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Examining the Roles of Proximity in Craft Brewery Knowledge-Sharing and Collaboration in Aotearoa New Zealand

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“A Man's a Man for A' That”

Abstract

The research presented in this thesis examines the roles of proximity dimensions in inter-firm knowledge-sharing and collaboration between craft breweries in Aotearoa New Zealand. I sought to develop a deep understanding of proximity dimensions by responding to the following research questions: (1) What are the roles of proximity in knowledge-sharing between New Zealand's craft breweries? (1a) How do other dimensions of proximity relate to geographic proximity in the New Zealand Craft Brewing Industry? (2) How are craft brewery collaboration modalities influenced by proximity dimensions in the New Zealand Craft Brewing Industry? Extant literature in this domain focuses on understanding the role of geography and contends that geographic proximity is neither necessary nor sufficient for inter-firm learning or collaboration. Such literature is constrained by static methodological approaches, grounded in positivism. Static positivistic approaches limit understanding as to how the roles of proximity dimensions inter-relate and change over time. Addressing this limitation with an exploratory qualitative approach deepens understanding of proximity in knowledge-sharing and collaboration. Towards this approach, I conduct this research following an interpretive research paradigm. Empirical material has been collected via semi-structured interviews with 24 participants, from 21 craft breweries, across six geographic regions of Aotearoa New Zealand. These interviews were conducted and subsequently analysed using a method devised from productive hermeneutic thinking. Findings show that the role of geographic proximity in craft brewery knowledge-sharing and collaboration is complex. It is a direct enabler of inter-firm knowledge-sharing, but it is foremost an enabler of other proximity dimensions that facilitate subsequent knowledge exchange and collaboration. By re-examining established proximity dimensions through a hermeneutic lens, this research presents alternate perspectives of institutional, cognitive, and organisational proximity. Contributions to knowledge are also made through the identification of three novel proximity dimensions: triadic proximity; adversarial proximity; and capacity proximity. The roles of each of these new proximities in craft brewery knowledge-sharing and collaboration are demonstrated in this research. The findings of this thesis may be used to inform New Zealand governmental policy, which has historically sought, and failed, to capitalise on proximity as a mechanism for enhancing national innovation performance. Findings may also be of value to industry practitioners, such as craft brewery managers seeking to learn from and collaborate with their industry counterparts.

Acknowledgements

“Whit's fur ye'll no go by ye!”

For my non-Scots speaking audience, this saying basically means: ‘if it’s meant to be, then it will happen for you’. I have always found it to be a peculiar saying because on one hand it can be used to comfort someone reeling from bad news. Like, getting dumped by a partner or not getting your dream job in a craft brewery after finishing your undergraduate degree. I will never forget you, Inveralmond Brewery! But, on the other hand, the saying can be used to encourage someone to chase their ambitions. ‘It’s for you, you’ll make it happen!’ I have always considered it an analogy for fate: ‘you won’t miss it, because you’re destined for it!’ I suppose that is how I consider the chain of serendipitous events that led to me taking on a PhD in New Zealand.

See, I never planned on being here. Here, in New Zealand. In 2017 I decided to leave Scotland. I wanted to see some more of the world before putting down permanent roots with a home and family. I travelled to Australia, spending a year or so travelling and working around the country. I worked many different jobs at that time. The most memorable of which was as a *banana humper* in far North Queensland. Cue the jokes. I have heard them all. In short, a *banana humper* pulls bunches of bananas, that weigh anywhere between 60 and 90 kilograms, from a tree and carries them on their shoulder to a tractor. That is it, for 10 hours a day, six days a week, in the blistering Queensland sun, I *humped* bananas. It was the most physically demanding work I have ever undertaken or plan to undertake ever again. Anyway, once leaving Australia I spent some time in Asia. While there I considered my return to Scotland. I was not excited about returning. I did not have much of a life to return to. Economic prospects in Scotland looked bleak, two years on from the referendum on UK’s exit from the European Union. So, I did as many other Scots did 200 years ago. I came to New Zealand.

After a few months of living here, I became aware of the level of support available for international students undertaking a PhD in New Zealand. I had planned on completing a PhD upon my return to Scotland. But with the level of support available, I decided to apply to Universities in New Zealand. Broadly, my research proposal was not warmly received. I suppose a qualitative look at economic theory, coupled with an unusual research setting, is not for everyone. Here is where thanks are due to my primary supervisor, Dr Andrew Cardow. You took an interest in my proposal, and maybe took a bit of a punt. I appreciate the opportunity extended to me by your interest in my research. With that, more thanks are due.

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Prologue

“Humankind was built on beer. From the world’s first writing to its first laws, in rituals social, religious, and political, civilization is soaked in beer.”

- William Bostwick

Here I provide a brief historical account of beer and brewing in Aotearoa New Zealand. The purpose of this historical account is to present a contextual understanding of the relevance of beer and brewing to New Zealand. A contextual understanding can also serve as a lens for viewing the interpretations presented in this research (Korstjens and Moser, 2017). I begin my chronicle with the arrival of beer to these islands and end with the present complexion of the New Zealand brewing industry, focusing on key historical developments. I also delineate the modern brewing process, so that technical and reserved language, presented later in the thesis, can be understood.

According to the journal: *A Voyage Towards the South Pole and Round the World*, beer was first brewed on these islands on 27th March 1773 by Captain James Cook (1728-1779) (Cook, 1777). While anchored in the Fiordland¹, Cook brewed the first beer on Resolution Island. Lacking conventional brewing ingredients, Cook brewed his beer using branches and leaves from the native Rimu and Mānuka trees. He accurately supposed these ingredients would treat the scurvy plaguing his crew. The following is a passage from the journal:

“We also began to brew beer from the branches or leaves of a tree, which much resembles the American black spruce. From the knowledge I had of this tree, and the similarity it bore to the spruce, I judged that, with the addition of inspissated juice of wort and molasses, it would make a very wholesome beer, and supply the want of vegetables, which this place did not afford; and the event proved that I was not mistaken.” (Cook, 1777, p. 70).

The act of brewing the first beer in New Zealand involved appropriating novel ingredients and applying them to an auspicious end. Meaning brewing the first beer was also an act of innovation. Prior to colonisation in 1840, New Zealand had become a popular whaling and sealing destination for European ships (Phillips, 2006). Whalers were known for distilling and consuming spirit-based alcohol (Phillips, 2016), although, the practice was outlawed in 1841, shortly after colonisation. These observations are relevant because they serve to demonstrate the absence of alcohol in Aotearoa, prior to the arrival of Europeans. There are no accounts of the first peoples of Aotearoa having produced or consumed alcohol.

Following colonisation in 1840, alcohol consumption was characterised by excess. In part, this was because high-volume spirits were the only alcoholic drinks available (Phillips, 2016). Local production of other drinks was limited. Alcohol had to be imported from other regions of the British Empire. Unfortunately, beer does not travel well. Beer requires more cargo space than spirit-based alcohols. Beer

¹ Located on the South-West corner of the South Island.

also tends to spoil and lose its alcohol content during transit (Watson, 2020). Therefore, New Zealand's first commercial brewery² was established in Kororāreka (Russell) in 1835 by a Jewish settler, Joel Samuel Polack. His brewery would remain in operation for ten years before its destruction in The Battle of Kororāreka³ in 1845. Polack's private residence and businesses had been used as a munitions store by the British Crown (Chisholm, 2006). During the battle, Māori Chief, Hone Heke, had his men destroy the munitions stores, with the resulting destruction of those buildings, and those in proximity ("War," 2019).

By the 1860s, local beer production outstripped beer importation (Phillips, 2016). This roughly coincided with commercial hop cultivation in New Zealand. The first hops in New Zealand were grown in 1842 (McAloon, 2008). These hops were cultivated in the Nelson region, including locations such as Motueka and Riwaka, around Tasman Bay. Tobacco was also grown in this region. Hop and tobacco cultivation have similar growing requirements, which are well-suited to the Tasman Bay climate. By the 1850s, breweries in this region had developed their own hop gardens (McAloon, 2008) – signalling the surging popularity of beer in New Zealand. However, alcohol consumption, in general, remained a controversial social issue at this time, especially amongst Māori leaders. Stemming from this controversy were numerous attempts to suffocate New Zealand's brewing, and other alcohol-producing, industries.

Unaccustomed to producing or consuming alcohol, Māori leaders were wary of the European's inebriant beverages. Such drinks were referred to (and still are) as *waipiro* (stinking water) (Phillips, 2013). Māori leaders were concerned that alcohol consumption led to numerous detrimental social issues as an 1874 petition from Haimona Te Aoterangi and 167 other Whanganui Māori expressed:

[Liquor] impoverishes us; our children are not born healthy because the parents drink to excess, and the child suffers; it muddles men's brains, and they in ignorance sign important documents and get into trouble thereby; grog also turns the intelligent men of the Māori race into fools ... grog is the cause of various diseases which afflict us. We are also liable to accidents, such as tumbling off horses and falling into the water; these things occur through drunkenness. It also leads men to take improper liberties with other people's wives.

² Despite exhaustive searches and consulting with a prominent beer writer in New Zealand, I was unable to identify the name of the first brewery. The beer writer understood that the brewery may have been called *Goldman's* but could not confirm with any certainty.

³ The battle of Kororāreka or *sacking* of Kororāreka as it is at times referred, was a battle contextualised within the Northern Wars of New Zealand. The war was a conflict between early European settlers, and Māori, primarily from the Ngāpuhi iwi (tribe). Māori, led by Hōne Heke, an influential opponent of British rule in New Zealand, stormed the town, cutting down the British flagstaff, and setting fire to a number of buildings. The battle is widely viewed as a victory over the British settlers ("The Northern War: Page 3 – The sacking of Kororāreka," 2019).

Despite this concern, alcohol consumption amongst Māori continued to increase and had become commonplace by this time (M. Cook, 2013). Opposition from Māori leadership continued and in 1884 iwi Ngāti Maniapoto successfully convinced the government to declare Te Rohe Pōtae (King Country region), the largest geographic region in Aotearoa New Zealand, a dry area (Cook, 2013). Many Māori would later enrol in New Zealand's growing prohibition movement.

New Zealand's prohibition movement had provenance in a small but vocal group of alcohol critics (Phillips, 2013) who saw alcohol as a damaging force in New Zealand society. The small group of critics was to evolve into the Temperance movement, who were to embark on a religious and moral crusade for prohibition. The Temperance movement successfully campaigned for legislative change (Phillips, 2013), including:

- The Abolition of Sunday Drinking (1881).
- Introducing the Minimum Drinking age of 18 (1904) and then increasing to 21 (1910).
- Reduction in pub closing times to 11 pm (1893), then to 6 pm (1917).

The movement failed to achieve alcohol prohibition in New Zealand in 1919 after a national referendum failed to pass by approximately 3,000 votes (Phillips, 2013). However, the 6 pm closure time of pubs had a lasting impact on New Zealand's drinking culture and became known as the "six o'clock swill".

The 6 pm closure of public houses was introduced both as a rationing measure during the First World War, and to appease the demands of those in the Temperance movement. The closure of pubs at 6 pm was intended to increase worker efficiency and encourage men to spend more time with their families. Men would end their working day at 5 pm, leaving them one hour in the pub until its closure at 6 pm. The practice of six o'clock closing lasted well into the 1960s ("Six o'clock swill' begins," 2020), even though it did not produce the desired effect. Instead, it has been associated with lasting issues in New Zealand's drinking culture, namely binge drinking. In the time between the end of the workday, at 5 pm, and 6 pm, men would gather in pubs to drink as much beer as they possibly could before closing. While men did arrive home to their families earlier as intended, the condition in which they arrived drew criticism of the legislation (Phillips, 2013). Generations of Kiwi men were taught through the legislation to consume high volumes of beer in a brief time allotment ("Six o'clock swill' begins," 2020).

The loosening of liquor laws would not occur until after the Second World War. Included within a raft of alterations to licensing legislation was the issuing of new liquor licenses in areas where there were very few. Parliament also allowed for the establishment of clubs, including RSA (Returned Services Association) to legally sell liquor. In the 1950s, the ban on women holding liquor licenses was lifted (Christoffel, 2014). A timeline of subsequent legislation is shown in the below Table:

Table 1: Licensing Reform in New Zealand 1960s - 1990s (Christoffel, 2014)

<i>Decade</i>	<i>Legislative Change</i>
1960	<i>Legislative changes in the early 1960s permitted a limited number of licenced restaurants to be established. The ban on barmaids was also lifted. In 1967, Parliament ended the 50 year on the six o'clock closing times. The drinking age was also lowered to 20 in 1969.</i>
1970	<i>In 1971, Parliament permitted a small number of cabarets to serve alcohol until 11.30pm on the proviso that food and entertainment were also being served. In the late 1970s sports clubs were permitted to apply for liquor licenced, which resulted in in several thousand new licensed outlets.</i>
1980	<p><i>The Sale of Liquor Act (1989) represented a package of significant licencing reforms, including:</i></p> <ul style="list-style-type: none"> • <i>The Act simplified the licencing process, making them easier to obtain.</i> • <i>Supermarkets were permitted to sell wine.</i> • <i>Licencing decisions, such as trading hours, were transitioned to local authorities.</i> • <i>Taxes were altered to reflect alcohol content, regardless of the beverage.</i>
1990	<i>In 1997, a review of the 1989 Act hailed it a success, and further reforms were recommended. A significant reform to emerge from this review was to permit supermarkets to sell beer⁴. Sunday liquor sales were permitted, and the drinking age was lowered to 18.</i>

Despite the suffocations of historical legislation, New Zealand has pioneered beer and brewing technology on a global scale. The most notable of which was the development of the continuous fermentation process.

Invented by New Zealander, Morton Coutts⁵, in 1930, the continuous fermentation process is where brewing ingredients are added to one end of the brewing process, and beer is perpetually withdrawn from the other end (Maxon, 1955). It was distinct from conventional brewing, which at that time, involved brewing beer in single batches intermittently. Continuous fermentation was viewed more favourably than

⁴ Permitting the sale of beer through supermarkets represented the opening of a new distribution channel for brewers who had solely distributed their products through licensed venues prior to reformation.

⁵ Morton Coutts was born of German heritage. He assumed control of his family brewery at the age of 15. He was particularly interested in the biological and fermentation properties of yeast. It was this interest that led to the creation of the continuous fermentation process ("Morton Coutts — Continuous Fermentation System," 2021).

batch brewing as it reduced brewing time substantially; required less equipment; and enhanced the consistency of the final product (Maxon, 1955). The technique was favoured by *Dominion Breweries (DB)*, who were serendipitously rebuilding their new brewing facilities when Coutts' developed his process ("Morton Coutts — Continuous Fermentation System," 2021). *DB* represents one of New Zealand's two historic corporately owned breweries still in operation today. The other is *Lion Breweries*, more commonly referred to as *Lion*.

Dominion Breweries was founded in 1930 by Sir Henry Kelliher and William Joseph Coutts, father of Morton Coutts. The brewery was created following the purchase of *Levers and Co.* and the *Waitemata Brewery Company*, based in Otahuhu, Auckland. Today, *DB* owns and operates four breweries in New Zealand; Waitemata Brewery (Auckland); Tui (Mangatainoka); *DB Draught Brewery* (Timaru); and Monteith's Brewery (Westcoast). *DB* produces several New Zealand beer brands, including three brands it describes as 'craft': *Tuatara*, *Black Dog*⁶, and *Monteith's*. I discuss the credibility of these brands as 'craft' later in the thesis. In 2004, *DB* was purchased by *Asia Pacific Breweries*, which was itself subsequently acquired by *Heineken* in 2012 ("Our History," 2021b). *Lion Breweries* also operate under the umbrella of foreign ownership.

Lion was originally founded under the name *New Zealand Breweries* in 1923. The organisation represented an amalgamation of ten different breweries from around New Zealand. It was not until the Northern division of *New Zealand Breweries*, in 1977, adopted the name *Lion Breweries*. The name emerged to represent their popular beer brand, *Lion Red*. Today, the company is registered in Sydney, Australia, and operates under the Japanese brewing conglomerate, *Kirin*. In New Zealand, *Lion* owns several beer brands, including *Speight's*, *Steinlager*, and *Waikato Draught*. Their product portfolio extends to three New Zealand 'craft' brands including *Emerson's*, *Mac's*, and *Panhead* ("Our History," 2021a). Again, the credibility of these brands as 'craft' is discussed later in the thesis. *Lion's* acquisition of *Emerson's* brewery in 2012 represented the first major purchase of a craft brewery by a corporation in New Zealand ("Lion paid \$8m for Emerson's brewery," 2013). The trend of corporate acquisition has continued as the popularity of craft brewing in New Zealand has grown.

In the USA, a craft brewery is generally considered a brewery that is small, independently owned, and community-focused ("What is a Craft Brewery," 2021). Contemporary craft brewing in New Zealand is linked to pioneering brewers such as *Harrington's* (Christchurch), which began operations in 1991, and *Emerson's* (Dunedin) which began in 1992. In contrast to the USA, which has had craft brewing since the 1960s, ("Beer History," 2020), New Zealand is a comparatively late entrant to the craft beer world. From the 1990s onwards, craft breweries continued to materialise around New Zealand. Some noteworthy

⁶ At the time of writing, *Black Dog* is in the process of being wound-up by *DB*. The brand had been experiencing challenging sales volumes, which were then exacerbated by COVID-19 related lockdowns (Garland, 2020).

entries include *Tuatara* brewery (Kapiti) in 2000; *Epic Brewing Company* (Auckland) in 2006; and *Garage Project* (Wellington) in 2011. At the time of writing, there are 199 breweries in operation in New Zealand ("New Zealand Breweries," 2022). Although, determining the precise number of these which are *craft* is challenging. This is because there is no index of craft breweries. Creating an index of craft breweries is difficult because there is no firm definition of a *craft brewery* in the New Zealand setting. Craft breweries may only be in operation for a short period, and some craft breweries exist only as brands. Craft breweries that exist only as brands are commonly referred to as 'contract breweries'. These are breweries with no physical location nor brewing apparatus. Contract brewers, alternatively, contract their brewing out to physical craft breweries. I discuss the significance of this in chapters two, three, and four.

Having provided a brief historical account of beer and brewing in Aotearoa New Zealand, I proceed to explain a typical brewing process in a craft brewery. Craft breweries do not typically utilise the continuous fermentation technique developed by Morton Coultts. Instead, a batch brewing methodology tends to be adopted. In Table 2, Siebenthal (2014) provides a step-by-step guide to the brewing process.

Table 2- Typical Craft Brewing Process

Production Step	Process
Step 1: Milling	Firstly, various types of malted grain are milled, crushing their kernels to extract fermentable sugars. The milled product is known as grist.
Step 2: Mash Conversion	The grist is then placed into a mash tun. In the mash tun, the grist is mixed with warm water, in a process known as mash conversion. Conversion involves using the enzymes contained within the crushed malt to break down its starches, turning them into sugar.
Step 3: Lautering	The mash, consisting of the converted grist and warm water, is transferred to the lauter tun. The lauter tun will separate liquid from the grain husks. This liquid is known as wort.
Step 4: The Boil	The wort is transferred to a kettle, in which it is brought to a boil. Once brought to a controlled boil, hops are added.
Step 5: Wort Separation and Cooling	Once boiled, the wort is moved to a whirlpool for separation. The whirlpool will remove any malt or hop particles that remain in the wort. The end liquid is now prepared for colling and fermentation.

Step 6: Fermentation	Yeast is pitched into the wort to begin the fermentation process. The role of the yeast is to consume the sugar present in the wort, subsequently converting it into alcohol. The yeast also carbonates and helps to flavour the beer.
Step 7: Maturation	The beer is left to mature, allowing its flavours and smoothness to develop.
Step 8: Filtration, Carbonation, and Cellaring	Once matured, the beer is filtered, carbonated, and transferred to a beer tank where it is cellared for 3-4 weeks. Upon completion, the beer can be packaged and distributed.

While this is a typical guide, it may be altered, and this is frequently the case in modern craft brewing. Most commonly, craft brewers will dry hop their beer. This means that hops are added to the beer after the cooling stage. This can be in addition to the hops added at the boil (wet hopping), or instead of. Dry hopping tends to create a beer with a stronger tasting hop profile. Another tactic used by craft brewers is to skip the filtration stage. Skipping filtration creates an opaque-looking beer that retains some flavour that can be lost during the filtration process.

The following chapters explore how the roles of proximity dimensions have influenced the craft brewing industry of Aotearoa New Zealand. Specifically, by seeking to understand how proximity has influenced knowledge-sharing and collaboration.

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Chapter One: Introduction

“Good people drink good beer.”
– Hunter S. Thompson

Overview

The research I present in this thesis examines the roles of proximity in inter-firm knowledge-sharing and collaboration between craft breweries in Aotearoa New Zealand. The goal of my research is to present an and an explorative account of the roles of proximity (Balland, Boschma, & Frenken, 2015). The purpose of this exploratory account is to deepen understanding of proximity dimensions, and their relationship to geographic proximity, whilst also remaining open to the identification of novel proximity types. This is achieved by moving away from the ‘static’ (Balland et al., 2015) positivistic methodological approaches that have characterised proximity research, toward an interpretive research design. In this chapter, I highlight the domains of literature where this thesis is situated and identify knowledge gaps in those veins of literature. Following this, I delineate the objectives of this thesis and follow these with my research questions. I briefly account for the methodological approach utilised in responding to my research questions. I then explain where my research intends to make original contributions to knowledge. I discuss my motivations for this research and present an economic case for conducting it. I also include a short discussion of what a craft brewery is towards the end of the chapter. I conclude by delineating the structure of the rest of the thesis.

Situating the Thesis

The research presented in this thesis sits across three domains of literature. Diffusion theory; proximity; and a small but growing body of craft brewery literature. Diffusion theory literature hosts early arguments concerning the roles of proximity in innovation diffusion. The inclusion of diffusion theory, therefore, supports the comprehension of proximity scholarship. Craft brewing scholarship is included in this thesis mainly to present the current level of knowledge of the research context, but its inclusion also permits the identification of additional gaps in understanding. I briefly discuss each of these three domains and identify limitations within them. I round off this section by acknowledging cluster theory and its implications in my research.

