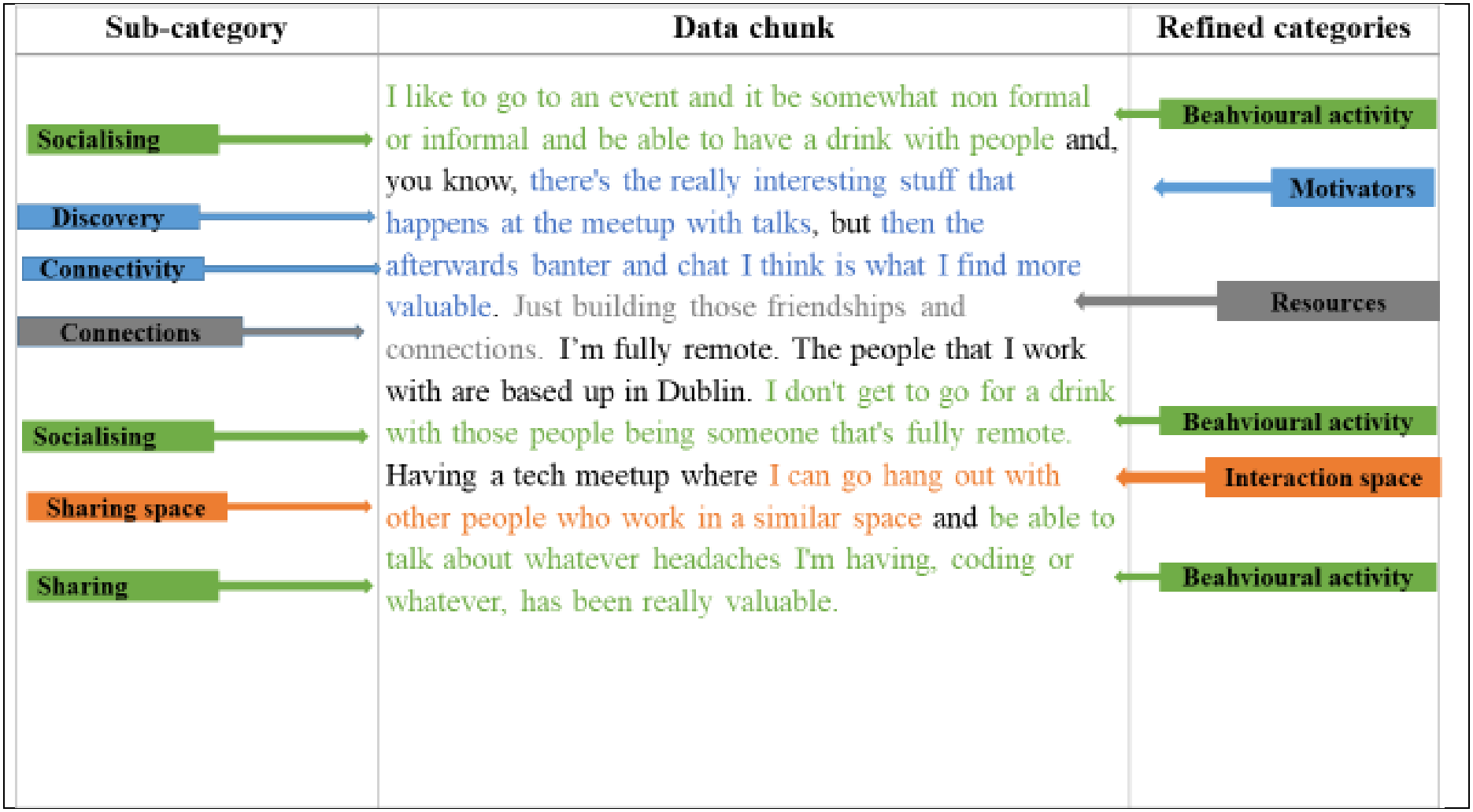
Appendix CC – Sample participant quotes from Cycle 1 analysis relating to sub-category 'Alienation', constraining relationship initiation