Diffusion Theory

The diffusion of innovations (Rogers, 1962) is a well-established body of scholarship situated in the realm of diffusion theory. Historically, diffusion of innovation scholarship has contended with how, and the pace at which, innovations are diffused throughout a social system. Early scholarship in this domain recognises that innovations tend to diffuse expediently in social systems characterised by physical closeness (Hagerstrand, 1967). This is due to intensified levels of communication between geographically

proximate individuals. Hagerstrand (1967) argues that innovations, at least initially, diffuse in geographic space. Jaffe, Trajtenberg, & Henderson, (1993) supports this, finding that innovations diffuse locally before diffusing to other, geographically distant locales. However, diffusion of innovation in geographic space is not assured (Morone, Sisto, & Taylor, 2019), and it can be prohibited by the social connectedness and the cognitive abilities of individuals (Feldman, Kogler, & Rigby, 2015). The relevance of social connectedness alludes to a challenge in contemporary innovation diffusion research. Specifically, Lengyel, Bokanyi, Di Clemente, Kertesz, and Gonzalez (2020) find innovations diffuse primarily in geographic space, but because social networks are frequently embedded in physical space (Singh, 2005), it is challenging to separate the influences of each. This means that it is not well-understood if spatial diffusion of innovations is the result of physical closeness or social connectedness. Proximity scholarship promotes further understanding in this domain.

Proximity Scholarship

Proximity scholarship is primarily concerned with understanding the role of geographic proximity in inter-firm learning. It is punctuated by the view that “*geographical proximity is neither a necessary nor sufficient condition for learning to take place*” (Boschma, 2005, p. 63). This domain of scholarship argues that inter-firm learning and collaboration are enabled by a framework of five proximity dimensions. These proximities include geographic proximity; social proximity; cognitive proximity; institutional proximity; and organisational proximity.

Influential proximity scholarship (Balland et al., 2015; Balland, Boschma, & Frenken, 2022; Boschma, 2005) argues geographic proximity can only enable inter-firm learning when other proximities are present, and that geographic proximity can be substituted for other proximity dimensions. It is also argued that the role of geographic proximity is ‘most likely’ as a facilitator of other proximity types (Balland et al., 2022). However, the facilitatory role of geographic proximity may be substitutable for temporary geographic proximity (Torre, 2008).

Methodologically, proximity literature is punctuated by a positivist research philosophy. Proximity literature therefore typically captures a ‘static’ account of proximity in an organisational context at a given time (Balland et al., 2015). This approach is prohibitive for understanding the interrelations between proximity dimensions and how these dimensions may change over time. Moreover, this approach precludes exploration, meaning that it is limited in its ability to re-examine proximity dimensions and identify novel proximities. These limitations are recognised by proximity scholars, who have called for a ‘dynamic⁷’ approach (Balland et al., 2015), and qualitative work in this space (Balland, De Vaan, & Boschma, 2013). I now briefly discuss craft brewing scholarship as the third domain of literature.

⁷ It is important to note that Balland et al., (2015) use of ‘dynamic’ denotes an evolution of proximity dimensions and their interactions over time. A dynamic approach is, therefore, considered in terms of a longitudinal methodological approach.

Craft Brewery Literature

There are two streams of craft brewery scholarship that are of interest to my research. The first seeks to understand factors that enable inter-firm collaboration (Alonso, Alexander, & O'Brien, 2018; Alonso & Bressan, 2017; Cunningham & Barclay, 2020; Kraus, Klimas, Gast, & Stephan, 2018; Lotfi, Kumar, Sanchez Rodrigues, Naim, & Harris, 2021). Research in this area finds that matters of trust, sympathy, and equity are important enablers of craft brewery collaboration. The roles of proximity dimensions in influencing collaboration are not considered in this area of scholarship. However, the second stream of craft brewery literature deals with the role of geographic proximity in craft brewery establishment (Barajas, Boeing, & Wartell, 2017; Nilsson, Reid, & Lehnert, 2017) and craft brewery closure (Nilsson, Smirnov, Reid, & Lehnert, 2019). Existing knowledge in this space finds that, in the USA, craft breweries do spatially cluster. The presence of a craft brewery is the greatest predictor of a craft brewery's opening location (Barajas et al., 2017). Similarly, craft brewery closures appear most commonly with breweries that are located in relative isolation (Nilsson et al., 2019). At the time of writing, the separate streams concerned with collaboration and proximity have not been converged. Synthesis of these separate lines of thought would permit the examination of craft brewery collaboration through a proximity lens, which would in turn enable the identification of the roles of proximities in facilitating a craft brewery collaboration.

Acknowledging Cluster Theory

This research is not an examination of clusters, at least not in the Porterian approximation (Porter, 1998a). In my examination of craft breweries, my research extends to a horizontal strata of a Porterian cluster. Specifically, I only seek insights from craft breweries, and not from organisations vertically associated with craft brewing, such as malt and hops growers, distributors, and hospitality outlets. Nevertheless, my examination of a horizontal strata of a cluster likely bears some implication for cluster theory. This is worth noting given New Zealand's relationship with the notion of clusters.

In 1991, Porter, Crocombe, & Enright, (1991) argued in favour of geographic, or spatial, clustering of business and enterprise in New Zealand. Their work focused identified a significant opportunity for clustering in the maritime sector, which was already distributed with a strong degree of geographic proximity. Porter and his colleagues broadly argued that clustering would promote the competitiveness of the New Zealand economy, promote innovation, and ultimately minimise the economy's reliance on dairy and timber exports. Policymakers responded, and in addition to providing finances to support the development of the Northland maritime cluster, grants were also issued to support the development of manufacturing and farming sectors such as Northland kūmara farming and Māori aquaculture (Anderton, 2002). Perry (2004, p. 98) characterises New Zealand's approach to cluster development as "too low key", lacking sufficient investment. This can explain why cluster development in New Zealand, particularly in the manufacturing sector, has been challenged and characterised as a failure (Smellie, 2018). Given that, a component of my contributions stemming from this thesis will reflect on policy avenues pertinent to the domain of clusters.

Research Objectives and Questions

Furthering understanding of the roles of proximity in inter-firm knowledge-sharing and collaboration can be achieved with an exploratory approach to the issue, which permits the re-examination of established proximity dimensions and the identification of novel proximities. Correspondingly, the research I present in this thesis strives for an exploratory account of proximity in the New Zealand craft brewery setting. Such exploration is intended to overcome the limitations identified in diffusion, proximity, and craft brewery scholarship. Those limitations are the difficulties in separating geographic from social factors in diffusion, the ‘static’ and non-exploratory approach to proximity dimensions, and the disconnect between collaboration and proximity knowledge in craft brewing scholarship. Towards that objective, my research is guided by the following research questions:

- 1: What are the roles of proximity in knowledge-sharing between New Zealand’s craft breweries?
 - 1a. How do other dimensions of proximity relate to geographic proximity in the New Zealand Craft Brewing Industry?
2. How are craft brewery collaboration modalities influenced by proximity dimensions in the New Zealand Craft Brewing Industry?

Approach Taken

This research reflects the philosophical view that reality is a subjective experience. This work is therefore based on an interpretive research paradigm, which seeks to generate understanding through the subjective experiences of individuals (Burrell & Morgan, 1979). Within this paradigm, my research methods are developed using hermeneutic principles. Broadly, hermeneutics is concerned with interpreting and understanding the meaning of historical and religious texts, human actions, beliefs, and intentions (George, 2020). Historically, the use of hermeneutic principles was contained to disciplines that relied on the analysis of ancient texts. Its use has since expanded to other domains, including the social sciences (George, 2020). Utilising hermeneutics in knowledge management; collaboration; and innovation research is not novel (see Clayton (2016) and Timmermans and Blok (2021)). However, hermeneutics has not been previously deployed in the territory of proximity scholarship. The modality of hermeneutics adopted most closely resembles Gadamerian hermeneutics (Gadamer, 2004).

Gadamerian hermeneutics and productive hermeneutics are often used interchangeably (Patterson & Williams, 2002) as is the case in this research. Productive hermeneutics supports the view that the researcher cannot and should not attempt to ringfence their prior understanding from the interpretation of

empirical materials. This means that I, in the researcher role, utilise my prior understanding of the research setting in the production of interpretations⁸.

Using Gadamerian terminology, my prior understanding is referred to as a ‘horizon’, and meaning is generated by fusing my ‘horizon’ with the ‘horizon’ of the research participant. Enabling this modality of interpretation requires me to be receptive to new knowledge that is disparate from my horizon, and to recognise that my prejudices are complicit in the research (Patterson & Williams, 2002). The rationale for this method is threefold. Firstly, utilising productive hermeneutics represents progress towards a ‘dynamic’ (Balland et al., 2015) approach to proximity research. Secondly, it responds to a direct call for qualitative work in the proximity space (Balland et al., 2013). Thirdly, it recognises the view that understanding knowledge flows requires a certain amount of interpretation (Krugman, 1991).

In obtaining empirical material for my research, I collected data from six different regions of Aotearoa New Zealand for this research. Within those regions, semi-structured interviews were conducted with 24 participants from 21 different craft breweries. I followed an iterative form of data collection, meaning that early analysis of one region determined the next region data was extracted from. Data were collected until a point of saturation was identified. Through this approach, the following contributions to knowledge were anticipated.

Contributions to Knowledge

Developing a framework of five proximity dimensions (Boschma, 2005) has progressed proximity scholarship towards the isolation of the role of geographic proximity. Absent from this domain of literature is a ‘dynamic’ (Balland et al., 2015) approach that can fully account for the interrelations and evolution of proximity dimensions. In response, my research contributes to knowledge by providing an exploratory account of proximity in the New Zealand craft brewing industry. This is achieved via the utilisation of a methodological approach not previously deployed in proximity research.

My methodological approach allows for the exploration of proximity unconstrained by the parameters of the five proximity dimensions (Boschma, 2005) that punctuate existing proximity scholarship. This means

⁸ Following my chosen methodological approach, I have elected to present this thesis in the first-person. Academic tradition has historically guided researchers to present their work in the third person as an indicator of objectivity (Shelton, 2015). However, according to the publication manual of the American Psychological Association (2010), the use of a first-person linguistic style is prescribed to ensure that actions are appropriately attributed to the correct individuals. For example, “*I conducted a literature review*” is comparably more attributable than “*the researcher conducted a literature review*”. Given the interpretations I present in this thesis are attributable to me, the first-person writing style is methodologically consistent.

my research contributes to knowledge by examining existing proximity dimensions through an inter-relational and evolutionary lens, while also remaining receptive to the identification of novel proximity types. Furthermore, my research contributes to knowledge by examining craft brewery collaboration modalities through a proximity lens.

Craft brewing scholarship has been successful in providing accounts of collaboration (Alonso et al., 2018; Alonso & Bressan, 2017), as well as the role of geographic proximity in craft brewery location selection and closure (Nilsson et al., 2017; Nilsson et al., 2019). However, the convergence of these lines of thought, at the time of writing, has yet to occur. Convergence would promote understanding of proximity roles in craft brewery collaboration. Therefore, my research seeks to contribute to craft brewery literature by examining the roles of proximity dimensions in various types of craft brewery collaboration.

Researcher Motives

A brief account of my motivations for this research enables understanding of how this thesis was conceived. But also, providing transparency of my experiences and perceptions of craft beer is supportive of my methodological position. My arrival at this area of research is the consequence of two converging interests. The first relates to my interest in economics, stemming from my undergraduate, and to a lesser extent my masters training. I studied economics at a time when the BRICS (Brazil, Russia, India, China, and South Africa) captivated academic and media audiences. The economic development of BRICS represented innumerable research opportunities for economists. I was keenly interested in how the geography of the BRICS factored into their development. For example, Brazil's geographic setting permits access to vast sums of timber; Russia's locality grants access to oil and gas; South Africa's location enables the country's mining sector, and China's east coast acts as a substantial trading port for the world. It seemed clear that if it were not for the endowments afforded by the serendipity of geography, these economies would have developed differently. Studies in the BRICS economies helped inform my view that geography played an integral role in economic development. Of course, the seminal works of fellow countryman, Adam Smith, had informed this view much earlier in my studies. But observing BRICS economic development contemporaneously piqued my interest in this space. That said, it was my interest in craft brewing that truly catalysed my research.

I reached the legal Scottish drinking age (18) in 2008. At this time, I had recently moved from a semi-rural town in the Morayshire region of Scotland and begun my undergraduate studies in the city of Dundee. This roughly coincided with the emergence of the craft beer movement in Scotland. Craft beer provenance in Scotland is often tied to the emergence of *Brewdog*. *Brewdog* opened its first brewery in Fraserburgh, approximately 111 miles from Dundee, in 2007. They quickly gained traction in local beer markets, and consequently were amongst the first beers I consumed on licensed premises. In my first craft beer experiences, I was captivated by the different flavour profiles I did not know a beer could have. Following the rapid success of *Brewdog*, numerous craft breweries began to appear, interestingly many in close geographic proximity to the *Brewdog* site. The rise of different craft breweries encouraged me to

become a craft beer enthusiast. This meant travelling to different craft breweries, speaking with brewers, and of course, sampling the beer. As of this day, I have visited numerous craft breweries across Europe, the USA, Australia, and New Zealand.

While visiting a brewery I would often notice brewers exchanging ideas, sampling beers, and discussing them. I would also notice beers available that were brewed elsewhere or brewed in conjunction with other breweries. At the time, I romanticised the notion of cooperation between craft breweries, as it seemed antithetical to traditional modalities of competition. As my interest grew, I became curious as to what determined who craft brewers would co-operate, or produce a collaboration beer, with. I noticed that craft breweries often appeared to physically cluster, but this did not appear to influence collaboration brewing, which seemed to attract distantly located, and frequently international, partners. From here, my interest in craft beer converged with my interest in the role of geography in economic development. I became curious as to what role the location of a craft brewery played, if any, in its ability to engage in cooperative and collaborative endeavours. This is serendipitous with the research context as, according to Perry (2004), prior New Zealand governments have been similarly interested in the role of geographic proximity in stimulating innovation and competitive advantage⁹.

Economic Case for this Research

The growing economic significance of New Zealand's craft brewing industry represents a clear economic rationalisation for this research.

Informed by research conducted by the New Zealand Institute of Economic Research (NZIER), the Brewers Association of New Zealand report ("Economic Footprint: 2021 Brewing in New Zealand Report," 2021) on the economic significance of brewing industry. On a high-level, the report finds:

- The brewing industry contributed \$2.8b to the New Zealand economy in 2021.
- Brewers add over \$637m to Gross Domestic Product (GDP).
- The brewing industry supports 6,632 direct and indirect jobs.
- Brewing provided the government with \$906m¹⁰ in tax revenue.

Based on international forecasts, the economic significance of the craft brewing industry is fated by an upward trajectory. For example, the USA beer market is projected to reach around \$93 billion USD in 2025, up from \$41 billion in 2018 (Mason, 2021). Assuming proportional increases are realised and

⁹ Geographic clustering of firms began in New Zealand during the 1990's through the Cluster Development Program (CDP). The CDP aimed to support clustering by stimulating partnerships between small groups of firms, primarily in regions of New Zealand outside of Auckland (Perry, 2004).

¹⁰ \$426m in GST and \$480m in excise tax.

transferable to the New Zealand context¹¹, the craft brewing industry will become an increasingly significant constituent in the composition of the New Zealand economy. For that reason, research that seeks to generate knowledge that can secure and promote this industry is invaluable from an economic perspective. Of course, there are also methodological advantages that arise from situating my research in the New Zealand craft brewing industry. I discuss those further in Chapter Three.

Defining a Craft Brewery

Throughout this thesis I will visit and revisit the question of ‘what is a craft brewery?’. Defining a craft brewery is essential for both understanding the research context and for informing my sampling criteria. At this early stage, based entirely on personal perspectives, I define a craft brewery as small, independently owned, brewery. I consider them innovative organisations that produce a beer that is stronger in flavour than their corporately owned counterparts.

Thesis Structure

In Chapter Two, I begin by reviewing perspectives that seek to define what a craft brewery is and what innovation means. The purpose of this part of the review is to provide clarity and contextual support for the rest of the thesis. I continue Chapter Two by reviewing literature in the domains of diffusion theory, the geography of innovation, proximity, and craft brewing. I identify gaps in these areas of literature to develop and rationalise my research questions. In Chapter Three, I discuss the hermeneutic research methods utilised in my study. This chapter delineates my research design; explores the research setting and explains my approach to data collection and analysis.

Moving into results and discussion, Chapter Four builds upon the definitions of *craft brewery* and *innovation*, presented in Chapter Two. Specifically, Chapter Four discusses craft brewer perspectives of these terms and contrasts them with extant literature. In Chapter Five, I address two research questions: (1) What are the roles of proximity in knowledge-sharing between New Zealand’s craft breweries? and (1a) How do other dimensions of proximity relate to geographic proximity in the New Zealand Craft Brewing Industry? Chapter six responds to the following research question: (2) How are craft brewery collaboration modalities influenced by proximity dimensions in the New Zealand craft brewery industry? In Chapter Seven, I conclude the thesis by highlighting my contributions to knowledge, as well as the limitations of my research, and avenues for future work.

¹¹ It is worth noting that COVID-19 lockdowns in New Zealand did not significantly increase the consumption of alcohol. Beer consumption reportedly declined slightly during the country’s pandemic lockdown phase, which has been linked to the closure of pubs and restaurants (Donaldson, 2020b). Yet, this is in contrast to the experiences of my research participants who reported increased demand for craft beer during New Zealand’s first national lockdown.

Chapter Two: Literature Review

“Did your mother never tell you not to drink on an empty head?”
- Billy Connolly

Introduction

This chapter is divided into two parts. In part one, I identify and discuss various definitions of the terms *craft brewery* and *innovation*. This provides contextual support for my research. In part two, I address veins of scholarship directly concerned with the objectives of this thesis: diffusion theory; the geography of innovation; proximity; and craft brewing.

Part One – Defining Terminology

Introducing Terminologies

The term *craft brewery* is not comprehensively defined in the New Zealand context. A complete definition is found in the USA from the American Craft Brewers Association (“What is a Craft Brewery,” 2021). I use the USA definition as a starting point for this discussion for two reasons. (1) *Craft brewery* in the USA is tightly defined. (2) The USA is where the craft beer movement started (Bastian et al., 1999). I contrast the USA definition with emergent perspectives from other national contexts. I develop this discussion further by focusing on the emergence of the craft beer movement in international and domestic contexts. I also discuss the nature of distribution and marketing of craft beer in New Zealand to further build the research context.

Innovation emerges as a defining feature of craft breweries. As such, I follow the discussion of *craft brewery* with another discussion concerning how *innovation* is defined. My discussion of *innovation* intends to highlight disparities in how it is defined and utilised in research. I conclude part one by explaining why existing definitions of *craft brewery* and *innovation* are not ideally suited to the research context, and why I intend to allow definitions of these terms to emerge from data provided by research participants.

What is a Craft Brewery?

According to the USA definition (“What is a Craft Brewery,” 2021), craft breweries are defined by four characteristics.

Table 3 - USA Characteristics of a Craft Brewery

Small	Independent	Innovative	Community
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Small is an adjective that has been used to define other craft industries. For example, in Bell, Blundel, and Koomen (2019), ‘small’ is used to describe the size of craft workshops, and the synonym ‘little’ is used to describe the scale of work carried out by craftspeople. Although, there is no metric for determining smallness in this description. The American Craft Brewers Association, conversely, firmly metricises ‘small’, to establish entry requirements to the association. To be determined sufficiently ‘small’ by the American Craft Brewers Association, a craft brewery in the USA must produce fewer than six-million barrels of beer per annum. For reference, a US barrel contains approximately 31.5 gallons, or 119 litres, of beer. New Zealanders consume 2.46 million US barrels of beer per annum¹². Meaning that if the USA production ceiling were transplanted to New Zealand, it would encapsulate all breweries in the country. No production ceiling presently applies in the New Zealand setting. Although, the Brewers Guild of New Zealand ("New Zealand Beer Awards: Entry Booklet 2021," 2021) does offer some guidance on brewery size. They stipulate that there are four sizes of brewery based on annual production limits:

Table 4 - Brewery Size Guide ("New Zealand Beer Awards: Entry Booklet 2021," 2021)

Brewery Size	Annual Production (Litres)
Micro	Up to 50,000
Small	50,001 to 200,000
Medium	201,000 to 2 million
Large	Greater than 2 million

Relying on the term ‘small’ would mean any brewery producing more than 200,000 litres per annum is not a craft brewery. However, the Brewers Guild of New Zealand does not provide this guidance to distinguish ‘craft’ from non-craft. Instead, it is used to determine Guild membership types and categories for beer competitions. It is therefore insufficient for identifying the ‘craft’ status of a brewery. Likewise, the Brewers Guild of New Zealand offers little guidance on independence as a characteristic of craft breweries.

Craft brewery independence in the USA is qualified by a firm metric. The American Craft Brewers Association stipulates that the ‘craft’ designation cannot be retained if more than 25% of a craft brewery is owned by a non-craft brewing entity. This characteristic is designed to prohibit craft breweries that have been acquired by corporations from being able to appropriate the ‘craft’ moniker. Unlike in the USA, no ownership limitations are prescribed for craft breweries in New Zealand. This is possibly because the Brewers Guild of New Zealand ("Brewers Guild of New Zealand," 2022), represents the interests of both corporate brewers and craft breweries. Consequently, craft breweries, such as *Tuatara*, continue to identify with the ‘craft’ designation after they have been acquired by a corporation (Winter, 2017). The *innovative* and *community* dimensions of the USA definition are less rigidly defined.

¹² ("The alcohol industry in New Zealand," 2020)

Craft brewers in the USA are described as innovative because they brew ‘without precedent’, alter traditional beer styles, and formulate entirely new styles. This approach to brewing represents a departure from the “*mass production, product uniformity, and mass marketing*” (Bastian et al., 1999, p. 552) that characterised mainstream brewing. This departure was engendered by beer consumers who had become dissatisfied with the offerings of corporately owned breweries (Mastanjević et al., 2019), and demanded beer with distinct flavour profiles (Bastian et al., 1999). In other words, evolving consumer tastes have galvanised an innovative approach from craft breweries. By extension, consumers seem to have become a source of legitimacy for craft breweries. Legitimacy in an organisational setting can be described as an alignment of organisational values and the values of the organisation's social context (Parsons, 1956). Legitimacy is considered a strategic resource required for the survival of an organisation (Baum & Oliver, 1991). Consumers are infrequently considered a source of legitimacy in scholarship (Randrianasolo & Arnold, 2020), but they are stakeholders (Suchman, 1995) nonetheless, from whom legitimacy can be derived (DiMaggio & Powell, 1983). A recent example of craft breweries seeking consumer legitimacy is reflected in the meteoric rise of hazy IPAs¹³. Despite the style being notoriously difficult to brew (Becker, 2017), craft breweries continue to produce it, responding to consumer expectations (Donaldson, 2019). The community dimension of the USA craft brewery definition speaks to the importance of being neighbourly in a local setting.

‘Community’ reflects a notion that craft breweries in the USA frequently engage in local sponsorships, philanthropy, and volunteerism. Similar community dedications were echoed in New Zealand craft breweries that isolated a portion of their production capacity to distil hand-sanitiser (Alves, 2020) during the early stages of the COVID-19 pandemic. Neighbourly behaviour carries a veneer of altruism, but these actions must be understood in the context of commerce. Craft breweries, particularly in their early years of operation, depend heavily on local custom (Bastian et al., 1999), meaning that appearing committed to the local community is prudent for their survival. I proceed to introduce *craft brewery* perspectives from other national settings, to seek areas of convergence and divergence with the USA definition.

Craft brewery research contextualised in the Australian (Alonso et al., 2018); Italian (Cardoni, Dumay, Palmaccio, & Celenza, 2018; Esposti, Fastigi, & Viganò, 2017); German (Kraus et al., 2018); and Welsh settings (Lotfi et al., 2021) discuss craft breweries analogously with Small-Medium Enterprises (SMEs). This supports the notion that craft breweries are ‘small’. Although, ‘small’ is qualified by SME characteristics, which often vary between national settings¹⁴. Meaning these perspectives of *craft brewery*

¹³ A hazy IPA is a well-hopped beer with a cloudy appearance that frequently, but not exclusively, carries distinct tropical fruit flavours.

¹⁴ In New Zealand, an SME is defined as an organisation with fewer than 20 employees (*SMEs in New Zealand: Structure and Dynamics 2011*, 2011). Whereas in Europe and the USA SMEs are defined by an upper limit of 250 and 500 employees respectively (OECD, 2005).

are not transferable to other contexts. In the Irish (McGrath & O'Toole, 2013) and Belgian (McGrath & O'Toole, 2018) contexts, craft brewery 'smallness' is defined by a production ceiling of 20,000 hectolitres, the equivalent of 16,800 USA barrels, per annum. This production limit is applied to the Irish setting because breweries receive tax refunds if they produce fewer than 20,000 hectolitres (McGrath & O'Toole, 2013). It is unclear why McGrath and O'Toole (2018) apply the same production limit to the Belgian context. Nevertheless, comparing these to the USA definition supports the notion that a production limit in New Zealand requires context sensitivity. The view that craft breweries are innovative is widely accepted in other national contexts.

In the Peruvian craft brewing sector (Alonso, Kok, & O'Shea, 2020) it is argued that differentiation and innovation strategies are integral to the success of a brewery. This supports the *innovation* characteristic of the USA definition. In the Scottish setting (Cunningham & Barclay, 2020), craft breweries are described as creative. There is a tendency to equate creativity and innovation (Govindarajan, 2010), but they are differentiated by execution. A new idea is creative, but it is not innovative until executed (Levitt, 2002). Therefore, creativity in Scottish craft brewing implies an innovation potential. Cunningham and Barclay (2020) also support the USA definition, arguing craft breweries are independent. Independence in this setting is not qualified by a specific ownership limitation but is instead described as a separation from corporate breweries. Defining characteristics not represented by the USA definition emerge from the Croatian and Scottish settings.

Cunningham and Barclay (2020) characterise craft breweries with camaraderie, suggesting that craft brewers are inherently friendly towards one another. Inherent friendliness between craft brewers is suggestive of a community based on shared praxis, otherwise known as a community of practice (Gertler, 2003). This has important implications for the roles of proximity dimensions that I discuss later in this chapter. In the Croatian setting, Mastanjević et al. (2019) characterises craft breweries by the full-bodied flavour and aromatics of craft beer when compared to corporately produced beer. This suggests that craft breweries may be meaningfully distinct from corporations based on the sensory experience of the beer they produce. However, flavour and aroma are matters associated with taste, meaning that distinguishing craft from corporate beer may be highly subjective. The final contrast with the USA definition emerges from the view that craft breweries tend towards collaboration.

Craft breweries are not explicitly defined as collaborative in the works mentioned this far. However, it is worth noting many studies concerned with craft brewing are conducted via the lens of collaboration (Alonso et al., 2018; Cardoni et al., 2018; Cunningham & Barclay, 2020; Kraus et al., 2018; Lotfi et al., 2021). The prominence of collaboration in this territory of scholarship indicates that craft breweries may naturally tend towards collaboration. If accurate, this would represent additional variance with the USA definition.

Reflecting on my definition of a craft brewery, mentioned in Chapter One, I note that my definition is broadly consistent with academic and non-academic perspectives, in that craft breweries are considered

small (to varying degrees), independently owned, innovative, and purveyors of a comparatively more flavoursome product. I had not, however, initially considered the community of practice aspect detected in the Scottish setting.

The Emergence of Craft Brewing

As I touched upon in the previous section, the USA is frequently cited as the genesis of the craft beer movement. On one hand, the craft beer movement was driven by consumers, seeking a beer experience unavailable from the mainstream brewing sector (Bastian et al., 1999). On the other, the inception of craft beer in the USA was a watershed moment that marked a return to traditional ‘European’ brewing. By the 1960s, breweries in the USA were producing large volumes of light-bodied, larger-style beers. In pursuit of efficiencies, many breweries had replaced the malt content of their beers with cheaper alternative carbohydrates, such as rice or corn. While cost-efficient, these brewing techniques compromised traditional ‘European’ beer flavour profiles. Fritz Maytag’s purchase of Anchor Brewing Company¹⁵ in 1965 has been identified as something of a return to ‘European’ beer styles in the USA. It is also cited as the point of origin of craft beer in the USA (Elzinga, Tremblay, & Tremblay, 2018). In other words, despite frequent associations with *innovation*, craft beer in the USA initially represented a return to tradition. Notions of tradition have influenced the emergence of craft beer in other international contexts.

Germany has a long history of beer brewing and consumption¹⁶. Brewing in Germany has been punctuated by *Reinheitsgebot* – or German Purity Law, as it is known in the English-speaking world. German Purity Law (1516) stated that beer must only consist of the four core brewing ingredients: water, yeast, malt, and hops. Naturally, this prohibited the formulation of prototypes and innovative beer styles. Officially, German Purity Law would be abandoned in 1987, but it continues to inform institutional and expected norms in the German brewing industry (Depenbusch, Ehrich, & Pfizenmaier, 2018). Notions of beer puritanism amongst consumers have made the German beer market challenging for would-be German craft brewers. Nevertheless, craft brewers have made inroads into the German brewing industry. At present, the German beer market is one of an inter-generational divide, in which young Germans are willing craft beer consumers, while older Germans maintain norms and expectations informed by German Purity Law (Depenbusch et al., 2018). Unlike the USA, the emergence of craft beer in Germany can be viewed as a response to traditionalism. In other international contexts, such as Italy, the emergence of craft beer signposted broader cultural changes.

Historically, Italy has not been a large beer-consuming nation, instead favouring more culturally significant drinks, namely wine (Garavaglia, 2018). Yet, craft breweries have gradually diffused throughout Italy since the early 2010s. Similar to Germany, craft beer is broadly consumed by younger generations of Italians, while older Italians maintain consumption of locally produced wine, suggesting,

¹⁵ San Francisco

¹⁶ Weihenstephaner brewery in Bavaria has been in operation since 1040.

again, that the emergence of craft beer is a response to traditional consumption habits. In New Zealand, however, the changing nature of a longstanding market duopoly created the opportunity for craft breweries.

As discussed in the prologue to this thesis, New Zealand's beer landscape has been dominated by two major, internationally-owned, corporate breweries – *Lion* and *Dominion Breweries*. The establishment of Mac's¹⁷ brewery is cited as the first commercial attempt to break the *Lion/DB* market duopoly – it is also cited as New Zealand's first 'craft' brewery (Murray & Overton, 2016). Mac's participation in the beer market was, however, obstructed by two main issues, (1) difficulty accessing supplies, such as glass bottles, and (2) difficulty accessing retail outlets to sell beer. Regulatory reforms of the 1980s, made it possible to sell beer in supermarkets, which expanded the landscape of distribution opportunities. However, the distribution constraints continue to be a feature of the contemporaneous New Zealand beer landscape and have influenced the distribution strategies adopted by craft breweries.

Craft Beer Distribution in New Zealand

New Zealand's corporate breweries operate contracting arrangements with hospitality venues. The nature of these contracts is such that a brewery will establish and maintain the beer-pouring equipment, such as pipes, kegs, and taps, in a pub. In exchange, the pub agrees to exclusively sell the beer of that brewery. Hence, in New Zealand, beer consumers will frequently refer to hospitality venues as a '*Lion* or a *DB* bar' (Donaldson, 2012). By monopolising taps in hospitality venues, corporate breweries eliminate the opportunities for competitor breweries. For craft breweries, this has limited distribution options, but has informed two distribution strategies:

(1) The sale of craft beer in supermarkets and liquor stores

The Sale of Liquor Act (1989) enabled the sale of beer in supermarkets and liquor stores and thereby established a distribution opportunity for craft breweries. Supermarkets remain an important distribution channel for craft breweries, accounting for 18% of all beer grocery sales in 2021 (O'Connell, 2022). However, sales of beer through supermarkets and liquor stores only permit access to the 'home drinking' beer market. Access to hospitality venues, where beer margins are typically greater, remains obstructed by corporate brewery contracting arrangements.

(2) The establishment of dedicated hospitality venues

Creating a consistent distribution channel for kegged beer, several craft breweries in New Zealand have established their own hospitality venues. Some breweries have established a small bar within the brewing facility, labelling them 'tap rooms' or 'cellar doors' (Donaldson, 2012), while others have established hospitality venues outside of the brewing facility. This has given rise to a change in the hospitality

¹⁷ Originally established in Nelson, New Zealand, and now known as MacCashin's

landscape in New Zealand to include craft ‘brewpubs’ and gastro ‘brewpubs’ with a secondary emphasis on food accompaniments to craft beer. Craft breweries have also adopted marketing strategies distinct from their corporate counterparts.

Craft Beer Marketing in New Zealand

Corporate brewery dominance in the landscape of beer distribution in New Zealand is similarly reflected in the marketing of beer, which has broadly focused on advertising and sponsorship of events commonly associated with male viewership (Kuehn & Parker, 2021). Simply put, aligning with New Zealand’s favourite pastime, rugby, has been a highly effective marketing technique utilised by corporate breweries. Likewise, well-formed advertising campaigns that bastardise significant moments in New Zealand’s modern history, have been effectively levered in the marketing of corporate beer. Conversely, the marketing of craft beer has assumed an approach that is relatively cost-effective and targets a younger, and more diverse demographic. Principally, this has involved heavy use of social media marketing channels, such as *Instagram* and *Facebook*, as well as specialist social media platforms, such as *Untapped* (Foster, Kirman, Linehan, & Lawson, 2017). Perhaps the most effective form of craft brewing marketing, however, is reflected in strategic positioning (Porter, 1998b) in which craft breweries *position* themselves as the alternative to corporate, mass-produced, uniform, flavourless beer produced by large breweries (Bastian et al., 1999).

Defining Innovation

Innovation is a defining characteristic of craft breweries in various national contexts. It is knowledge-intensive (Quintane, Martín-de Castro, Mitch Casselman, Sebastian Reiche, & Nylund, 2011), meaning it is a concept central to the research I present in this thesis. However, innovation is disparately defined in extant scholarship:

“The term ‘innovation’ is notoriously ambiguous and lacks either a single definition or measure.” (Adams, Bessant, & Phelps, 2006, p. 22)

Such ambiguity is a consequence of innovation being studied in a variety of different disciplines (Quintane et al., 2011). The result is that *“the diversity of definitions leads to a situation in which there is no clear and authoritative definition of innovation.”* (Baregheh, Rowley, & Sambrook, 2009, p. 1324). Empirical studies either do not include a definition of innovation, or a definition is arbitrarily selected from the extant literature (Adams et al., 2006). This makes comparing innovation studies challenging (Quintane et al., 2011). In this section, I examine numerous innovation perspectives and conclude by explaining how I shall define *innovation* in this research.

Recognising that *innovation* is incongruently defined in extant scholarship, I strip back the term by examining it through an etymological and semantic lens. I follow with a discussion of academic perspectives, primarily from the domains of management and economics.

Etymologically, *innovation* has provenance in the Latin *Innovare* and *Innovatio*, as shown in the diagram below:

Figure 1 - Etymology of Innovation. Created based on: Harper (2020)



Innovare means to change or to renew, while *Innovatio* refers to renewal and alteration (Harper, 2020). Harper (2020) follows by stating that innovation means “a novel change, experimental variation, new thing introduced in an established arrangement.” From an etymological view, innovation is not only that which is new but something that is introduced. There is also an association with change, indicating that innovations must engender change when introduced. Specifically, the etymological view suggests that innovation is defined by three criteria: *new*, *introduced*, and *change*. If a ‘new thing’ fails to be introduced or stimulate change, it is not clear if it can be defined as an innovation. As I navigate this section, I demonstrate how these notions of introduction and change can be subjective. Before this, I discuss semantic views on *innovation*.

I examine *innovation* via a semantic lens by presenting four definitions from reputable online dictionaries. Once presented, I contrast these perspectives with one another, and with the etymological view of innovation.

Table 5 - Semantic Views of Innovation

Cambridge (2022)	“(the use of) a new idea or method”
Oxford (2022)	“The introduction of new things, ideas or ways of doing something”
Merriam-Webster (2022)	“a new idea, method, or device” “The introduction of something new”
Collins (2022)	“a new thing or a new method of doing something”

Semantic perspectives indicate synonymy with the idea that innovation represents newness. Such newness pertains to tangible objects, or devices, as well as intangible methods or ideas. It is unclear if the newness associated with innovation is subjective or entirely new. One perspective (Collins, 2022) focuses exclusively on the newness of innovation, making no concessions for the introduction or use of the ‘new

thing’, unlike the etymological perspective (Harper, 2020). The first definition provided by Merriam-Webster (2022) is congruent with Collins (2022) but provides a secondary definition that focuses on the ‘introduction’ of the ‘new thing’. This suggests innovation is not only the ‘new thing’ itself, but the process of introducing the ‘new thing’ may also be considered innovation, supporting the etymological view. However, semantic perspectives represent a departure from the etymological view that innovation should create change. Instead, from a semantic view, ‘new things’ that stimulate change are the same as new things that have no impact. This creates an issue for the identification of innovations.

For instance, semantic perspectives converge on the idea that innovation can be both a tangible ‘thing’ or an intangible idea or method. But if the new idea or method has no impact nor produces any change, it may not be possible to identify, because nothing has been altered as a consequence of its introduction. As Mars (2013) suggests, semantic perspectives of innovation feel incomplete and lack the sophistication and nuance required to define a complex academic concept. Sympathetic to that sentiment, I follow Mars (2013) and recognise a need to advance this discussion with academic perspectives of innovation.

I discuss nine academic perspectives of innovation by contrasting them with one another and with the semantic and etymological views. The purpose of contrasting is to demonstrate the degree of variance between academic and non-academic perspectives. I begin with Schumpeter (1934) that argues innovation can be considered the introduction of a new method; product; or process. By extension, innovation stimulates a type of change known as creative destruction (Schumpeter, 1942). Creative destruction is a process of “*industrial mutation*” (Schumpeter, 1942, p. 73) that creates change by destroying old things and creating new things. Schumpeter (1934, 1942) is therefore reconcilable with the etymological view of innovation, as it recognises innovation represents something new that is introduced and impactful, by engendering creative destruction. Schumpeter (1934) is also consistent with the semantic recognition that innovation represents both tangible and intangible ‘new things’. This view is similarly reflected by Thompson (1965).

Thompson (1965, p. 2) defined innovation as “*the generation, acceptance, and implementation of new ideas, processes, products, or services.*” He also stated that “*innovation implies the capacity to change or adapt*”. Congruent with Schumpeter (1934), Thomson’s view supports the notion that innovation represents ‘new things’, tangible or otherwise, that are introduced and stimulate change. There is a slight distinction, however, in that Thompson (1965) identifies innovation as having the ‘capacity’ for change, rather than causing said change. Drucker (1985) places greater emphasis on the change aspect of innovation.

Drucker (1985) argues that innovation is synonymous with change. Specifically, change that can create new dimensions of performance. Drucker’s view represents a contortion of Schumpeter (1942) and Thompson (1965), as it suggests innovation and change are interchangeable terms, rather than change being a consequence of innovation. Additionally, Drucker (1985) detaches *new* from ‘new things’ and designates it to the performance-based outcome resulting from the innovation. Drucker does not stipulate

if the new dimensions of performance must be positive. Excluding notions of positive outcomes from definitions suggests innovation can be considered amoral. Meaning it is immaterial if the outcome of the innovation (or change) has a positive or negative impact. Drucker's assignment of *new* to the changing dimension of performance implies that the agent of that change, the 'new thing', does not itself have to be entirely new. Van de Ven (1986) develops this perspective further.

Van de Ven (1986) argues that innovations are new ideas or reconfigurations of exhausted ideas. He states, "as long as the idea is perceived as new to the people involved, it is an innovation even though it may appear to be an imitation of something that exists elsewhere." (Van de Ven, 1986, p. 592). He adds that "included in this definition are both technical innovations (new technologies, products, and services) and administrative innovations (new procedures, policies, and organisational forms)." This perspective does not accommodate the view of *innovation* being introduced or inducing change. Instead, the focus is directed at the idea innovation is new as well as both tangible and intangible. *New* here, is considered in subjective rather than absolute terms. This means so long as something is perceived as *new* then it may be classified as an innovation. This notion of subjective newness is mirrored by West and Farr (1990).

West and Farr (1990) describe innovation as the introduction and application of products, processes, or systems, new to the implementing firm, designed to benefit it and its stakeholders. It is implied that inter-firm mimicry may still be considered innovation. Consequently, West and Farr (1990) support Van de Ven (1986), by indicating that innovations do not have to represent entirely 'new things'. However, the distinct contribution of West and Farr (1990) is the view that innovations are intended to benefit the firm and its stakeholders. This is a departure from the stance that innovation is amoral. Mars (2013, p. 4) develops this perspective further, arguing that if a 'new thing' causes "more harm than good" it cannot be considered innovation. This presents a challenge of determining when an innovation has caused more harm than good, and whom or what has been the recipient of this good. In other words, the subjectivity of *good* means that determining what qualifies as an innovation is a matter of individual perception. A similar issue is evident in the problem-solving perspective of innovation.

The problem-solving perspective of innovation (Nickerson & Zenger, 2004) argues that problems represent opportunities for value creation because firms create and utilise new knowledge to solve those problems (Nickerson, Yen, & Mahoney, 2012). This is significant because the utilisation of new knowledge is indicative of innovation (Quintane et al., 2011). However, the identification of problems is frequently challenging (Von Hippel & Von Krogh, 2016) and it is not immediately clear if a problem has been solved, or if the realised benefits outweigh the costs of solving the problem. This is interesting because if the costs to the organisation of solving the problem are greater than the realised benefit, it can be said that the resulting innovation has caused "more harm than good" (Mars, 2013, p. 4). Further divergence in innovation perspectives is evident in Bledow, Frese, Anderson, Erez, and Farr (2009) where the noun *intention* is introduced to the discussion.

Bledow et al. (2009, p. 1) state that innovation is “*the development and intentional introduction of new and useful ideas by individuals, teams, and organisations.*” It is implied that if a ‘new thing’ is introduced incidentally it is not considered an innovation. For example, the popular children’s toy, *Play-Doh*, was introduced as a product intended to clean walls. It was only when children began to play with the cleaning material that it was repurposed and marketed as a toy (Kindy, 2019). It is unclear under this definition if consequential innovations, such as *Play-Doh* could be considered innovative. Quintane et al. (2011) recognises the incoherency generated by competing innovation definitions.

Quintane et al. (2011) argue that innovation should be defined simply as ‘new knowledge’ that is contextually new and demonstrably useful. It is argued because innovation is knowledge-centric (Kantar, 1988), the terms *knowledge* and *innovation* should be treated with some synonymy. This is consistent with the stance that innovations need only be perceptually new (Van de Ven, 1986; West & Farr, 1990). In its characterisation of *innovation* being useful, it is also aligned with the view that innovation is associated with positive outcomes (Mars, 2013). There is a relative simplicity in this definition, particularly when compared with binal definitions of innovation, such as (Kahn, 2013).

Kahn (2013, p. 454) defines *innovation* as two separate concepts: “*1) a new idea, method, or device. 2) the act of creating a new product or process, which includes invention and the work required to bring an idea or concept to final form.*” This means innovation is not only a ‘new thing’, but it is also the process of creating the ‘new thing’. This perspective is reflected in earlier works (Gupta, Tesluk, & Taylor, 2007) that suggest the actions taken by a firm to develop an innovation are also innovative. Using *innovation* for two different conceptualisations promotes incoherence as to what is being discussed in empirical research. Overcoming this incoherence requires researchers to either explicitly state and justify the definition of innovation they elect to follow or formulate their own definitions. In this thesis, I subscribe to the latter of these options.

Summary of Terminologies

In this section, I have presented a series of competing definitions that demonstrate the incongruency with which innovation is defined. I have demonstrated disparity at the academic level, but also at the semantic and etymological level. I echo Adams et al. (2006) and Baregheh et al. (2009), noting these disparities make it challenging to compare empirical works in the innovation space. Typically, innovation research either does not present a definition of innovation or selects one from the existing corpus of innovation knowledge. I could select one of the definitions presented in this section, but such an action would be arbitrary. Instead of making an arbitrary selection, in Chapter Four I discuss definitions of *innovation* provided by research participants, thereby enabling a context-sensitive view of *innovation* to emerge from the New Zealand craft brewing industry. In turn, this provides contextual support for the evidence I provide in subsequent findings and discussion chapters. I take the same approach to definitions of *craft brewery*. Extant definitions in this domain are more congruent than innovation, but there are strong indications that craft brewery definitions should be contextually sensitive. Since a *craft brewery* definition

does not exist in the New Zealand context, one cannot be re-appropriated. Similar to *innovation*, a discussion of *craft brewery* definitions from my research participants provides contextual insight which supports my findings and discussion chapters.

Part Two – Proximity, Innovation, and Craft Brewing

Introduction

Diffusion theory (Hagerstrand, 1967) and geography of innovation (Feldman, 1994) literature represent a view that geographic proximity is central to the diffusion of knowledge; knowledge-sharing; and innovation performance. While proximity literature (Balland et al., 2015; Balland, Boschma, & Frenken, 2020; Boschma, 2005) occupies a critical stance against the supposed significance of geographic proximity in knowledge-sharing, as well as collaboration. Proximity literature is punctuated by the view that geographic proximity is ‘unnecessary and insufficient’ for knowledge-sharing (Boschma, 2005).

In this section, I discuss these three areas of literature and incorporate works from the craft brewing scholarship. During this discussion, I highlight the limitations of, and gaps within, existing scholarship. The limitations and gaps identified inform the research questions I present at the end of the chapter. I begin by discussing diffusion of innovation, followed by the geography of innovation scholarship, I then proceed to discuss proximity literature. Finally, I discuss the nascent body of craft brewing research, before delineating the research questions that guide the rest of the thesis.