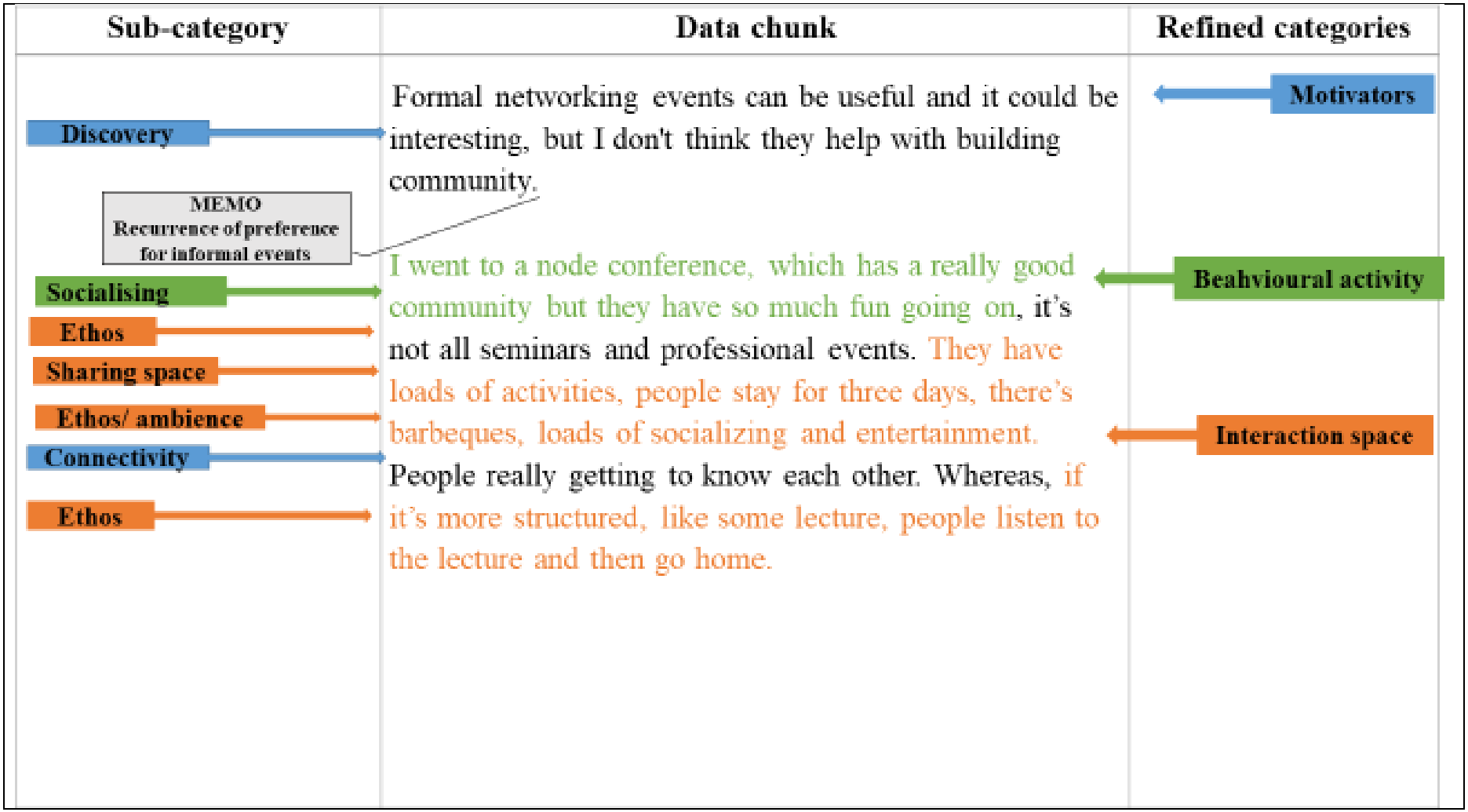


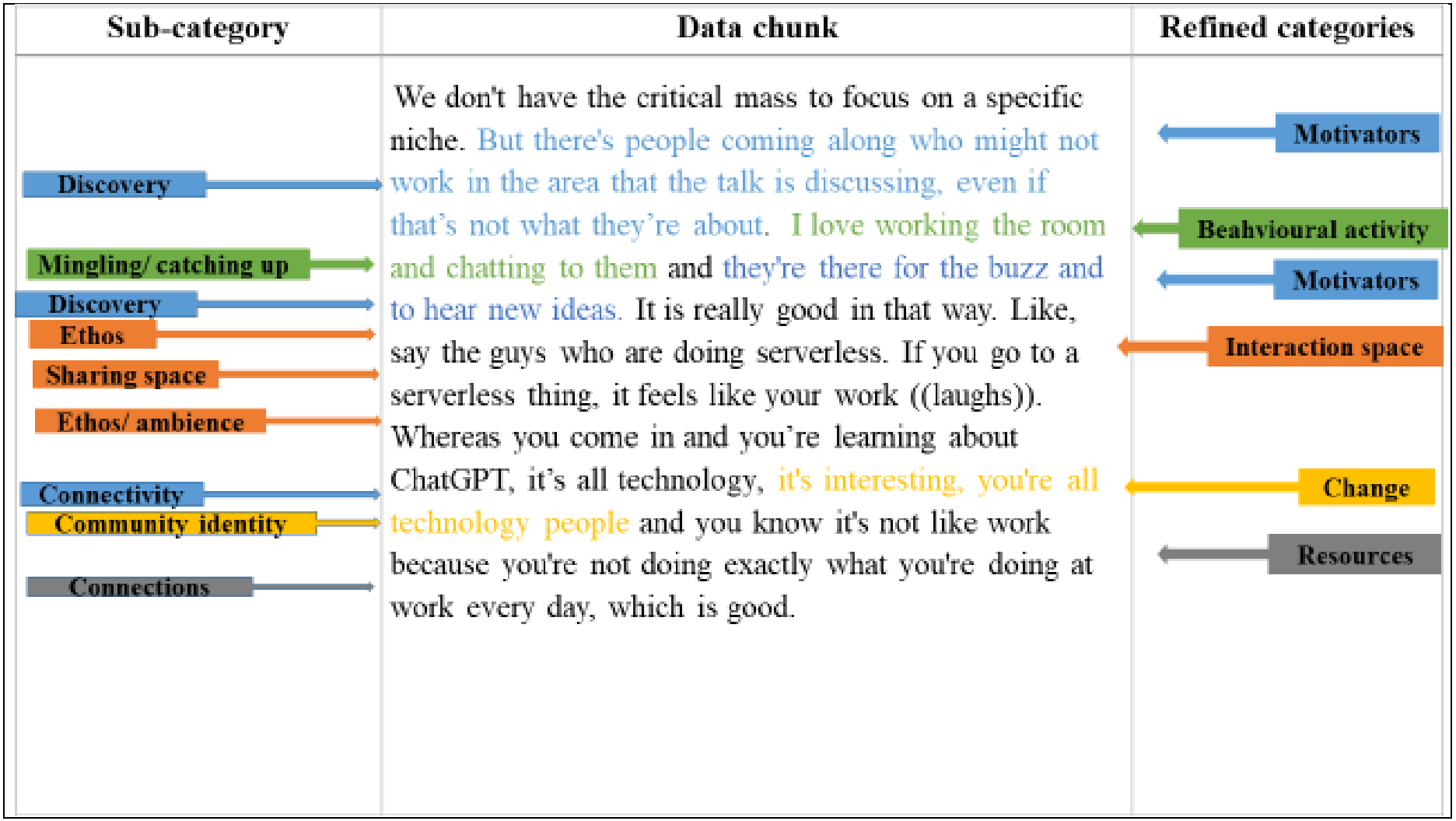
Source: created by author

Appendix DD - Examples of data chunks from Cycle 3, sorting codes into conceptual categories




Sub-category
Data chunk
Refined categories
Socialising
Discovery
Connectivity
Connections
Socialising
Sharing space
Sharing
I like to go to an event and it be somewhat non formal or informal and be able to have a drink with people and, you know, there's the really interesting stuff that happens at the meetup with talks, but then the afterwards banter and chat I think is what I find more valuable. Just building those friendships and connections. I'm fully remote. The people that I work with are based up in Dublin. I don't get to go for a drink with those people being someone that's fully remote. Having a tech meetup where I can go hang out with other people who work in a similar space and be able to talk about whatever headaches I'm having, coding or whatever, has been really valuable.
Beahvioural activity
Motivators
Resources
Beahvioural activity
Interaction space
Beahvioural activity


Sub-category
Data chunk
Refined categories
Discovery
Formal networking events can be useful and it could be interesting, but I don't think they help with building community.
Motivators
MEMO
Recurrence of preference for informal events
Socialising
I went to a node conference, which has a really good community but they have so much fun going on, it's not all seminars and professional events. They have loads of activities, people stay for three days, there's barbeques, loads of socializing and entertainment. People really getting to know each other. Whereas, if it's more structured, like some lecture, people listen to the lecture and then go home.
Beahvioural activity
Ethos
Sharing space
Ethos/ ambience
Interaction space
Connectivity
Ethos



Source: created by author

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