Diffusion of Innovation

Diffusion theory is concerned with the transmission and spread of ideas and innovations through a social system (Rogers, 1962). It is a valuable tool for understanding how certain innovations and ideas spread (diffuse), as well as the enablers and disablers of their diffusion. Innovation diffusion represents early work exploring the relationships between geography and the transmission of knowledge. (Rogers, 1962). It is therefore an essential domain of thought for understanding the ideas discussed in this chapter and locating this thesis in extant literature. Innovation diffusion has provenance in the French school of sociology, represented by *The Laws of Imitation* (De Tarde, 1903). In *The Laws of Imitation*, De Tarde argues that individuals in society are imitative, and therefore appear similar. Imitative behaviour extends to all aspects of society, including innovation. Innovations are continually imitated and replicated by actors in a society, in a process described as diffusion. Arguably, the terminus of such imitation is a uniformed society where innovation is not truly new, only an imitation of something that already exists. However, De Tarde (1903) notes that imitative behaviours are favourable to innovation because repeated imitation leads to gradual variation and improvement. Specifically, through imitation, an actor may alter and improve an existing innovation to the point that it is materially distinct from its source. Ryan and Gross (1943) represent an early examination of innovation diffusion in the USA agricultural sector.

Ryan and Gross (1943) have been described as having provided the “*basic framework for the diffusion model*” (Rogers, 2004, p. 13). The study sought to understand the rate and how a hybrid corn-seed innovation diffused through two communities of farmers in Iowa, USA. The study found that the rate at which the farmers adopted the innovation resembled an S-shaped curve, with 10% adopting the innovation in the first five years and then 40% adopting it in the succeeding three years. Adoption rates then levelled off as the number of remaining farmers who had not yet adopted the seed diminished. In total, it took the seed innovation 13 years to fully diffuse through both communities. Farmers who adopted the seed innovation early, termed early adopters, typically owned large farms, were more highly educated, and enjoyed higher incomes. Early adopters were also found to frequently travel to Iowa’s state capital, *Des Moines*. The most significant finding, as far as this research is concerned, is that close physical proximity between farmers appeared to enable the adoption of the seed innovation. The physical closeness of farmers enabled in-person dialogue regarding the seed’s usage. Farmers discussed their personal experiences of the innovation with neighbouring farmers, thereby influencing their decision to adopt it (Ryan & Gross, 1943). Communication is therefore identified as an important mechanism in the diffusion process.

Ryan and Gross (1943) argue communication has a twofold influence on innovation diffusion. Firstly, via mass communication as an initial source of information, and secondly via interpersonal ties. Speaking to the former, Lazarsfeld (1944) argues that the role of mass communication is to inform influential actors, termed opinion leaders. Opinion leaders via a network of interpersonal ties, disseminate the information to others, in a pattern resembling the diffusion of the hybrid seed innovation. This view has been disputed by arguments (Deutschmann & Danielson, 1960; Lionberger, 1960) that suggest mass media transmits principally to the individual, foregoing opinion leaders. Nevertheless, interpersonal communication remains important for reaching individuals not informed via mass communication sources (Ryan & Gross, 1943). However, the effectiveness of interpersonal communication is contingent upon factors of homophily and heterophily.

Homophily is characterised as similarity and is concerned with the idea that actors tend to communicate with others that are similar to themselves (McPherson, Smith-Lovin, & Cook, 2001). Convergence in characteristics such as religion; education; social status; financial status; language; and culture represent the extent of homophily between actors and determines their ability to communicate effectively (Lazarsfeld & Merton, 1954). This is because homophilous actors exhibit higher levels of trust, perceived quality of friendship; intensity of communication; and commitment to a relationship (Ahlf, Horak, Klein, & Yoon, 2019). Conversely, heterophily is characterised by dissimilarity (Rogers, 1962), and can impede effective communication between actors. Too much homophily may also impede effective communication. This means for effective communication to be enabled, actors must represent a combination of heterophily and homophily.

Rogers (1962) argues that entirely homophilous actors cannot engage in effective communication because they have no disparities in their existing knowledge. Paradoxically, heterophily between actors represents

opportunities for the exchange of disparate knowledge. Dissimilarities in characteristics such as language or culture may prevent its transmission. The ideal condition for the communication of knowledge is where actors are homophilous in all aspects other than their knowledge (Rogers, 1962). This is a crucial point to recall during the upcoming discussion of cognitive proximity. Briefly, actors with disparate knowledge are described as cognitively distant. Cognitive distance can promote innovation performance between actors (Balland et al., 2022), as they have mutually novel knowledge to share with one another. These dynamics are evident in the hybrid corn study.

The Iowan farmers in Ryan and Gross (1943) were homophilous in that they shared a culture; language; and profession. While heterophily between the farmers was represented by their knowledge and experience of the hybrid seed innovation. In other words, homophilic characteristics enabled the communication of disparate knowledge. Homophilous characteristics, particularly language and culture, are frequently associated with geographic location (Feldman, 1994). Yet, neither geography nor spatial factors were considered in the hybrid corn study (Valente & Rogers, 1995), leaving the role of geography in the diffusion of the seed unclear.

Hagerstrand (1967) sought to understand the relationship between geography and innovation diffusion. He argues that the process of innovation diffusion begins with an actor who is aware of the innovation. The actor then begins to diffuse the innovation through a social system. The actor Hagerstrand (1967) identifies is similar to an opinion leader who disseminates knowledge via their network of interpersonal ties (Lazarsfeld, 1944). Concurrently, Hagerstrand (1967) argues that to whom the innovation diffuses is contingent upon the ‘neighbourhood effect’. The neighbourhood effect refers to the heightened likelihood for communication to occur between spatially proximate actors. Therefore, Hagerstrand (1967) argues that innovations initially diffuse through spatially proximate networks of actors, indicating that geographic proximity is fundamental to the diffusion process. Empirical works are supportive of this view.

For example, Jaffe et al. (1993) find that the knowledge contained within patent applications initially appears to diffuse locally. Locality then fades over time and knowledge gradually diffuses to geographically distant locales – albeit rather slowly. More contemporary research (Fadly & Fontes, 2019) coalesces this perspective, finding that renewable energy innovations demonstrate a tendency to diffuse to spatially proximate locales. However, Morone et al. (2019) find that spatial proximity is independently insufficient for the diffusion of innovation. Instead, diffusion can be prohibited by certain ‘barriers’. Alluding to these barriers, Feldman et al. (2015) find that while innovations diffuse locally, their diffusion is contingent upon the cognitive capabilities of actors and their social connectedness. Altogether, these findings reflect the sentiment that geography is ‘insufficient’ (Boschma, 2005), but fall short of identifying what the role of geographic proximity is in the diffusion of innovation.

Recognising that factors such as social connectedness may influence innovation diffusion makes isolating the role of spatial (geographic) proximity challenging. Social connections are “*likely to be located in physical space*” (Lengyel et al., 2020, p. 9), meaning that when an innovation diffuses through a social

network, it may spuriously appear as though it is diffusing through a geographic network. Therefore, determining the role of geographic proximity in innovation diffusion requires disentangling it from social connectedness. This represents a challenge for those operating in the quantitative domain of diffusion research (Lengyel et al., 2020). Nevertheless, prominent literature in the domain of the geography of innovation (Feldman, 1994) has argued that geography remains central to innovation, knowledge-sharing, and diffusion.

Geography of Innovation

The significance of geographic and spatial factors is espoused in the seminal work, *The Geography of Innovation* (Feldman, 1994). Feldman argues, consistently with Hagerstrand (1967), that innovations demonstrate a tendency to cluster in physical space (Audetsch & Fledman, 1996). Innovation spatially clusters for several reasons, including the immovability of tacit knowledge, logistics, and natural resources (Feldman & Kogler, 2010). Tacit knowledge is defined as knowledge that is difficult to communicate and understand. It is expressed via non-verbal and written means, such as observation, imitation, and shared experiences. Codified knowledge, conversely, is knowledge that has specified terminology and is communicated precisely (Nonaka, 1991). Tacit knowledge cannot be easily codified (Polanyi, 1966), making it difficult to transmit across long distances (Asheim & Gertler, 2005). Accessing tacit knowledge, therefore, requires close physical proximity between actors (Gertler, 2003).

Shared tacit knowledge is frequently concerned with problem-solving (Feldman, 2000). Problem-solving represents an opportunity for knowledge creation (Nickerson & Zenger, 2004). This means generating knowledge can be tied to location and physical proximity of economic actors. This is why smaller firms, such as craft breweries, and firms in the early stages of an industry lifecycle are more likely to appropriate local sources of knowledge when innovating (Feldman, 1994). Local knowledge sources are accessed via established locally embedded networks or serendipitous interactions with other local actors (Feldman & Kogler, 2010). This perspective represents a stark distinction from the view that globalisation has diminished the significance of geography in innovation.

Sentiments like ‘global village’ (McLuhan, 1962), ‘the death of distance’ (Cairncross, 2002), and ‘the world is flat’ (Friedman, 2005) have characterised the argument that advances in communications technology and international travel have created a globally level playing field for commerce, and while location enables ‘friendly’ face-to-face interactions, it is no longer significant (Cairncross, 2002). However, according to Storper and Venables (2004), face-to-face interaction remains preferable as it facilitates the transmission of tacit knowledge; permits real-time discussions, and feedback, and supports the development of trust. More recent research continues to support the importance of face-to-face interactions in the development of inter-firm trust (Harald Bathelt & Henn, 2021; Growe, 2019). This suggests international travel and digital communication have not diminished the significance of locality in the exchange of knowledge. It is, however, important to note that physical proximity to knowledge does not grant access to it by default (Audretsch & Keilbach, 2008). Social connectivity and cognitive

capabilities mediate access and comprehension of local knowledge (Feldman & Kogler, 2010; Feldman et al., 2015). However, even when local knowledge is accessible and comprehensible, it may be insufficient to sustain local innovation.

Maskell (2014, p. 883) argues that local knowledge cannot be eternally self-sufficient, stating that “*even the most successful local clusters were unable to thrive in splendid isolation.*” This means that local knowledge, acquired by being physically present, termed ‘local buzz’, needs to be buttressed with channels of communication with distantly located knowledge sources, termed ‘pipelines’ (Bathelt, Malmberg, & Maskell, 2004). Empirically, this is supported by research that finds that “*firms rely to a high extent on regional as well as international knowledge.*” (Tödtling, Grillitsch, & Höglinger, 2012, p. 342), and “*distant sources of knowledge can contribute even more to the creation of local knowledge*” (Kang & Dall’erba, 2016, p. 375). Accessing distant knowledge can be a challenge, especially when it is tacit (Maskell, Bathelt, & Malmberg, 2006). Although, it is possible to navigate geographic distance via communities of practice.

Gertler (2003, p. 86) defines a community of practice as “*groups of workers informally bound together by shared experience, expertise, and commitment to a joint enterprise.*” Wenger and Snyder (2000) characterise communities of practice by a dedication to improving what they do via frequent interactions with one another. In that vein, communities of practice focus on problem-solving, and in the process of doing so produce tacit knowledge (Gertler, 2003). Communities of practice are demonstrably valuable in supporting knowledge-sharing, as well as relationship building (Comunian, 2017). But it has also been found that communities of practice can be dysfunctional, especially where knowledge is concerned (Mládková, 2015). Communities can become characterised by ‘imperialism’, meaning they refuse to share or remain open to, new knowledge. This has a prohibitive effect on innovation performance (Wenger, McDermott, & Snyder, 2002). Assuming such communities are functional, Feldman and Kogler (2010) argue they can share knowledge, including tacit knowledge, across geographic distances. This is because distantly located communities may overcome physical distance by iteratively meeting in person, on platforms of temporary agglomeration. Simply put, members of a community of practice may travel to meet with other community members, and in doing so create and share tacit knowledge. This means that a community of practice may be a substitute for geographic proximity where knowledge-sharing is concerned (Amin & Roberts, 2008). This is reflective of the roles of temporary geographic proximity which I discuss later in this chapter. The tacitness of knowledge is not the only explanation for the spatial clustering of innovation. Logistics and natural resource-based advantages provide further rationalisations.

Innovation may spatially cluster for reasons of logistics (Feldman & Kogler, 2010). This rationalisation is frequently the case for manufacturing sectors. Physical co-location of firms in the manufacturing supply chain reduces transportation costs and time (Lavoratori, Mariotti, & Piscitello, 2020). Innovation in manufacturing, therefore, tends to be geographically concentrated. However, the most extreme instances of innovation clustering are frequently the result of natural location-based advantages (Ellison & Glaeser,

1997). For example, access to a port or natural resources may cause innovation to cluster. This is important because, in the New Zealand craft brewing industry, location-based natural resource access is embodied by the commercial hop cultivation that occurs in the Tasman Bay region.

Access to brewing ingredients is generally not restricted by geographic location. To illustrate, North Korea has a growing craft brewing industry (Miller, 2019) despite a general scarcity of resources. However, access to freshly grown hops is highly location-dependent. This is because commercial hop growing requires 13-15 hours of daily sunlight, meaning that growth can only occur between 35-55 degrees of the Earth’s latitude. In other words, commercial hop growing can only occur in select locations on the planet. Serendipitously for this research and New Zealand, one such location is Tasman Bay. This region does represent an agglomeration of craft breweries, and it can then be inferred that innovation is also clustered there as a consequence. It is therefore an important region for this research. However, as proximity literature (Boschma, 2005) argues, physical agglomeration, otherwise known as geographic proximity, may not be independently sufficient to support the knowledge-sharing that sustains innovation.

Proximity Dimensions

Proximity represents a contemporary vein of literature, operating on the edge of knowledge in terms of understanding how proximities influence inter-firm knowledge-sharing and collaboration. It, therefore, presents substantial opportunities for knowledge contributions. As a domain of knowledge, *proximity* builds upon several ideas discussed in the previous sections. Boschma (2005) is a widely cited piece of scholarship in this territory. It establishes a basis on which most work in this area is conducted. Boschma (2005) argues that to understand the role of geographic proximity in inter-firm knowledge-sharing, consideration must be given to other dimensions of proximity. This logic has since been extended to understanding the role of geographic proximity in inter-firm collaboration as well (Balland et al., 2022). Specifically, Boschma (2005) identifies a total of five proximity dimensions, shown in Table 6:

Table 6 - Proximity Dimensions (Boschma, 2005)

Proximity Dimension	
Geographic Proximity	Refers to the physical space between economic actors.
Social Proximity	Refers to the existence of trust-based relationships between economic actors.
Organisational Proximity	Refers to belonging to the same organisation or community of organisations.
Institutional Proximity	Refers to the similarity between national or regional institutions to which economic actors are subject.
Cognitive Proximity	Refers to the similarity of knowledge between economic actors.

Boschma (2005) argues that geographic proximity, often referred to as permanent co-location; physical proximity; and spatial proximity, has no special role to play in facilitating inter-firm knowledge-sharing,

or collaboration (Balland et al., 2022). Proximity literature represents a critical stance against the apparent significance of geography, espoused in other domains of scholarship. Though this sentiment is dated (Boschma, 2005), it is repeated in more contemporary works (Balland et al., 2022).

The argument that geographic proximity is ‘neither necessary nor sufficient’ is based on the view that permanent co-location can be substituted for other dimensions of proximity. Instead, the ‘most likely’ (Balland et al., 2022) role of geographic proximity is that it facilitates the development of other proximity types. Although, according to Balland, Boschma, et al. (2015) this has not been well-demonstrated in empirical works. Earlier proximity scholarship (Gilly & Torre, 2000; Rallet & Torre, 1999), referred to as the French Proximity School, reflects the view that geographic proximity is ‘unnecessary’ because it can be substituted for its temporal form.

The French School of Proximity is concerned with distinguishing geographic from organisational proximity, foreshadowing a discussion later in this chapter. However, a noteworthy contribution to emerge from this vein of thought is the conceptualisation of temporary geographic proximity.

Table 7: Temporary Geographic Proximity (Torre, 2008)

Proximity Dimension	
Temporary Geographic Proximity	Refers to the physical space between economic actors that is created when they travel to a mutual location/event.

Temporary geographic proximity is analogous to the concept of temporary agglomerations mentioned earlier in the chapter. It is recognised as a medium for facilitating in-person interaction and coordinating collaborations, between distantly located actors. Temporary geographic proximity does not feature in Boschma’s proximity dimensions framework. Although, temporary agglomerations are briefly mentioned in Boschma (2005). In this section, I navigate each dimension of proximity and discuss its role in enabling inter-firm knowledge-sharing and collaboration. I also aim to integrate temporary geographic proximity into the framework.

Geographic Proximity

Boschma (2005, p. 69) recognises that knowledge and innovation tend to spatially cluster because “...short distances literally bring people together”. This alludes to Feldman and Kogler (2010), where it is argued in-person interaction facilitates the transmission of knowledge, particularly tacit knowledge. However, Boschma (2005) contends that associations between knowledge-sharing and geographic proximity are spurious because geographic proximity veils other proximity dimensions. This mirrors the issue I pointed to in diffusion research, where separating the influences of spatially embedded social systems from geographic proximity is analytically challenging (Lengyel et al., 2020). A *proximity* equivalency would be where social and geographic proximities are simultaneously in effect, making it difficult to separate the role of each. Although, it is more often the case that several proximity dimensions are concurrently in effect, see Feldman et al. (2015) as one such example. This issue is evident in cases

of inter-firm collaboration (Balland et al., 2013; Cassi & Plunket, 2014) where it is found that collaboration partners are simultaneously geographically and cognitively proximate. In accounts of intra-firm collaboration (Irving, Ayoko, & Ashkanasy, 2020; Stephens & Cummings, 2021), it is argued that the role of geographic proximity promotes serendipitous interactions, which is a crucial enabler of collaboration. It has also been argued (Boschma, 2005) that any role of geographic proximity can be circumvented by other proximity dimensions, but principally social proximity.

The French school of proximity (Rallet & Torre, 1999) finds that the presence of social proximity prohibits the need for geographic proximity in tacit knowledge exchange. The exchange of tacit knowledge occurs on platforms of temporary geographic proximity that are created when socially proximate actors physically meet. The French school also finds that geographic proximity is independently insufficient for knowledge-sharing, suggesting that it must be buttressed with organisational relationships (Rallet & Torre, 1999), reflecting organisational and social proximity. Extending this to inter-firm collaboration, Letaifa and Rabeau (2013) find that geographic proximity must be paired with social proximity to enable collaboration. It is also found that geographically proximate collaborations are an inferior modality, as geographically distant collaborations are typically more innovative (Letaifa & Rabeau, 2013). This is reflected in earlier works (Boschma & Iammarino, 2009) that find that collaborations are enhanced by non-local sources of knowledge. However, this does not relegate geographic proximity to irrelevance, as it is found by Ponds, van Oort, and Frenken (2007) that geography can act as a bridge to other proximity dimensions.

In a study of a triple helix collaboration model, comprised of industry, government, and universities, Ponds et al. (2007) find that geographic proximity helps to overcome the institutional and organisational distance between industry, government, and universities. This is supported by Tödting et al. (2012), that find industry to university knowledge-sharing is frequently locally embedded suggesting that in-person interaction facilitates the development of other proximity types (Balland et al., 2022). Recognising this, I discuss how each proximity dimension relates to geographic proximity. I continue by discussing temporary geographic proximity.

Temporary Geographic Proximity

Temporary geographic proximity describes a scenario where otherwise distantly located actors travel to a mutual destination for in-person interactions (Torre, 2008). Platforms of temporary geographic proximity typically take the form of tradeshows; industry events; and travel (Harald Bathelt & Schuldt, 2008; Harald Bathelt & Spigel, 2012; Maskell et al., 2006). Such platforms support interactive learning and knowledge creation by enabling face-to-face interaction between actors who are unlikely to serendipitously meet (Rinallo, Bathelt, & Golfetto, 2017). Zhong and Luo (2018) support this view, finding that new product knowledge diffuses at industry trade fairs. Specifically, trade fairs enable knowledge of products from distantly located markets to be diffused in other locales. Platforms of temporary geographic proximity are also viewed as opportunities to establish (Harald Bathelt & Schuldt,

2008) and maintain (Harald Bathelt & Spiegel, 2012) ‘pipelines’ with geographically distant actors. This suggests that temporary geographic proximity may stimulate social proximity. Such findings signify that geographic proximity, as an enabler of other proximity dimensions, (Balland et al., 2022) can be supplanted with its temporary counterpart (Torre, 2008). Smaller firms, such as craft breweries, may have difficulty capitalising on platforms of temporary geographic proximity due to finance and resource constraints (Rallet & Torre, 2005; Torre, 2008). Even so, empirical work in this space (Micek, 2019) finds that small firms do participate in platforms of temporary geographic proximity, albeit their interactions typically occur with geographically proximate firms. This indicates that smaller firms may have difficulty interacting and developing social proximity with their geographically distant counterparts.

Social Proximity

Social proximity has provenance in embeddedness literature (Granovetter, 1985), where it is posited that economic relations and activities are embedded in a social context. In other words, social relationships influence economic outcomes. Specifically, in inter-firm relations, opportunities for interactive learning are intensified by social relationships (Granovetter, 1985). This is reflected in innovation diffusion scholarship (Hagerstrand, 1967; Rogers, 1962) that argues innovations diffuse via social systems. Proximity research concurs that social relationships encourage interactive learning. This is because social relationships are characterised by trust. Social proximity is defined as follows:

“Social proximity is defined here in terms of socially embedded relations between agents at the micro-level. Relations between actors are socially embedded when they involve trust based on friendship, kinship, and experience.” Boschma (2005, p. 66)

This definition of social proximity leans heavily on notions of trust. It is consistent with seminal literature (Dodgson, 1993), which argues in favour of good interpersonal relationships as a means of developing trust and promoting learning. Social proximity, represented by existing friendships, is found to positively influence the formation of knowledge-sharing relationships between firms in the same industry (Giuliani, Balland, & Matta, 2019). For example, in the Italian wine industry (Maghssudipour, Lazeretti, & Capone, 2020) friendships are crucial for the diffusion of knowledge. Extending this to collaboration, Letaifa and Rabeau (2013) find that social proximity is essential to enabling inter-firm collaboration, even when all other proximity dimensions are favourable. Cassi and Plunket (2014) also find that social proximity is central to enabling collaboration. Such findings indicate that social proximity is crucial for inter-firm knowledge-sharing and collaboration, and by extension supports the view that geographic proximity is independently ‘insufficient’ (Boschma, 2005). The apparent indispensability of social proximity is likewise reflected in trust scholarship.

Trust is found to be essential in inter-firm knowledge-sharing (Han, Huang, Hughes, & Zhang, 2021), and particularly important in the small business environment (Curado & Vieira, 2019). Trust is also found to be useful for collaboration in industries such as manufacturing (Al-Hakim & Lu, 2017) and banking (Alshwayat, MacVaugh, & Akbar, 2021). In the New Zealand small business context (Yata & Hurd, 2021), a lack of trust is found to prohibit international collaborations. From an economic perspective

(Kondo, Li, & Papanikolaou, 2021), trust has been linked to higher levels of engagement in collaboration and innovation performance. It can therefore be reasonably concluded that trust, proxied by social proximity, assumes a central role in the enablement of interfirm knowledge-sharing and collaboration. However, Boschma (2005) notes that too much proximity in this domain is prohibitive to inter-firm learning and innovation. This is because tight social groups can become ignorant of exogenous knowledge sources and potential collaboration partners. It is empirically unclear when too much social proximity is reached. Nevertheless, the significance of social proximity raises an interesting question regarding how it is ignited.

The supposition that geographic proximity facilitates the development of social proximity (Balland et al., 2022) is supported by trust scholarship (Nilsson & Mattes, 2015) that finds spatial (geographic) proximity enables trust by facilitating in-person interaction and communication. Similarly, Yata and Hurd (2021) find that face-to-face interactions engender trust in collaborations between small New Zealand firms and international partners. On the intra-firm level, Christensen and Pedersen (2018) find that social proximity is a latent consequence of physical (geographic) proximity between staff members in a firm. Once a trust-based relationship (social proximity) has been established, spatial proximity is no longer required for future interaction (Nilsson & Mattes, 2015). Altogether this indicates that geographic proximity leads to the development of social proximity, which in turn sustains long-distance interactions. This would suggest that geographic proximity is necessary for inter-firm knowledge-sharing and collaboration, albeit removed by one degree of separation. However, social proximity may also be engendered on platforms of temporary geographic proximity (Torre, 2008), mitigating any requirement for geographic proximity. Such arguments support the view that geographic proximity ‘most likely’ facilitates social proximity (Balland et al., 2022). However, this is an incomplete equation. Rallet and Torre (1999) argue that geographic proximity does not always lead to social proximity. Geographically proximate actors may develop feelings of indifference or antagonism towards one another, especially in highly competitive markets (Letaifa & Rabeau, 2013). Missing from this line of thought is an understanding of the forces that determine if social proximity will be ignited between geographically proximate actors. Outside of the existing proximity framework (Boschma, 2005), the concept of triadic closure represents another avenue through which social proximity may be ignited.

Triadic Closure

Triadic closure describes a scenario where two economic actors are indirectly connected by a mutual third party (Ter Wal, 2013) and a direct social connection between the two actors is likely to be formed via the mutual third. The establishment of a direct social connection represents a closure of the triad of actors. Empirically, a tendency for social connections to be made via a third mutual party has been demonstrated (Huang et al., 2018). In proximity literature (Balland, Belso-Martínez, & Morrison, 2015) triadic closure is briefly recognised as a factor that may contribute to the development of social proximity, but it has not been fully integrated into the proximity framework. A deep understanding of its role, particularly in relation to geographic proximity, in inter-firm knowledge-sharing and collaboration is therefore missing.

However, Ter Wal (2013) finds that triadic closure is particularly prevalent in cases where the exchange of codified knowledge is common. Thereby indicating that triadic closure may be a useful mechanism in enabling knowledge-sharing between geographically distant craft brewers. Further empirical work is needed to understand this. But the effectiveness of knowledge exchange between distantly located brewers would likely also depend on a degree of cognitive proximity.

Cognitive Proximity

Cognitive proximity refers to the similarity of knowledge held between economic actors. Conceptually, it is based on the notion that knowledge is not publicly available (Boschma, 2005). Instead, a base of knowledge is required to recognise and absorb sources of knowledge. Cognitive proximity therefore closely resembles the concept of absorptive capacity¹⁸. The cognitive proximity of a firm determines its ability to capitalise on geographically proximate sources of knowledge (Giuliani & Bell, 2005). This is because cognitive proximity allows actors to communicate and accurately understand knowledge. Cognitive proximity is therefore considered essential for effective knowledge-sharing (Balland et al., 2015). This is compounded by further empirical work (Broekel & Boschma, 2017) that finds innovation performance is enhanced when cognitively proximate pairings connect. However, too much proximity in this domain prohibits effective knowledge-sharing.

When firms are characterised by a high degree of cognitive proximity, they have similar bases of knowledge. This means that although these firms can communicate, recognise, and assimilate knowledge from one another, they have little novel knowledge to share (Balland et al., 2022). This mirrors Rogers (1962) view that too much similarity between individuals prohibits diffusion because similar individuals are characterised by comparable bases on knowledge. Rogers argues that the ideal scenario for innovation diffusion is pairings of individuals who are similar but have disparities in their knowledge. Following this logic, Nooteboom (2000, p. 153) states:

“A trade-off needs to be made between cognitive distance for the sake of novelty, and cognitive proximity for the sake of efficient absorption. Information is useless if it is not new but is also useless if it is so new it cannot be understood.”

In other words, there is a need for economic actors to balance cognitive proximity with cognitive distance, if they wish to acquire new knowledge that can be understood. Ideally, cognition should neither be too proximate nor too distant. This is similarly reflected in inter-firm collaboration, where Cassi and Plunket (2014) demonstrate that too much cognitive proximity is prohibitive because actors with the same base of knowledge have nothing to gain from collaborating. Broekel and Boschma (2017) introduce the idea of higher and lower cognitive proximity, noting that there are significant learning opportunities available by

¹⁸ Adler (1965) represents an early study of absorptive capacity, but the concept was popularised by Cohen and Levinthal (1990, p. 128) who define it as *“the ability of a firm to recognise the value of new, external information, assimilate it, and apply it to a commercial ends.”* Cohen and Levinthal (1990) build on this by characterising absorptive capacity as ‘critical’ to innovation activity.

connecting with cognitively higher firms. However, cognitively lower firms require a sufficient knowledge base to understand and absorb knowledge from cognitively higher partners. Illustrating this on an inter-regional level, Balland and Boschma (2021) find that a region's innovation performance is enhanced via connections with other regions with different but complementary capabilities. This supports the view that cognitive distance promotes innovation performance, but only when a degree of cognitive proximity (represented by complementary capabilities in this case) is present. Similarly, Balland et al. (2013) find that firms in the video games industry initially partner with cognitively proximate firms, but as the technical demands of video game development grow, firms seek connections with cognitively higher firms. The cognitive dimension becomes a more significant determinant of partner selection, and cognitively higher firms become popular collaboration partners. This leads to an interesting question regarding how firms identify and connect with cognitively suitable partners.

For instance, in collaboration research, Mercandetti, Larbig, Tuozzo, and Steiner (2017) find that smaller firms have difficulty identifying and meeting suitable collaboration partners. Akinremi and Roper (2021) argue that this is because small firms face challenges assessing the capabilities and suitability of potential partners. Smaller firms instead may rely on partnering with geographically proximate firms because physical closeness promotes serendipitous interaction (Boschma, 2005), and subsequent awareness of a potential partner's suitability. Balland et al. (2013) reflect this, finding that video game firms initially collaborated with cognitively proximate partners that were also geographically proximate. However, in proximity scholarship, it is unclear how smaller firms assess the suitability of potential collaboration partners. Insights from trust literature (Sánchez de Pablo González del Campo, Peña García Pardo, & Hernández Perlines, 2014) suggest that trust in a potential collaboration partner can emerge from their reputation as well as perceived skills and competencies (Mayer, Davis, & Schoorman, 1995). This suggests that actors may assess the suitability of a potential partner's cognitive dimensions based on perceived reputational and skill-based characteristics. But further research is needed to understand how smaller firms arrive at such a perception. I now proceed to discuss the relationship between cognitive and geographic proximity.

There are two domains of interaction between the cognitive and geographic dimensions of proximity. The first is that cognitive proximity enables the creation and transmission of codified knowledge over geographic distances (Davids & Frenken, 2018). This is unsurprising given that codified knowledge is easily transmittable (Nonaka, 1991). The exchange of tacit knowledge between cognitively proximate pairings still requires geographic proximity or an instance of temporary geographic proximity (Gertler, 2003). The second domain of interaction is that geographic proximity leads to cognitive proximity (Balland et al., 2022). Drawing on a parallel, Maté-Sánchez-Val and Harris (2018) find that geographic proximity between firms has a significant positive impact on their absorptive capacity, and firms located distantly from knowledge sources experience an inferior level of absorptive capacity. Equivalently, Broekel and Boschma (2017) find that geographic proximity allows smaller firms to overcome cognitive

distance. This occurs because physical closeness promotes interaction between actors (Irving et al., 2020) and associated knowledge-sharing. In other words, geographically proximate firms become increasingly cognitively proximate over time. This also means that eventually geographically proximate firms will develop too much cognitive proximity. By extension, this prohibits local knowledge-sharing and inter-firm collaboration (Balland et al., 2022). Responding to this, firms then look to geographically distant locales when seeking new knowledge or potential collaboration partners (Belderbos et al., 2021). Letaifa and Rabeau (2013) and Broekel and Boschma (2017) support this, finding that firms' innovation performance is enhanced by accessing knowledge from geographically distant sources. Moreover, this provides backing for the argument that geographic clusters cannot be eternally self-sustaining and must seek exogenous knowledge (Maskell, 2014). Although, accessing said knowledge may also be obstructed by a lack of institutional proximity.

Institutional Proximity

Boschma (2005) characterises institutional proximity as being associated with the macro-level institutional framework in which actors operate. This is reflective of actors operating in the same or similar national institutions (Balland et al., 2022), with such institutions representing a formal legislative framework as well as expected norms and values (North, 1990). Macro-institutional proximity thereby reflects the legislative and cultural framework at the national level. It is important to note that macro-institutional proximity is conceptually distinct from its micro counterpart.

Micro-institutional proximity is defined by expected norms and values "*embodied in specific exchange relations*" (Boschma, 2005, p. 67) on an individual level. This variation of institutional proximity is recognised in proximity scholarship, but Boschma (2005) argues that it is enveloped within the domains of social and organisational proximity. This means understanding the role of micro-institutional proximity receives no dedicated attention in proximity research. Nevertheless, it is argued by Doloreux and Parto (2005) that macro-institutional proximity is essential for innovation activities:

"...the institutional characteristics of the region, its knowledge infrastructures and knowledge transfer systems, as well as strategies and performance of firms, represent important basic conditions and stimuli for promoting innovation activities." (Doloreux & Parto, 2005, p. 148).

This view is backed by Davids and Frenken (2018), that find the co-creation of knowledge is contingent upon a high degree of institutional proximity. However, too much proximity in this regard is detrimental to innovation (Boschma, 2005), as it prohibits recognition of knowledge and potential collaboration partners in other institutional settings. Frequently, however, proximity studies such as Feldman et al. (2015) and Stephens and Cummings (2021) are limited in their ability to elucidate the influences of macro-institutional proximity, because such studies are situated in a single national-level institutional context. The research I present in this thesis is subject to a similar limitation.

Ponds et al. (2007) expand the definition of institutional proximity to include individuals operating under a similar institutional logic. The purpose of this redefinition is to clarify the institutional disparities between industry, university, and governmental organisations. In this regard, Ponds et al. (2007) find that institutional distance can be overcome by geographic proximity. Thereby supporting the perspective view that geographic proximity can facilitate institutional proximity (Balland et al., 2022).

The relationship between geographic and macro-institutional proximity is clear, in that national institutions and cultural norms are typically confined to the geographical borders of a nation. However, proximity in institutional logic (Ponds et al., 2007) can be developed by repeated in-person interactions between geographically proximate economic actors (Stephens & Cummings, 2021). Meaning this particular variation of institutional proximity can be facilitated by geographic proximity (Balland et al., 2022). Moreover, in this configuration temporary geographic proximity may be substitutable for geographic proximity, implying that it is possible to develop institutional proximity across geographic distances. This is not empirically supported, but it likely also requires the influence of organisational proximity.

Organisational Proximity

Like institutional proximity, organisational proximity has endured redefinition. Boschma (2005, p. 65) describes organisational proximity as a “*broad category*”. I dedicate the first portion of this section to navigating some of these definitions. An early definition of organisational proximity presented by Monge, Rothman, Eisenberg, Miller, and Kirste (1985, p. 1129) states that:

“...organizational proximity is defined as two or more people being in the same location where there is both the opportunity and psychological obligation for face-to-face communication.”

This definition is used to describe interactions between individuals in the same organisation. Despite its namesake, this definition more closely aligns with contemporary definitions of geographic proximity. This is interesting because subsequent proximity literature has tended to view organisational proximity as converse or substitute to geographic proximity.

In the French school of proximity, organisational proximity has been succinctly defined as “*...membership of the same organisation or professional community.*” (Rallet & Torre, 1999, p. 375). Gilly and Torre (2000) develop this further, explaining that there are two veins to organisational proximity: adherence logic and similarity logic. Adherence logic means that organisational proximity represents actors that belong to the same space of relations, such as a firm or network of firms. Whereas similarity logic is representative of actors who are similar in organisational terms, and as a result share a similar space of reference and associated knowledge. The latter of these logics is reflective of communities of practice, where actors are united by shared knowledge and experiences (Gertler, 2003). Given that functional communities of practice can transmit knowledge across geographic distances (Feldman & Kogler, 2010), it can be inferred that organisational proximity is substitutable for geographic

proximity. This inference is supported by Cassi and Plunket (2014), that find organisational proximity is exchangeable for geographic proximity in inter-firm collaboration. Further support emerges from the New Zealand small business context (Davenport, 2005) where it is found that organisational proximity enables the acquisition of knowledge from geographically distant sources. However, when discussing empirical material in this territory, it is important to recognise that the prevailing definition of organisational proximity does not fit with the communities of practice analogy of similarity logic.

Boschma (2005, p. 65), recognises both elements of organisational proximity logic but is aligned with adherence logic. He states that “...organizational proximity is defined as the extent to which relations are shared in an organizational arrangement, either within or between organizations.” In other words, organisational proximity is defined by formal arrangements between firms or networks of firms. An example of this would be different organisations operating under the same umbrella of legally bound firms (Balland et al., 2015). Similarity logic, which Boschma (2005, p. 65) describes as the cognitive dimension of organisational proximity is disregarded for “...purely for analytical purposes”. This means that research concerned with organisational proximity is neglecting an important dimension. This is significant because adherence logic is not well-suited to the craft brewing context.

Craft breweries are frequently defined by independent ownership. This means craft breweries do not typically forge formal interdependencies with other firms in a subsidiary style arrangement. If a craft brewery does do this, especially through acquisition by another company, prevailing sentiment ("What is a Craft Brewery," 2021) posits that it ceases to be a craft brewery from that point. However, there are indications I discuss later in this chapter that craft brewing represents a community of practice, and by extension similarity logic. This is serendipitous, as recent proximity literature (Balland et al., 2022) does not explore the role of the similarity logic dimension of organisational proximity. This research represents an opportunity to examine its role in inter-firm knowledge sharing and collaboration. However, given that a community of practice is bound by a shared passion and a desire for continuous improvement (Wenger & Snyder, 2000), it is probable that the similarity logic dimension of organisational proximity will encourage inter-firm knowledge-sharing and collaboration. Having discussed all six proximity dimensions in contemporary proximity research, I proceed to discuss the limitations of this scholarship.

Limitations of Proximity Scholarship

Throughout this chapter, I have highlighted seven gaps in proximity scholarship, specifically:

1. A lack of demonstration that temporary geographic proximity can be a complete substitute for geographic proximity.
2. A tendency to assume that geographically proximate actors will become socially proximate.

3. Limited understanding of the role of triadic closure in stimulating social proximity.
4. A lack of understanding of how triadic closure relates to geographic proximity.
5. A tendency to disregard understanding how the cognitive proximity of a potential knowledge-sharing or collaboration partner is assessed.
6. A lack of understanding of the role of micro-institutional proximity.
7. A tendency to disregard the similarity logic dimension of organisational proximity.

A lack of understanding in these areas prohibits a full understanding of each proximity dimension and by extension a full understanding of the roles of proximity dimensions in inter-firm knowledge-sharing and collaboration. However, proximity scholarship is subject to a broader territory of limitations, that are recognised by influential proximity scholars (Balland et al., 2015; Balland et al., 2022).

Balland et al. (2015) note that the most significant limitation to proximity research is the ‘static’ methodological approaches typically adopted. Specifically, a ‘static’ approach involves capturing evident proximities at a given moment in time when the research is conducted. This means there is a lack of empirical backing for how proximity dimensions inter-relate and change over time. It is for this reason contemporary literature is careful to stipulate that the role of geographic proximity is ‘most likely’ (Balland et al., 2022) an enabler of other proximity dimensions. Responding to this limitation, Balland et al. (2015) argue in favour of a ‘dynamic’ approach to understanding the evolution and interplay of proximity dimensions. Practically, this involves the collection of longitudinal data, albeit continued in the same positivistic approach as virtually all other proximity research. The research I present in this thesis is not a longitudinal study, meaning it does not satisfy calls for a ‘dynamic’ approach. However, the qualitative nature of this research permits participant recall (Polkinghorne, 2005; Wheeldon, 2011) and participant forecasting, which represents a move towards a ‘dynamic’ understanding of proximity.

Prior calls for qualitative work in proximity have been made (Balland et al., 2013). However, my exhaustive literature searches indicate that this has gone unanswered, at the time of writing. This is unfortunate because it means there is an absence of exploratory accounts that examine the roles of different proximities. An exploratory approach would facilitate the re-examination of established proximity dimensions while remaining open to the identification of novel proximity dimensions not yet recognised in extant scholarship. This could promote understanding of the roles of temporary geographic proximity, the factors that lead to the establishment of social proximity, the roles of triadic closure, how cognitive proximity is assessed by industry partners, the roles of micro-institutional proximity, and the roles of the similarity logic dimension of organisational proximity.

Finally, to the best of my knowledge and at the time of writing, there has been no endeavour to understand the influences of proximity on both knowledge-sharing and collaboration contextualised in the same setting. This means it is not understood if there are differences in proximity dynamics between knowledge-sharing and cases of collaboration. Moreover, when collaboration is examined via a proximity lens, there is little accounting for different collaboration modalities (Balland et al., 2013). These limitations and gaps in scholarship inform the research questions I present at the end of this chapter. However, before this, I examine the final domain of scholarship: craft brewing literature.

Craft Brewery Proximity, Innovation, and Collaboration

Craft brewery research is a nascent and growing body of academic literature. Scholarship in this domain can be broadly organised into two separate domains of thought. The first is concerned with how spatial factors influence the establishment and closure of craft breweries (Barajas et al., 2017; Esposti et al., 2017; Nilsson et al., 2017; Nilsson et al., 2019). The second and more prominent area is concerned with understanding craft brewery collaboration (Alonso et al., 2018; Alonso & Bressan, 2017; Cabrera-Flores, León-Pozo, & Durazo-Watanabe, 2019; Cunningham & Barclay, 2020; Kraus et al., 2018; Lotfi et al., 2021). In this section, I examine both of these domains of craft brewing literature, synthesising them with proximity literature where appropriate. I begin by discussing the influences of spatial factors on craft brewery establishment and closure.

Perhaps surprisingly, this research does not represent the first foray into understanding the influences of proximity on craft brewing. Specifically, prior efforts have been made to understand the role of spatial factors (geographic proximity) in craft brewery location selection. For example, Barajas et al. (2017) find that in the American context, the most significant determinant of craft brewery location was geographic proximity to an existing brewery. Such behaviour leads to a physical clustering of craft breweries and the creation of craft brewing ‘districts’. Craft breweries elect to operate in close geographic proximity to one another because it allows new breweries to benefit from the existing reputation of the craft brewing ‘district’ (Nilsson et al., 2017). Furthermore, it is found that while geographical co-location of craft breweries increases competition in the ‘district’, the costs of this are outweighed by the benefits of cooperation that occurs between geographically proximate breweries (Nilsson et al., 2017). Similar research in the Italian context, however, finds there is no strong evidence for the physical clustering of craft breweries (Esposti et al., 2017). This suggests that the tendency towards physical clustering evident in the USA is not generalisable. Nonetheless, Nilsson et al. (2019) compound earlier work by finding that craft brewery closures in the USA typically occur distantly from craft brewing ‘districts’. Nilsson recognises that her findings are not ‘statistically significant’ but are an interesting indication that geographic proximity may be tied to the long-term success of the craft brewery. Following Feldman (1994), the apparent success of geographically proximate breweries could be associated with knowledge spillovers and ‘local buzz’ (Bathelt et al., 2004). However, given that geographic proximity is ‘neither necessary nor sufficient’ (Boschma, 2005) for knowledge-sharing, it is unclear what role geographic

proximity might play in the ability of a craft brewery to benefit from local knowledge. Thereby pointing to a gap in extant craft brewing scholarship. Limited understanding of the role of geographic proximity is similarly reflected in scholarship that focuses on craft brewery collaboration.

Craft brewery scholarship (Alonso et al., 2018; Alonso & Bressan, 2017; Cabrera-Flores et al., 2019; Cunningham & Barclay, 2020; Kraus et al., 2018) endorses the notion that craft breweries tend towards collaboration and cooperation with their industry counterparts. Craft brewery collaboration typically assumes one of three modalities:

Table 8: Craft brewery Collaboration Types (Goldfarb, 2016; Routson, 2012)

Contract Brewing	Contract brewing describes a scenario where a business hires a brewery to brew beer on its behalf. Typically, the contract brewing company does not have its own brewing equipment, but it does develop the beer recipe and takes responsibility for sales, marketing, and distribution. It also describes a scenario where a brewery hires another brewery to brew on its behalf when it cannot produce enough of its beer.
Collaboration Brew	A collaboration brew (or collaboration beer) is where two or more breweries work together to produce a single beer. This is less transactional than contract brewing and involves the simultaneous promotion of the collaborating breweries.
Taproom Takeover	A taproom takeover describes a scenario where a craft brewery (with a hospitality outlet) hosts several beers from another brewery on its taps. This is done to promote the other brewery, and it is often reciprocated.

In a study of craft brewery collaboration in the Australian setting, Alonso et al. (2018) find that 77% of craft breweries have engaged in some form of collaboration with another brewery. This means there is a temptation to assume that collaboration is a default position for most craft breweries. However, in extant scholarship, there are numerous suppositions as to why craft breweries collaborate, and what enables their collaboration.

Why are Craft Breweries Collaborative?

Numerous rationalisations for craft brewery collaboration emerge from existing scholarship. The first reflects a central characteristic of craft brewery definitions: innovation ("What is a Craft Brewery," 2021). Mastanjević et al. (2019) argue that craft breweries are required to be innovative, to appeal to the evolving tastes of craft beer consumers. This is compounded by findings that suggest innovative craft breweries are the most successful (Esposti et al., 2017). Due to the centrality of knowledge in innovation (Quintane et al., 2011), craft breweries are required to continually seek it. According to Kraus et al. (2018) and Alonso et al. (2018), collaboration is an important mechanism for knowledge-sharing between craft breweries. This means craft breweries are bound by the common goal of being innovative and view

collaboration as a means to achieving that collective goal. By extension, this shared goal and experience indicates that craft breweries form a community of practice (Gertler, 2003), and are therefore organisationally proximate. This is similarly reflected in the second rationalisation: sympathy.

Cunningham and Barclay (2020) argue that a feeling of sympathy based on shared experiences between craft brewers in the North-East of Scotland encourages collaboration. In the Californian setting, Cabrera-Flores et al. (2019) detects similar notions of sympathy but explain that these emerge, in part, due to the legacy of most (approximately 60%) craft breweries as homebrewing operations. The enduring effect of this is that homebrewers, turned craft brewers, retain the hobbyist mindset associated with homebrewing. This in turn makes craft brewers with a homebrewing background more inclined to assist and collaborate with other craft brewers, who are frequently viewed as fellow hobbyists. It is not clear if this relationship is altered between craft brewers who come from a corporate background rather than a homebrewing one. However, the New Zealand context represents an interesting opportunity to explore this dynamic. Based on my prior experiences, there are a mixture of former homebrewers and corporate brewers operating in the New Zealand craft brewing space. Nevertheless, this alludes to the notion that craft breweries are informally bound and resemble a community of practice. Further support of this notion is reflected in the shared goal of educating beer consumers.

Alonso et al. (2018) explain that craft brewery collaboration is motivated by a mutual desire to educate consumers about craft beer. Cunningham and Barclay (2020) also find this to be evident in the Scottish craft beer setting. Educating consumers about craft beer is an important step in growing the ‘craft’ share of the beer market, which is heavily dominated by corporate breweries. This means that craft breweries are inclined to work collaboratively to collectively grow their share of the market. However, motivations alone are insufficient to engender collaboration, as several enabling conditions are also required.

Enablers of Craft Brewery Collaboration

Similar to the examples of collaboration discussed earlier in this chapter, trust is a significant enabler of craft brewery collaboration (Kraus et al., 2018; Lotfi et al., 2021). This suggests that a degree of social proximity must exist between craft brewers to permit collaboration. Lotfi et al. (2021) argue that trust between craft breweries in the Welsh setting is embodied by a belief that a potential collaboration partner is capable of producing a high-quality product. In other words, trust between craft brewers emerges from a perception of capabilities (Mayer et al., 1995) and reputation (Sánchez de Pablo González del Campo et al., 2014), and is therefore reflected in the cognitive dimensions of proximity. Similarly, Alonso et al. (2018) find that a perceived imbalance between partners will prohibit a craft brewery collaboration. Specifically, craft brewers must recognise a mutual benefit from collaborating. In other words, the perception that one craft brewery is ‘riding on the coattails’ of another will prohibit a collaboration. This echoes an earlier discussion of higher and lower cognitive proximity and suggests craft breweries with lower cognition might find it difficult to establish a collaboration with another brewery of higher

cognition. Assuming trust and mutual benefit are in alignment, collaboration may also be prohibited by time constraints.

Time constraints are identified in other contexts (Irving et al., 2020) as a barrier to collaboration. Recent research in the New Zealand setting (Yata & Hurd, 2021) similarly recognises that small business collaboration is constrained by time limitations. Similarly, in the Australian setting, Alonso et al. (2018) find that time constraints prohibit craft brewery collaboration. This suggests that despite the motivations for collaboration, and indications that craft breweries are a community of practice, collaboration may not be a priority for craft breweries. This implies craft breweries prioritise their independent operations before committing time to collaborate. I proceed to conclude this section by discussing the limitations of craft brewing scholarship.

Limitations of Craft Brewing Scholarship

The contemporaneous nature of craft brewing research indicates that it is a domain of scholarship operating on the edges of existing knowledge. With that, significant gaps in understanding are anticipated. The most relevant gap as far as this research is concerned, is the lack of convergence between the two main areas of scholarship: spatiality and collaboration. Existing literature indicates that geographic proximity between craft breweries is linked to their success, meaning that it may also influence the propensity for collaboration. But this has not been empirically demonstrated. Serendipitously, utilising craft brewing as the contextual setting of this research presents an opportunity to bridge that knowledge gap. However, further gaps in knowledge are apparent. Specifically, while literature recognises that craft brewery collaboration assumes different modalities, it is not clear if the enablers and motivations for collaboration differ in each. Similarly, at the time of writing, consideration has not been given to understanding craft brewery collaboration in an international or inter-industry context. These limitations prohibit a complete understanding of the enablers and motivators of craft brewery collaboration, and of course the role of proximity dimensions in such collaborations. These gaps in understanding have been used to inform the research questions that guide this thesis.

Research Questions

Throughout this section, I have highlighted gaps in knowledge evident in proximity and craft brewing scholarship. These gaps have been utilised in the formulation of the below research questions that guide this thesis:

- 1: What are the roles of proximity in knowledge-sharing between New Zealand's craft breweries?
 - 1a. How do other dimensions of proximity relate to geographic proximity in the New Zealand Craft Brewing Industry?
2. How are craft brewery collaboration modalities influenced by proximity dimensions in the New Zealand Craft Brewing Industry?

Chapter Three: Methodology

“A fine beer may be judged with only one sip, but it’s better to be thoroughly sure.”
– Bavarian Proverb

Introducing the Methodology

To the best of my knowledge, and at the time of writing, a qualitative exploratory account of the roles of proximity dimensions has not been conducted. The approach I present here reflects an exploratory methodology that enables the re-examination and identification of proximity dimensions. Specifically, I utilised a form of productive hermeneutic enquiry in addressing my research questions. I discuss this type of hermeneutic enquiry in a review of my research design. Briefly, productive hermeneutic enquiry is an interpretive approach to research that involves making use of the researcher's prior knowledge and experiences (Patterson and Williams, 2002). Prior knowledge and experiences are referred to as a ‘horizon’. After explaining my research design, I explain the research setting and justify its selection. I describe the process through which data was collected and analysed. I conclude the chapter by discussing research validity and ethical considerations. However, recognising that in productive hermeneutics the researcher is tethered to the interpretation of data (Nicholson, 1984), I begin this section by presenting my prior experiences and perspectives of the research setting: craft brewing. The need to provide such an account becomes more apparent as I navigate this chapter. But, broadly speaking, the purpose is to provide transparency regarding any prejudices I have in my role as the researcher. I reflect on this account in chapters four, five, and six, noting how my prejudices have been challenged.

Personal Reflections

In the introduction of this thesis, I provided a brief account of my experiences with beer that inspired this research. Here I expand on that account to provide transparency regarding my preconceptions and prior experiences of craft brewing. I have been a consumer of craft beer since the age of 18, and perhaps some time prior as well. I believe my status as a craft beer drinker is atypical, at least for my demographic. In my experience, craft beer drinkers typically migrate to craft beer after years of drinking beer produced by large brewing corporations (corporation beer). Despite my baptism with craft beer upon my arrival at the legal drinking age, I do occasionally partake in corporation beer. But I generally do not consume corporately brewed beer from New Zealand breweries. Instead, I gravitate towards *Tennent’s Lager*. *Tennent’s*, as it is more commonly referred to, is a Scottish lager produced by the *Wellpark Brewery* in Glasgow, Scotland. It is the most popular beer in Scotland (Sanderson, 2022). I have a peculiar feeling of loyalty to the brand stemming from a fleeting sensation of nationalism. I purchase the beer whenever I find it available somewhere in New Zealand. In other words, I do not purchase *Tennent’s Lager* for the

taste. For reference, *Tennent's* is affectionally referred to in Scotland as 'the best shit beer there is' – a sentiment I have some sympathy for.

As a long-time craft beer drinker, I have developed the perception that craft beer tastes significantly better than corporately produced beer. While I recognise that taste is a highly subjective issue, I echo remarks from the previous chapter (Mastanjević et al., 2019), that craft beer is about complex and distinct flavour profiles. This distinguishes them from the uniformity (Bastian et al., 1999) that characterises corporately produced beer. I also rationalise my perspective based on associations I make between price and quality. Craft beer typically enters the market at a much higher price point than its corporate counterpart. The relatively high price point supports my perception that craft beer is a luxury good, at least as far as beer goes. In further contrast, I have also come to perceive craft beer as different and variable.

'Different' is a term I use to define the beer styles typically produced by craft breweries in comparison to their corporate counterparts. Corporate breweries tend to produce lager or pilsner-style beers, whereas the focus of the craft brewery is usually on IPA¹⁹, hazy, and dark beers. Within that, I use the term 'variable' to describe the number of different beers produced within those styles. This is because craft breweries often have several variations of the same beer style within their core range. A strong extent of product variation is possible because craft breweries seem to adopt novel approaches to brewing beer, by using unconventional ingredients and brewing techniques. However, this also means that craft breweries occasionally produce beer with limited market appeal. *Garage Project's*²⁰ *Pickle Beer*, a beer made using dill pickles ("Pickle Beer," 2022), is a solid example of this. The tendency of craft breweries to produce beer that has limited market appeal informs my view that appearing innovative is a priority of craft breweries. Perhaps more so than corporate breweries. It is also consistent with the view that craft breweries are defined by innovativeness in the domain of new products ("What is a Craft Brewery," 2021). I concede, however, that this is a perspective based solely on the new products each brewery type brings to market and does not reflect innovation less visible to me as a consumer. I also tend to think of craft breweries as small, local businesses.

The first craft brewery I encountered was *BrewDog*. *BrewDog* launched a small craft brewery in Ellon, Aberdeenshire, Scotland in 2007. Their beers were quickly available in Aberdeenshire bars, and in 2008-2009 the brewery launched dedicated outlets in Aberdeen City. When visiting the brewery, or dedicated outlet, it would be common to meet the owners and brewers, who were often local to the area. In my experiences with them, they were friendly, talkative, and willing to explain their processes. This format provided a level of interaction that I did not consider possible with the owners of larger corporate breweries. In my view, the approachable nature of the owners and brewers embedded the brewery locally – and through this, it felt that *BrewDog* belonged to Aberdeen, and vice-versa. *BrewDog* is now, however,

¹⁹ India Pale Ale

²⁰ A Wellington-based craft brewery

an international brewery with outlets across the globe, and that sense of smallness and locality has been lost. I am certain to face opposition to my view that, because of this, I no longer view *BrewDog* as a craft brewery. In New Zealand, however, craft breweries appear to have retained their dedication to their locality. Although, being locally engrained does not prohibit inter-regional collaboration between craft breweries.

Observing craft breweries as a consumer, both in New Zealand and other international settings, I have noticed that craft breweries appear to frequently collaborate. Collaboration is represented by the production of a beer from two or more breweries. As a consumer, I look forward to sampling a beer that has been collectively produced by breweries I am familiar with, but also when a ‘new’ brewery is thrown into the mix. Collaboration beers are not always a hit, but I feel a sense of excitement when I notice a new one has been produced. Collaboration beers are a common occurrence in the craft beer market, and due to this, I have often considered craft breweries to be naturally collaborative. Having delineated my prior perceptions of the craft brewing industry, I now proceed to discuss my research design.

Research Design

A paradigm is an inaugural step toward the development of theory (Kuhn, 1962). In research, paradigms can be described as the worldview that guides the researcher (Guba & Lincoln, 1994). Of the four main research paradigms²¹, the research I present in this thesis is guided by the interpretive paradigm. This means I am concerned with understanding the subjective experiences of individuals. By contrast, proximity research has been largely dominated by positivist epistemologies, within the radical structuralist paradigm. While these approaches have substantively advanced proximity knowledge (see Balland et al. (2022)) they do not permit exploration, meaning they are limited in their ability to deepen understanding of proximity dimensions (Balland et al., 2013) and identify alternate proximity dimensions. Interpretivism, however, seeks in-depth meaning from insights (Alharahsheh & Pius, 2020) by understanding the social world through subjective experiences (Burrell & Morgan, 1979). This means that the interpretive paradigm is well-suited for developing an exploratory account of the roles of proximity in knowledge-sharing and collaboration.

Balland et al. (2013, p. 761) allude to the value of interpretivism in proximity research, calling for a “*more qualitative approach*” to be utilised to deepen understanding of proximity. As I noted in Chapter Two, at the time of writing, this call appears to have gone unanswered. Further justification for examining proximity and inter-firm knowledge-sharing through an interpretive lens stems from the economist, Paul Krugman. He states:

“Knowledge flows, by contrast, are invisible; they leave no paper trail by which they may be measured and tracked, and there is nothing to prevent the theorist from assuming anything about them that she likes” (Krugman, 1991, p. 53).

²¹ Radical Humanist; Radical Structuralist; Functionalist: and Interpretive (Burrell & Morgan, 1979).

The elusive nature of knowledge flows means that it is difficult to detect when knowledge-sharing has occurred between firms. This means that interpretation, or what Krugman describes as an assumption, is required to determine if and when knowledge-sharing has occurred. Even in positivistic research, some interpretivism is required in the selection of knowledge-based metrics, such as the Knowledge Complexity Index (Balland & Rigby, 2017) or patent citations (Jaffe et al., 1993), that serve to proxy knowledge flows. It is therefore apparent that conducting qualitative work in this space requires interpretation. Within the interpretive paradigm, I have elected to utilise productive hermeneutics in responding to my research questions. Productive hermeneutics is an iterative approach associated with the fusion on horizon concept (Patterson & Williams, 2002). A horizon is “...*the range of vision that includes everything that can be seen from a particular vantage point*” (Gadamer, 2004, p. 301). The horizon serves as a metaphor for the place where interpretation and understanding are generated. It is a product of our ‘historically determined situatedness’ (Malpas, 2018). In other words, the horizon is the sum of our experiences, existing understanding, and prejudices. This means a horizon, sometimes referred to as a ‘foreshadowing of understanding’ (Gadamer, 2004), is deeply individualistic. In that, each person has a unique horizon. I utilise productive hermeneutics in this thesis because it allows me to apply my prior experiences and understanding (Patterson & Williams, 2002) of the research setting in the collection and analysis of data.

To my knowledge, productive hermeneutic enquiry has not been appropriated to expand knowledge in the domains of proximity (Boschma, 2005); geography of innovation (Feldman, 1994); or craft brewing research. However, as a methodological tool, it enables the level of exploration (Patterson and Williams, 2002) required by my research questions. Hence, it has been deployed in other areas of innovation and knowledge-management scholarship (Clayton, 2016; Timmermans & Blok, 2021). In productive hermeneutics, interpretation and understanding are achieved by *fusing* individual horizons.

Serving as another metaphor, horizons have been *fused* when a level of mutual understanding has been achieved between the researcher and the research participant. Productive hermeneutics “*dismisses the idea that meaning is the private property of the individual and that understanding is achieved solely by gaining access to the actor’s structuring of his or her world*” (Patterson & Williams, 2002, p. 23). Practically, this suggests meaning may only be given to a participant's remarks or responses when they have been fused with the existing experiences, understanding, and prejudices (horizon) of the researcher. My horizon is, therefore, central to the interpretation of empirical material in this research.

Having my horizon at the heart of this research means that I assume an “*active role in creating the interpretation*” (Nicholson, 1984, p. 29) of the data. Alternate forms of hermeneutic enquiry argue that a researcher can entirely remove themselves from the process of interpretation (hermeneutic divination) or suspend their preconceptions to empathise with research participants (reproductive hermeneutics) (Patterson & Williams, 2002). This would mean isolating and extracting my horizon from my analysis. Isolating and extracting my horizon from my analysis would produce comparatively more objective results. However, in my view, extracting my horizon would diminish my ability to develop new meaning

and understanding. Maintaining my ‘horizon’ means that I also must acknowledge that any prejudices or misconceptions I hold are also complicit in the interpretation of data.

Given their complicity in my interpretations, I recognise value in explicitly delineating my prejudices as the researcher. To do so would reflect elements of hermeneutic divination, whereby the researcher aims to compartmentalise their conscious from the interpretive process (Patterson & Williams, 2002). However, in productive hermeneutics, prejudices cannot be isolated from a horizon, because people are typically unaware of their existence (Gadamer, 2004). It is only when prejudices are provoked that their existence is recognised. For transparency, however, I reflect on prejudices I believe myself to be aware of before embarking on my data collection and analysis. These prejudices are, broadly, reflected in the personal accounts I provide in Chapter One and at the onset of this chapter:

- I have a favourable view, stemming from an emotional investment, in the craft brewing industry.
- I consider craft breweries to be inherently innovative organisations.
- I consider craft breweries to be friendly and collegial organisations.
- I consider craft breweries to be naturally collaborative organisations.

It is important to note, however, other prejudices I am unaware of my also exist. My prejudices of the research setting are neither positive nor negative. Instead, my prejudices are intended to serve as indicators of when new meaning is received. Allowing my prejudices to serve this indicative purpose, means I must remain receptive to new meaning. Practically, this involves maintaining an open mindset that is prepared to receive meaning that is disparate from, and challenges, my horizon. I now proceed to discuss hermeneutic conceptualisations of the *self*, and how this influences my data collection and view of research participants.

Hermeneutic enquiry does not prescribe a specific method of data collection (Patterson & Williams, 2002), but semi-structured interviews are the most commonly adopted approach (Bryman, 2004). It is the data collection approach adopted in this research. This has implications for the hermeneutic view of the self, associated with interview participants. The ‘self’ is constructed by an individual’s setting and their role within that setting, meaning that the ‘self’ is a product of an individual’s environment (Patterson & Williams, 2002). Separating the ‘self’ from the setting is therefore impossible. For instance, a brewery manager has a ‘self’ developed in the context of their brewery. Removal of the brewery manager from this context will result in the construction of a different ‘self’ suited to the new contextual setting. This has important implications for how data was collected. But broadly, as I aimed to collect data from the brewery manager ‘self’ constructed in the brewery, interviews needed to be conducted on the brewery premises. I expand on my data collection strategy later in this chapter, after I address the research setting.

Research Setting

Throughout this section I justify the selection of craft breweries as the setting for this research; I explain how craft breweries were identified and accessed by discussing the sampling criteria I utilised. I also

discuss factors that prohibited access to craft breweries and the steps I took to be granted access to craft breweries. My justification for the New Zealand craft brewing industry as the setting for this research stems from two main sources. The first is based on craft breweries as innovative ("What is a Craft Brewery," 2021) and collaborative (Lotfi et al., 2021) organisations. Having noticed these traits personally, I have long considered craft brewing to be an interesting setting for the study of innovation and collaboration, particularly in the small business context. It is also a suitable setting for the study of diverse modalities of geographic proximity.

In understanding proximity roles, I sought access to data from participants subject to varying degrees of geographic proximity. Specifically, I aimed to collect data from locations where craft breweries were densely located, sparsely located, and operated in geographic isolation, as a means of identifying variances in data based on craft brewery density. Operating across a spectrum of geographic locales, the New Zealand craft brewing industry satisfied this aim. It is also a novel setting for contributing to craft brewery scholarship, which has yet to penetrate the New Zealand context. Not all craft breweries in the New Zealand context were considered suitable for my research. Inclusion was determined based on the sampling criteria I developed.

Craft Brewery Sampling Criteria

Productive hermeneutics does not prescribe a specific sampling principle (Patterson & Williams, 2002). Though, purposive sampling is often cited as the most appropriate in qualitative works (Bryman, 2004), as it allows research questions to guide the selection of participants. The sampling strategy I deployed in this research can be described as a consequence of objectives, emerging findings, and circumstance. In Table eight, I provide an overview of the different sampling strategies I adopted and their intended use. I delineate the use of each sampling strategy more thoroughly throughout this Chapter.

Table 9: Sampling Strategy

Sampling method	Use
Purposive sampling	Development of craft brewery sampling criteria
	Identification of craft brewery regions
	Identification of regions of particular interest, namely Tasman Bay.
Convenience sampling	Response to COVID-19 travel restrictions. Through convenience, data collection began in the region where I live.
Theoretical sampling	Interpretation of findings from one region determined the next region I sought to collect data from.

Utilising a purposive sampling technique, I developed an inclusion criteria, which I used to identify craft breweries that could be approached for participation in my research. These criteria did not determine

which regions of New Zealand I collected data from. In determining the inclusion criteria, I was primarily concerned with the theoretical implications of inclusion, and to a lesser extent the practical implications. The craft brewery sampling criteria is shown in the table below:

Table 10: Craft Brewery Inclusion Criteria

Inclusion	Exclusion
Independent Ownership	Influences of corporate ownership
Private Ownership	Public share offering
Physical Brewery	Contract brewers without physical brewing premises

Independent ownership was the first consideration. Extant definitions of ‘craft brewery’ (“What is a Craft Brewery,” 2021) contend with the notion of craft brewery independence and conclude that if more than 25% of a craft brewery is owned by a non-craft brewing organisation, it cannot be considered ‘craft’. In congruence with this view, corporately owned craft breweries were excluded from this research. Operational arrangements between craft breweries and their corporate owners are unclear, and it is, therefore, difficult to determine how much agency²², if any, a craft brewery in this scenario has. My data collection strategy involved questioning craft brewery motives and behaviours which would be obstructed by a lack of understanding of craft brewery agency. Six craft breweries across New Zealand were excluded on this basis. Likewise, craft breweries with a public share offering were also excluded from selection.

Three craft breweries in New Zealand have a public share offering. In New Zealand, shareholders do not typically participate in the day-to-day management of the company (“What it means to be a shareholder,” 2022). This means that routine operations are unlikely to be affected by the presence of shareholders in the brewery. However, managers of these breweries have an obligation to their shareholders and may have to consult them before engaging in a large-scale collaboration or change in operation. Again, the issue of inclusion here, is that it is unclear how much agency these breweries have relative to their independently owned counterparts. Contract brewers were also excluded from this research, although not for agency-related reasons.

Contract brewers do not own a physical brewery. Instead, they contract the production of their beer to other breweries. The contract brewer typically assumes responsibility for the sales, marketing, and distribution of the beer (Crump, 2021). Contract brewing may be carried out at multiple sites, sometimes simultaneously, and without a physical brewery, a contract brewer cannot be associated with a specific geographic location. Determining the precise number of craft breweries excluded on this basis is challenging because contract brewers are not transparent about their lack of physical brewery. However,

²² Agency here is considered in terms of the craft brewery’s ability to engage and collaborate with other breweries without consultation with, or approval from, the corporate owner.

their exclusion was achieved by only including physical breweries in this research. I now proceed to explain how I identified regions of New Zealand I sought data from.

Region Selection

I already established that craft breweries operate across all regions of New Zealand, supporting the variance I required to respond to my research questions. However, a subsequent determination needed to be made regarding which regions were to be included. Seeking a consensus of all regions would have encapsulated all settings of geographic proximity between craft breweries in New Zealand. However, practicality, time, financial constraints, and not least of all COVID-19 travel restrictions, prohibited this. Instead, regions were selected based on their perceived variance from other regions. Practically, this meant that the selection of a region was based on my interpretation of the data collected from the preceding region. I explicate this process further in the data collection section of this chapter. This iterative process allowed me to make data-driven decisions regarding which regions were to be included in my research. However, for this process to be initiated I had to decide which region I would seek data from first. I elected to begin the process by collecting data from the Auckland region, and this was driven by both purposive and convenience sampling rationales.

I intended to begin data collection in a region that reflected a dense population of geographically proximate craft breweries. Three corresponding regions were identified: Auckland, Wellington, and Christchurch. When I began data collection, interregional travel in New Zealand was subject to intermittent prohibition due to COVID-19-related government travel restrictions. As such, I elected to first collect data from the region in which I reside, Auckland. This reflected a convenience sampling tactic (Etikan, Musa, & Alkassim, 2016), which prevented me from having to delay data collection.

Accessing Craft Breweries within a Region

Within each region, a consensus of craft breweries was sought. This involved identifying every craft brewery in the region that corresponded to the sampling criteria. I achieved this via a combination of *Google Maps* and *Untapped*²³ searches. The number of craft breweries that corresponded to the sampling criteria is shown in Table Ten. Once suitable craft breweries in a region were identified I contacted them via e-mail. Obtaining a contact e-mail address was a straightforward process, as they were frequently available on the craft brewery website. My initial e-mail included an information sheet (Appendix B), that detailed my research. The e-mail also included an invitation to meet with the brewery manager on a proposed date and time. Initially, I considered my response rate to be poor. Based on a series of six e-mails issued to craft brewers in the Auckland region, I received only two positive responses. However, I discovered that if my e-mail also included a complimentary remark about a recent experience with one of the brewery's beers, then I was more likely to receive a positive response. In instances where an e-mail

²³ An app that tracks craft brewery activity in Australia and New Zealand.

response was not received within 2-3 business days, I followed up with a phone call. On reflection, this may have been an intrusive approach. Though, I secured two additional positive responses as a result.

Brewery managers who declined to participate cited time constraints as the reason for non-participation. Mirroring research (Alonso et al., 2018) that finds craft breweries are frequently constrained by a lack of available time. Immediately following my first successful interview, the participant advised that his brewery, and others he was aware of, were time poor, as they had been struggling to meet the increased demand for craft beer during periods of COVID-19-related lockdown. Furthermore, I began data collection during the lead-up to Christmas 2020, which in a typical year also represents a period of high demand and associated time constraints for craft breweries. These two concurrent issues likely contributed to my initial poor response rate. A comprehensive breakdown of craft brewery response rates is shown in the table below:

Table 11: Craft Brewery Response Rates

Region	Craft breweries (No.)	Responded following email	Responded following phone call	No response received
Auckland Region	13	6	2	5
Northern Waikato	6	3	1	2
Dunedin	3	2	-	1
Great Barrier Island	1	1	-	-
Northland	3	1	1	-
Tasman Bay	7	3	1	3

COVID-19 had additional negative influences on my fieldwork. Conducting my fieldwork in person required extensive travel within New Zealand. This was obstructed by a series of lockdowns between 2020 and 2021, that prohibited interregional travel. Fortunately, interregional travel was permissible in the latter half of 2020, but access to my research funds had been suspended by the University. From my limited understanding of the issue, access to previously available research funds was suspended in response to financial uncertainty, associated with the loss of international students through New Zealand border closures. I could have circumnavigated some of these issues by conducting interviews remotely, via Zoom or similar teleconferencing software. Teleconferencing software proved to be a valuable tool for collecting qualitative data during the height of the COVID-19 pandemic. However, in-person interviews are considered a better format for building rapport and understanding between the researcher and the participant (Reñosa et al., 2021). Moreover, the use of teleconferencing software would have compromised the hermeneutic view of the ‘self’, meaning conducting the interview outside of the craft brewery setting, may have led participants to behave or respond differently (Patterson & Williams, 2002).

Fortunately, interregional travel in New Zealand remained accessible at the beginning of 2021, and access to research funds was restored around the same time. This enabled me to conduct my data collection interviews in person, as planned.

Serendipitously, this also coincided with the end of the Christmas period, and craft brewers appeared to have more time available to participate in my research. There also appeared to be a growing level of interest in my work from people in the industry, following the completion of data collection in Auckland. On two occasions, craft brewery managers contacted me before I had issued a request for an interview. Moreover, three others I contacted explained that they had heard of my work and were expecting a request. I considered this an interesting reflection of ‘local buzz’ (Bathelt et al., 2004) in the context of the industry. Realising at this point that craft brewers’ were keenly aware of the goings-on in the industry, I decided to publish an article (O’Hare, 2020) in a popular craft beer periodical, *The Pursuit of Hoppiness*. The article increased my exposure in the industry and seemed to promote me as a person worth meeting with. I was conscious when writing the article not to reveal my thesis content, to avoid influencing those readers whom I wished to participate in my research. The article was concerned with the relationship between hipster culture and craft beer. I continue this chapter by discussing the processes and stages of data collection.

Data Collection

Data were collected across six regions of New Zealand. I scheduled and conducted interviews in a timeline that was consistent with my objective of collecting and analysing data from one region before proceeding to the next. A total of 24 participants were interviewed across 21 different craft breweries. The distribution of participants is shown in Table 12:

Table 12 - Distribution of Research Participants

Region	No. of Participants	Total Craft Breweries in Cluster
Auckland Region	8	13
Northern Waikato	5	6
Dunedin	2	3
Great Barrier Island	1	1
Northland	2	3
Tasman Bay	6	7

Initially, I intended to interview the brewery manager of each craft brewery because controls of a craft brewery are centred on managerial supervision (Cardoni et al., 2018). In other words, decisions regarding knowledge-sharing and collaboration are taken at the managerial level. The manager was interviewed independently in all but two cases. In one case in Northern Waikato, the brewery manager insisted on having the brewmaster²⁴ present during the interview. The brewery manager explained that this was his

²⁴ The person who supervises the brewing process.

preference as he frequently consulted the brewmaster on managerial issues. Similarly, one brewery in the Tasman Bay region insisted that the interview be conducted with the brewery manager, brewmaster, and marketing manager. The interview was arranged by the marketing manager who felt that all three participants could provide valuable insights²⁵. On reflection, the three-participant interview was opportune for receiving a broad range of insights. Although, it presented challenges related to focus and time. I explain how I handled these multi-participant interviews as I delineate my interview procedures. I continue by discussing data collection in the sampled regions.

Auckland Region

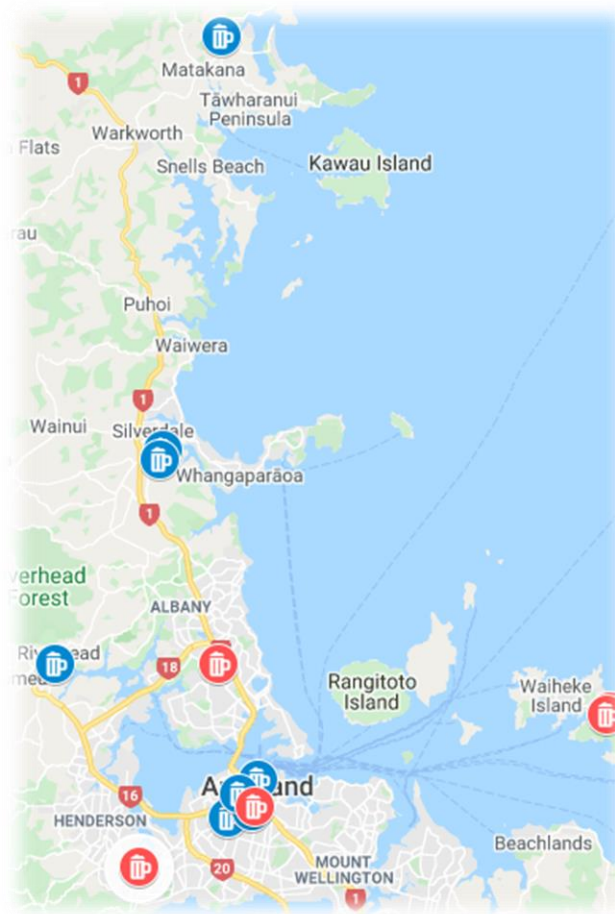
As previously noted, the Auckland region was the first data collection site. Following productive hermeneutic enquiry (Patterson & Williams, 2002), I conducted interviews in this region with a foreshadowing of understanding. This meant that I developed a series of pre-determined interview questions before the interview took place. As such, I approached the interviews in a semi-structured format. This allowed me to maintain relevancy during the interview, but also remain receptive to new meaning. Moreover, this approach allowed me to probe responses for more detail and justification where appropriate (Adams, 2015). On reflection, I may have approached the Auckland region with some naivete, and I failed to probe responses to the full extent that I could have. This was not a result of methodological choices, but rather a reflection of a lack of confidence when approaching my first round of interviews. The probing of responses was particularly limited in the first three interviews in the Auckland region. This had the unintentional consequence of participants going on tangents from the questions they were originally asked. However, this also granted access to the expanse of the participant's horizon and presented an opportunity for me to expand my own. Consequently, I was able to pursue subsequent interviews with an enhanced ability to maintain relevancy and probe where required. Research site details and participant demographics from this region are shown below:

Research Site One – Auckland Region

At the time of writing, 13 craft breweries in the Auckland region meet the sampling criteria I outlined earlier in the chapter. The Auckland region contains New Zealand's largest city and hosts the greatest number of craft breweries of any region featured in my research. Most craft breweries in this region operate in and around the central suburbs of Auckland City. However, there are also craft breweries that operate in relative isolation from the city. Namely, those based in Waiheke Island; Riverhead; Silverdale; and Matakana. To provide contrast with centrally located craft breweries, I made a concerted effort to ensure those relatively isolated breweries were included. Regretfully, however, I could not illicit a positive response from either craft brewery located on Waiheke Island. The image shown below presents the location of each craft brewery in the region. Craft breweries that participated in my research are represented by a **blue icon**, while those that declined to participate are represented by a **red icon**.

²⁵ This explains why the number of research participants exceeds the number of breweries sampled by three.

Figure 2 - Auckland Region Craft Brewery Locations



Participant Demographics

I assign each craft brewery a code based on the sequence of data collection. Specifically, Auckland craft breweries are abbreviated to AB (Auckland Brewery), followed by a number that indicates the order of data collection i.e., AB1, AB2...and so forth in that fashion. These codes are shown below with the corresponding participant demographics:

Table 13 - Auckland Participant Demographics

Craft Brewery	Gender	Age	Nationality	Years' Experience in Brewing
AB1	Male	30-40	NZ	5-10
AB2	Male	30-40	NZ	10-15
AB3	Male	30-40	NZ	10-15
AB4	Male	30-40	NZ	15-20
AB5	Male	30-40	NZ	5-10
AB6	Male	30-40	NZ	10-15
AB7	Male	50-60	USA	30-40
AB8	Female	30-40	NZ	<1

Subsequent Regions

Having expanded my horizon during the collection and subsequent analysis of data from the Auckland region, I was guided to the next data collection site. At this stage, my data collection strategy could be described as theoretical sampling (Glasser & Strauss, 1967), as I was allowing the development of theory to determine the research sites I visited. Specifically, my analysis of the Auckland region guided me towards a smaller context of fewer and more disparately located craft breweries. Northern Waikato was selected on that basis. Following the same collection strategy, analysis of Northern Waikato indicated a need to ascertain a South Island perspective, hence Dunedin became the third region. This process was repeated twice more with Great Barrier Island being identified as an opportunity to examine a craft brewery in geographic isolation, and Northland as a case of craft breweries operating in relative isolation. As such, my selection of these regions was driven by emerging theory, rather than pre-determination (Bell, Bryman, & Harley, 2015). However, this process was not applied to Tasman Bay.

The inclusion of Tasman Bay in this research was pre-determined, representing a purposive sampling approach (Bryman, 2004). This is because this region is distinct from all others, in that it is where virtually all of New Zealand's commercial hop cultivation occurs. Data collection in Tasman Bay started when I believed that a point of data saturation had been reached in my analysis of prior regions. This was to understand if and how close geographic proximity to hop farms altered approaches to knowledge-sharing or collaboration. I explain in more detail how I attended to data saturation in the data analysis portion of this chapter.

My confidence as an interviewer grew with each iteration of data collection, making it easier to develop a rapport with the participants. In several instances, this led to me having a beer with the participant post-interview. These interactions did not constitute part of the data collection interview but did expand my horizon and assist in my interpretations because craft brewery managers, like most people, speak more candidly after a beer or two. Craft brewery locations and participant demographics are shown below in the same style as the Auckland region.

Research Site Two – Northern Waikato

Northern Waikato is host to six craft breweries that fit my research setting. Three of those breweries are situated in the confines of Hamilton City. Two are on the outskirts of Hamilton City. The sixth craft brewery is located approximately 40km West of Hamilton in the township of Raglan.

Northern Waikato is like the Auckland Region, in terms of craft brewery centralisation in the City and scattered distribution outside of the City. Its point of variance is its relatively small size to the Auckland Region.

Figure 3 - Northern Waikato Craft Brewery Locations



Participant Demographics

I follow the same coding system for craft breweries in this region as the Auckland Region. Craft breweries are denoted by the abbreviation WB (Waikato Brewery). WB4 involved a multi-participant interview with the brewery manager and brewmaster. The manager is labelled as interviewee 1 and the brewmaster as 2.

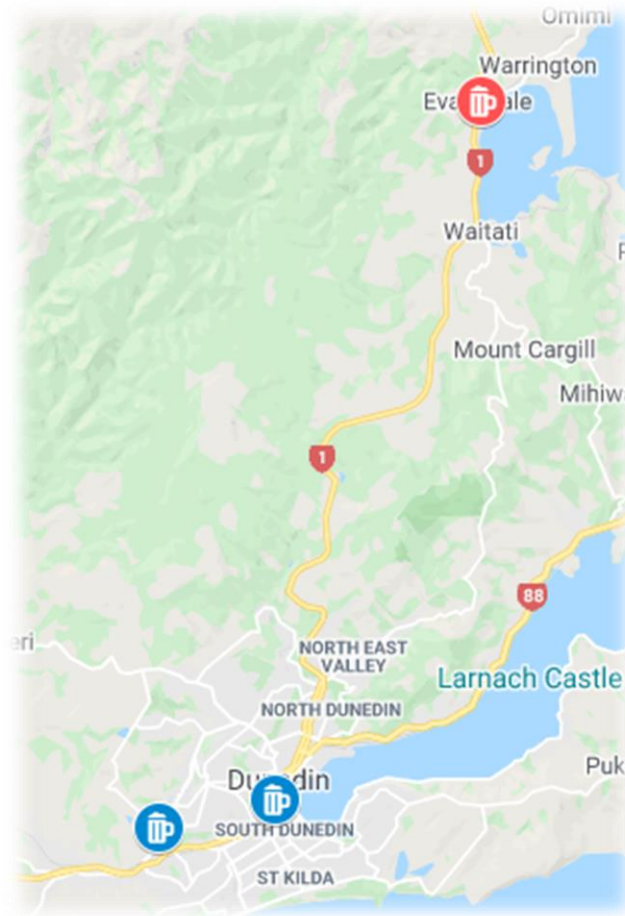
Table 14 - Northern Waikato Participant Demographics

Craft Brewery	Gender	Age	Nationality	Years' Experience in Brewing
WB1	Male	40-50	NZ	20-30
WB2	Male	30-40	NZ	10-15
WB3	Male	40-50	NZ	20-30
WB4-1	Male	30-40	NZ	<5
WB4-2	Male	30-40	NZ/ITALY	5-10

Research Site Three – Dunedin

Dunedin hosts three craft breweries that fit my research setting. Two of these breweries are within the confines of central Dunedin. The remaining is located 22km north of Dunedin in Evansdale. Dunedin is less populous than Hamilton and Northern Waikato, and this is reflected by fewer craft breweries. However, its variance is principally based on its South Island location, rather than its difference in size.

Figure 4 - Dunedin Craft Brewery Locations



Participant Demographics

Craft Breweries in this cluster are denoted by the abbreviation DB (Dunedin Brewery).

Table 15 - Dunedin Participant Demographics

Craft Brewery	Gender	Age	Nationality	Years' Experience in Brewing
DB1	Male	30-40	NZ	10-15
DB2	Male	30-40	USA	<5

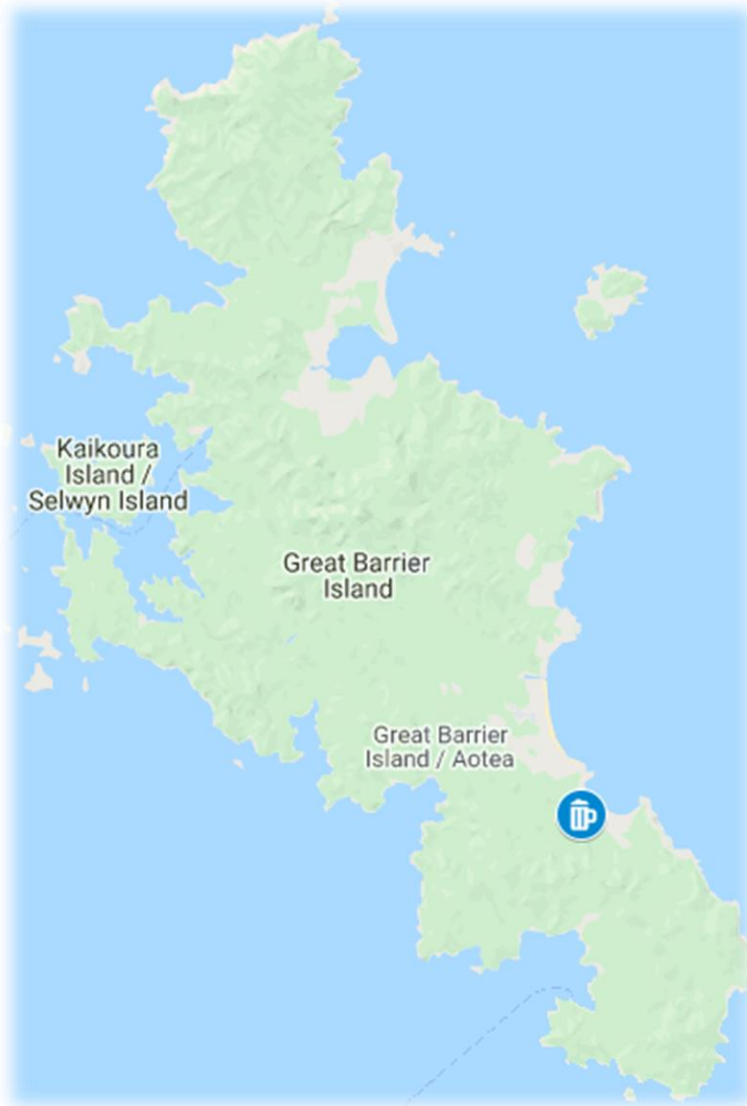
Research Site Four – Great Barrier Island (Aotea)

Great Barrier Island (Aotea) is a large island off the North-East Coast of New Zealand. It is approximately 115km from central Auckland. The island is approximately 285km² and has fewer than 1,000 permanent denizens. It is the largest island in the Hauraki Gulf and is a popular tourist destination for boaters²⁶ in the region. There is one craft brewery located on the Island that fits my research setting. It is also the only brewery of any description on the island. Great Barrier represents a unique opportunity to examine a craft brewery that operates in geographic isolation. Until recently, only a few seasoned craft beer drinkers were

²⁶ New Zealand and Australian slang for a boat enthusiast.

aware of the brewery’s existence (Garland, 2021). Likewise, I was unaware of the brewery before conducting my research. Participant WB4-1 brought it to my attention following our interview, representing an instance of snowball sampling (Goodman, 1961).

Figure 5 - Great Barrier Island Craft Brewery Location



Participant Demographics

The craft brewery in this region is denoted as GB (Great Barrier).

Table 16 - Great Barrier Island Participant Demographics

Craft Brewery	Gender	Age	Nationality	Years' Experience in Brewing
GB	Male	25-30	NZ	5-10

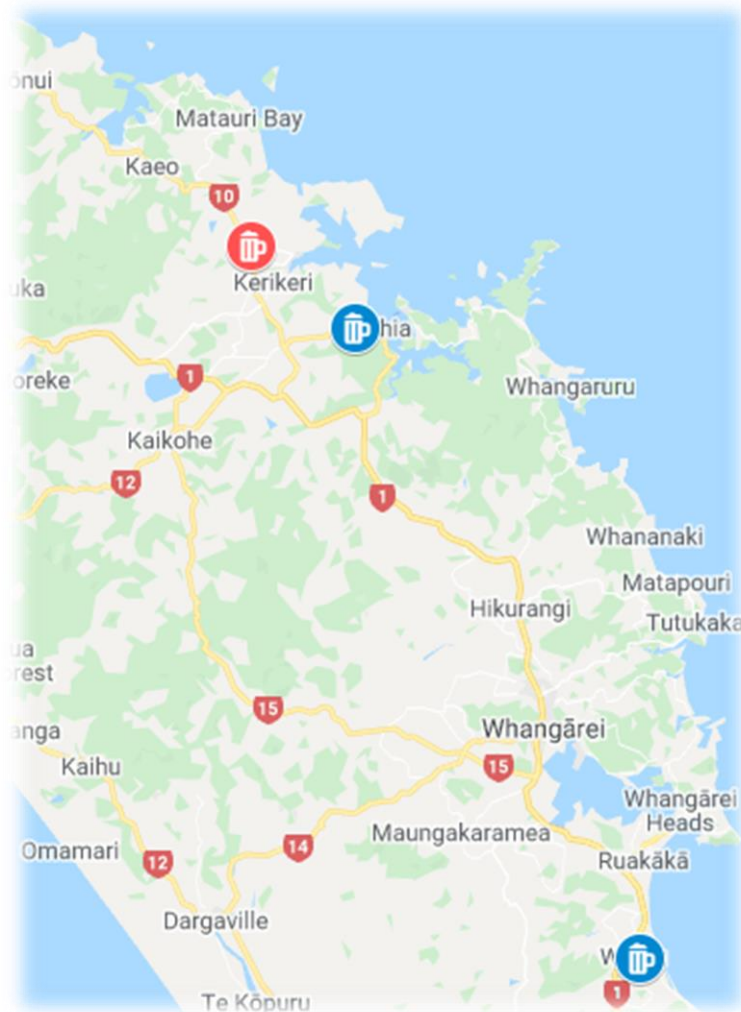
Research Site Five - Northland

13,789km² with a population of fewer than 200,000, Northland represents a large but sparsely populated region of New Zealand. Three craft breweries in this region adhere to my sampling criteria. The first is in

Waipu, in the Southern part of the region. One is located close to Kerikeri, on the outskirts of the township, and the other in Haruru, near Paihia.

Northland represents a region of craft breweries operating in relative isolation from one another. The degree of isolation is less extreme than that of Great Barrier Island, but more so than any other region of breweries included in this research.

Figure 6 - Northland Craft Brewery Locations



Participant Demographics

Craft Breweries in this region are abbreviated to NB (Northland Brewery).

Table 17 - Northland Participant Demographics

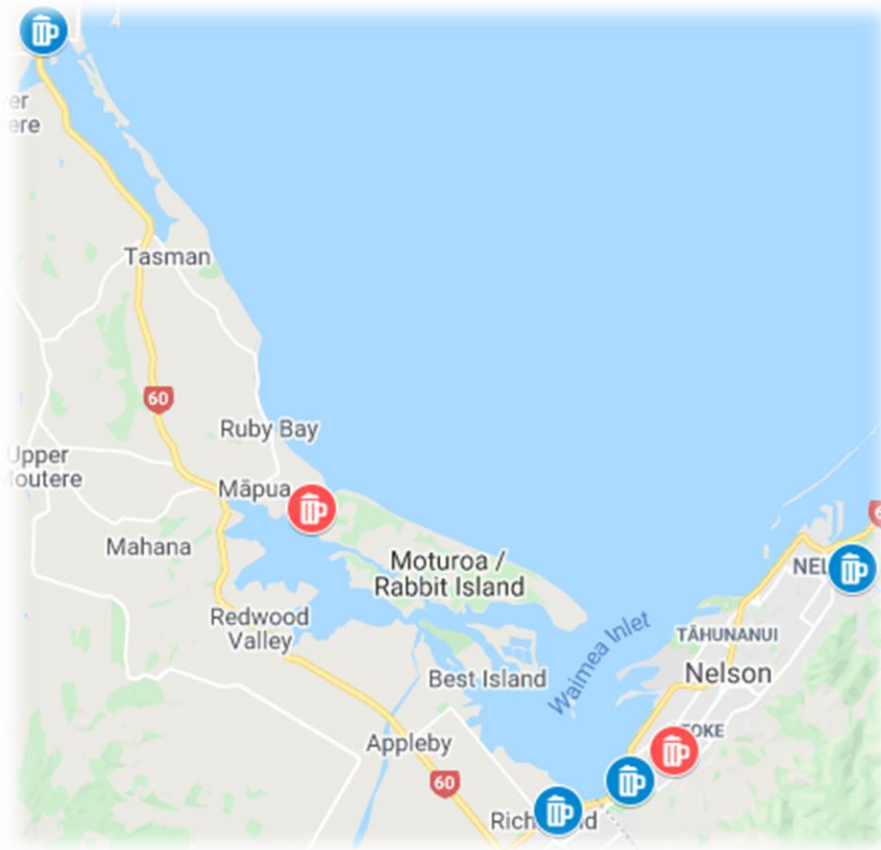
Craft Brewery	Gender	Age	Nationality	Years' Experience in Brewing
NB1	Male	30-40	USA	10-15
NB2	Male	30-40	UK	15-20

Research Site Six – Tasman Bay

Tasman Bay is defined in this research as the region encapsulating Nelson City, and Westward as far as Motueka. Six craft breweries in this region adhere to my sampling criteria. In terms of size and distribution

of brewery locations, Tasman Bay represents a region not dissimilar from Northern Waikato, say for its South Island location. Variance in this region relates to the location of hop farms. Craft breweries in this cluster are considered unique given their close geographic proximity to these industry suppliers.

Figure 7 - Tasman Bay Craft Brewery Locations



Participant Demographics

Craft breweries in this cluster are abbreviated to TB (Tasman Brewery). TB1 involved a multi-person interview involving the brewery manager, the brewmaster, and the marketing manager. They are identified as 1, 2, and 3 respectively.

Table 18 - Tasman Bay Participant Demographics

Craft Brewery	Gender	Age	Nationality	Years' Experience in Brewing
TB1-1	Female	40-50	UK	10-15
TB1-2	Female	50-60	UK	30-40
TB1-3	Female	30-40	NZ	<5
TB2	Male	40-50	USA	15-20
TB3	Male	40-50	NZ	10-15
TB4	Male	40-50	UK	20-30

Data Collection Locations

Interviews were conducted in person across 21 different locations. Those locations being the respective breweries of each participant. Conducting interviews in-person and on-site was consistent with the

hermeneutic view of the 'self' (Patterson & Williams, 2002). In most cases, the interview was conducted in the bar area of the brewery. If no bar area were available, the interview would be conducted in a small office space. Although, in the case of GB, I conducted the interview in a paddock of sheep adjacent to the brewery while sitting on a beanbag. I conducted the interviews within the brewery's business hours, so that I was not requesting the manager to be present outside of their normal working day. But I also tried to target business hours when the brewery was not yet open to the public. This was an effort to ensure I had the manager's full attention. As well as being consistent with the hermeneutic view of the 'self', conducting interviews on-site promotes comfort on the part of the participant (Herzog, 2005), which was intended to allow them to be better contributors. However, on-site interviews also allowed me to make observations and for the participants to demonstrate the use of technical equipment when a verbal explanation would have been challenging. Attending to interviews on-site also meant that I witnessed an in-person interaction between GB and a Coromandel-based brewer, the details of which I relay in Chapter Five. I now discuss my interview strategy and protocol.

Interview Strategy and Protocol

Conducting semi-structured interviews, I guided the participants using the pre-determined questions I had developed for the interview. A template of these questions is shown in Appendix D²⁷. However, I also wanted to remain receptive to new meaning, so I recognised the value in having the interview tangent away from my prescribed interview questions and my immediate perception of relevance. That said, when I detected that the discourse had significantly departed from the remit of the thesis, I redirected the conversation. I noticed during the analysis phase that these tangents did lengthen the time taken to analyse the interview data, but they did produce new meaning that challenged and expanded my horizon.

In terms of protocol, I began each interview with a brief introduction of myself and the thesis objectives. I then presented the participant with a copy of Appendix B, the participant information sheet. I previously e-mailed this to the participant when requesting to schedule an interview, but for the sake of assurance, I provided it again. With this, I also presented a copy of Appendix A, the participant consent form. I asked the participant to carefully read each document and sign if they agreed with the content. The signed consent form was retained for my records, but a digital copy was offered to the participants for their records. Every participant signed the document without hesitation, and only one requested a digital copy of their signed consent. I thought it prudent to verbally advise them that they were anonymised in the thesis and that they had the right to withdraw at any time. Once that was understood I switched on my audio-recording device and began the interview. I began each interview by asking how the participant had

²⁷ The broad interview questions I developed at the onset never altered as I began to collect and analyse data. However, my probing questions did change and reflected my growing comprehension of the research and other issues in the craft brewing industry.

become involved in craft brewing. The purpose of this was to gather demographic data about the participant, but also to put them at ease by allowing them to talk about themselves for an extended period.

Once the interview had ceased, I switched off the device and thanked the participant for their time. Several participants at this stage asked about my thesis completion timeframe. I gave an optimistic response. This led me to ask if the participant was interested in receiving a completed copy of the thesis. Five participants are currently awaiting said copy. Finally, I asked each participant if I could reach out to them again if I had any further questions. In all cases, it was agreed that contact via e-mail would be the most appropriate means of communication if I had any further questions. Before discussing how the collected data was analysed, I explain how I attended to interviews comprising of multiple participants.

Attending to Multi-Participant Interviews

WB4 and TB1 interviews were conducted with two and three participants, respectively. The manager of WB4 requested the attendance of the brewmaster, and the marketing manager of TB1 requested her presence, along with the brewery manager and brew master. In the former case, WB4 explained that he discussed managerial decisions with his brewmaster, and his inclusion may provide useful insights. The marketing manager of TB1 seemed to take a personal interest in my research when I discussed it with her on the telephone. I believe her interest drew her participation in the interview, which she extended to the brewmaster. These requests clashed with my intention to conduct one-to-one interviews, but I made concessions for these breweries to permit their inclusion in my research. Typically, a focus group style interview is more appropriate when trying to understand a “*tightly defined topic*” and attention is paid to group interaction and discourse (Bryman, 2004, p. 346). Given that this was not the objective of my interviews, I aimed to obtain a separate response to my questions from each participant. I did this by addressing the participant by name when asking the question. This means that the group-style interviews ran significantly longer than individual ones, but the diversity of meaning obtained meant that the format also proved favourable to data collection. Although, that also came with an increased requirement to guide the group discourse, especially in the case of TB1.

I often enabled group discourse between the manager, marketing manager, and brewmaster in the interest of remaining open to new meaning. However, I frequently found myself having to guide the conversation back, which interrupted the flow of discourse. Managing this dynamic with WB4 was relatively easy with two participants, but the inclusion of a third frustrated the process. Specifically, with TB1, the brewery manager seemed to want to answer questions on behalf of other participants and occasionally cut them off mid-sentence. On reflection, I am happy with the empirical material obtained in these interviews. However, during the analysis, I remained conscious that focus groups can create unfavourable conditions such as the dominance of one participant and suppression of genuinely held views (May, 2001). Overcoming this involved taking note during the interview of instances where a participant appeared to dominate and where responses appeared to be cut short by another participant's interjection. I now discuss how I attended to data analysis.

Data Analysis

Here I navigate the process of data analysis from interview transcription through to research validity, consistent with the methodological perspectives of hermeneutic enquiry. Part one of the analysis began with a verbatim transcription of the interview recordings. During my first reading of the transcript, I integrated notes that I had taken during the interview. This meant any thoughts I had during the interview were recorded (Saldaña, 2021), and could be compared with the transcription. Next, I developed an indexing system for the transcripts.

Patterson and Williams (2002) recommend a system where sentences, rather than lines of text, are numbered. Initially, I followed this recommendation but altered it during the coding phase as meaning units (or units of analysis) tended to be represented by paragraphs of texts, and occasionally broken sentences. Consequently, I elected to index the transcripts by numbering each line of text. Once I had an indexed transcript, I began the proofing phase.

I proofread each transcript at least once, but frequently more so. I did this by reading the transcript while listening to the corresponding recording. This increased my familiarity with the texts but also allowed me to check for inconsistencies between the transcript and the audio account. This helped to ensure the validity of the transcript before proceeding to the first coding phase – which in hermeneutic enquiry is referred to as the identification of meaning units.

Identification of Meaning Units (Coding Phase One)

Initial coding in productive hermeneutics is characterised by the identification of sections of text, referred to as meaning units (Patterson & Williams, 2002). Meaning units serve as the unit of analysis in this thesis. Meaning units have no prescribed word count but frequently comprise multiple sentences (Patterson & Williams, 2002). I approached my search for meaning units without a specific formula (Saldaña, 2021), which meant that *“this stage of the analysis required careful and thoughtful reading of the text”* (Patterson & Williams, 2002, p. 47). I focused my attention on the identification of meaning units that appeared to provide insight pertinent to my research questions and thesis context. After completing an initial search for meaning units I revisited the transcript, paying attention to portions of text I had initially dismissed. Once I had completed this phase, I continued with the development of thematic labels.

Developing Thematic Labels (Coding Phase Two)

Through the identification of meaning units, I developed familiarity with the data. I used this understanding to begin developing thematic labels. Again, there is no prescription in productive hermeneutics as to when thematic labels should be developed; Patterson and Williams (2002, p. 47) describe it as a *“feeling”*. As such, I began developing thematic labels in conjunction with the identification of meaning units, then revised these labels with each examination of the interview transcript. Thematic labels represented my initial interpretations of the data and early insights into my research questions. More specifically, thematic labels serve as the headings under which meaning units are

categorised. However, meaning units are not exclusively categorised (Tesch, 1990), meaning that the same meaning units were at times organised under more than one thematic label. I could have used analysis software such as *Nvivo* to develop my thematic labels, but ultimately elected not to. *Nvivo* is especially useful for managing sets of qualitative data, derived from a large number of participants or extended participant interviews (Welsh, 2002). However, given the concise, but comprehensive, sample of interview respondents in my research, I did not recognise this benefit of using *Nvivo*. Furthermore, according to Welsh (2002, p. 5), the use of *Nvivo* in qualitative analysis can “distance” the researcher from the data. Meaning the researcher focuses on the quantification of qualitative data, instead of understanding relationships between themes. Therefore, I opted for an ‘analogue’ approach to my data. I believe this allowed me to become more intimate with the data and supported the identification of thematic labels. Practically, my ‘analogue’ approach involved the development of a series of analysis tables in *Microsoft Word*, in which meaning units were manually categorised. Once categorised, I developed a corresponding interpretation. In Table 19, I provide a section of a table, used to analyse my interview with TB4, to illustrate how my analysis was conducted. The table shows the thematic label, accompanying meaning units, and my initial interpretation. While the vast majority of my analysis was conducted following the structure in Table 19, I occasionally found myself organising meaning units with a pen and paper, when I had a sporadic thought or idea about their association with thematic labels. This allowed me to analyse data when a computer was not immediately accessible. Handwritten notes can be a poor form of record keeping, but a recent study (Crumb et al., 2022) finds that handwritten notes support the encoding and understanding of information. This suggests my occasional handwritten approach may have supported the development of deeper meaning.

Table 19 - Illustration of interpretive analysis of a respondent interview

Thematic label	Meaning units	Interpretation
Collegiality between craft breweries	<p><i>“I asked [local brewer] for a piece of advice once about how to put a piece of equipment in, and that guys on his 7th brewery now or something, he knows bloody everything, and he was like yeah [participant name] what do you need, how can I help.”</i></p> <p><i>“If I get a call from another brewer about something: 1) it’s great to hear from them – it usually ends up being heaps of fun, I’m gonna end up learning something myself.”</i></p> <p><i>“The other day [local brewer] called up because they needed some kegs and we had some spare ones,</i></p>	<p>The respondent accounts for friendly and helpful interactions between craft brewers, especially local ones. He alludes to the idea that there is a community element to craft brewing, where fellow brewers are receptive to requests for assistance and comfortable requesting assistance.</p> <p>These elements of collegiality point towards a</p>

	<p><i>they took some, sometimes the brewer rung up and asked for some spare hops, and vice versa.”</i></p>	<p>community of practice amongst craft brewers.</p>
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Productive hermeneutics often entails the analysis of each interview before proceeding to the next “*in case there are insights to be gained that would help improve the next interview*” (Patterson & Williams, 2002, p. 49). However, I found this to be impractical at times, especially when I had travelled to a region and had several interviews to conduct in a limited number of days. In Dunedin, for example, I conducted two interviews in one day, and in Tasman Bay, I conducted four interviews across three days. In these instances, I listened to the interview transcription and made some cursory handwritten notes before proceeding to the next interview. Once I was satisfied with the development of thematic labels, I began to seek interrelationships between the themes.

Seeking Interrelationships Between Themes

Depending solely on the identification of themes represents a shallow level of interpretation, according to Patterson & Williams (2002), because it often amounts to counting the instances certain themes are identified. Instead, conforming to productive hermeneutics (Gadamer, 2004), I sought to understand the interrelationships between those themes, to achieve an “*insightful interpretation*” (Patterson & Williams, 2002, p. 48). I achieved this via two avenues of further analysis.

Firstly, I examined the analysis tables I created for manually developing thematic labels and sought to establish the interrelations between different themes and meaning units. Practically, this involved a re-examination of both meaning units and thematic labels, then trying to identify and understand the relationships between them. Meaning units that transcended multiple thematic labels were particularly insightful in the identification of interrelations. Understanding these interrelations was an integral step toward discerning how my research would ultimately contribute to the development of theory (Corbin & Strauss, 2008). However, to respond to my research questions I integrated a further level of analysis based on geographic location.

Geographically Contextualised Analysis

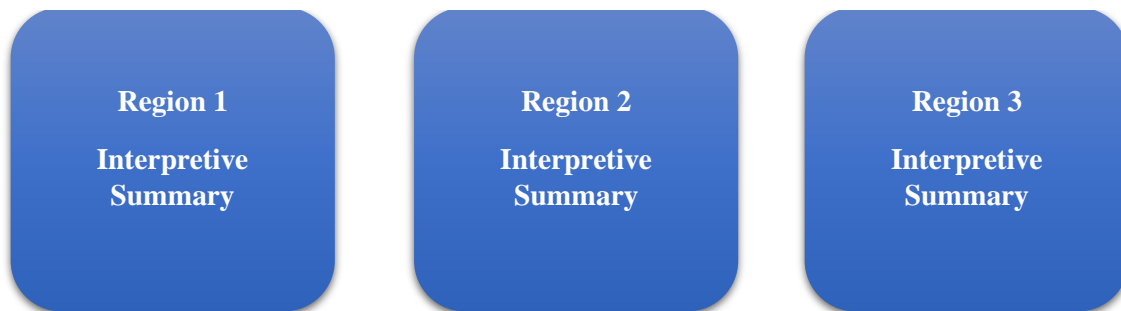
Responding to my research questions required contrasting interpretations from each region of craft breweries. Achieving this meant incorporating a level of analysis, in addition to those outlined in the Patterson and Williams (2002) approach. I contextualised my analysis based on its region of origin, represented by the images below:

Figure 8 - Single Regional Summary



Practically speaking, this involved creating another series of analysis tables for each region included in the thesis, within which thematic labels were organised. Instead of reorganising the ‘raw’ meaning units into these analysis tables, I developed an interpretive summary of meaning units from each brewery. Using the analysis tables as a visual aid enabled me to contrast the thematic labels and their associated meaning from each brewery in the region, and eventually arrive at an interpretive summary of the region as a whole. Once this process was completed for each region, it became possible to make inter-regional comparisons.

Figure 9 - Multiple Region Summary



The purpose of this multi-layered approach was to understand if, and how, emergent meaning transcended geographic boundaries. Specifically, it enabled me to observe if certain perspectives were confined by geographically embedded networks of craft breweries. I continue my discussion of analysis by explaining how I attended to data saturation.

Attending to Data Saturation

Recognising the “...point at which observing more data will not lead to the discovery of more information related to the research questions” (Lowe, Norris, Farris, & Babbage, 2018, p. 191) can lack transparency in interpretive research. Interpretivists may declare that saturation has been reached, but neglect to account for how saturation was determined (Fusch & Ness, 2015). As such, I approached data saturation on two fronts.

Firstly, I considered thematic saturation (Green & Thorogood, 2018). After analysing an interview, I contrasted the thematic labels I had developed in previous analyses. In doing so, I was able to determine if new thematic labels were emerging from different interviews. Once I was satisfied that no new thematic labels were emerging, I was confident that thematic saturation had been reached. Specifically, I was confident that thematic saturation had occurred following the analysis of Northland. At this stage, I had analysed data from a variety of cluster types and despite the contextual variance, no new thematic labels were emerging. However, I did not cease data collection at this point, and I proceeded to collect data from the Tasman Bay cluster for reasons of its unique complexion, as previously outlined. Tasman Bay was conducted to ascertain if there were new thematic labels linked to its contextual idiosyncrasies. Incidentally, no new thematic labels emerged from this cluster. However, its inclusion advanced the stage of theoretical saturation.

Theoretical saturation is where new data cannot further contribute to the development of theory (Glaser & Stauss, 2009). As with thematic saturation, I initially anticipated this point to have been reached after the inclusion of the Northland region. However, the inclusion of Tasman Bay advanced the understanding of some thematic labels, specifically concerning inter-industry knowledge-sharing and collaboration. Accounts of interaction between craft breweries and other types of organisations had been detected in the Northern Waikato cluster. However, these inter-industry interactions were with firms outside of the craft brewery supply chain. Whereas the inclusion of Tasman Bay advanced my understanding of these inter-industry interactions within the supply chain context. I proceed to the end of this section by discussing how I attended to the issue of validity in hermeneutic-based research.

Attending to Validation

Validity is often associated with quantitative research, where validity is concerned with the extent a concept has been measured accurately (Heale & Twycross, 2015). Measurement is not an objective of my research, meaning validity here cannot be considered in quantitative terms. Productive hermeneutic enquiry relies on a fusion of my horizon with the horizons of research participants. Within that, there is a need to recognise the deeply subjective nature of the interpretations generated through said fusion. It is commonly accepted in hermeneutic enquiry that multiple interpretations of the same data may concurrently exist (Patterson & Williams, 2002). Conventional approaches to validity in qualitative works are deemed incompatible with hermeneutic research because any attempt to validate is instead another level of interpretation (Schwandt, 1994). That said, I did not abandon any notion of validity. I followed three steps towards validity commonly adopted in productive hermeneutic enquiry.

Table 20 - Validity strategies in hermeneutic research based on Patterson and Williams (2002)

Persuasiveness	This step towards validity involves providing the reader with sufficient evidence to support the interpretation that has been made. The purpose of presenting evidence is to ‘persuade’ the reader that my interpretations are reasonable and warranted. The reader does not necessarily have to agree with my interpretation but is satisfied that my interpretation is based on the evidence presented.
Insightfulness	This step involves advancing the reader's understanding of a phenomenon. Rather than merely presenting a series of meaning units to the reader, I provide an interpretive analysis of those meaning units. The purpose of this is to advance the insight held by the reader before they read my interpretations.
Evaluative	The third step speaks to the utility of the research. The purpose of my thesis is to more fully understand the roles of proximity. The utility of my interpretations is therefore assessed on their ability to respond to that purpose. Consequently, this step towards validity involves an evaluation of how my interpretations meet the ambitions of my thesis.

The three steps towards validity are unlikely to satisfy researchers who aim to achieve certainty from the application of their methodological choices. However, as a proponent of productive hermeneutics, I take a Gadamerian stance (Gadamer, 2004) that my concern is for depth of meaning more so than the certainty of meaning. I conclude this chapter by addressing the ethical considerations of this research.

Ethical Considerations

I submitted a low-risk notification to the Massey University Human Ethics Committee, which was subsequently approved in February 2020 (Appendix C). A low-risk determination was made as all research participants were adults capable of providing informed consent to participate in my research. No risks to myself or participants, arising as a result of my research, were detected. My supervisors were involved in the review process, as required by a low-risk submission. The result of this review was an agreement that embarking on my research presented limited risks to myself and the participants.

Despite the low-risk status of this research, consideration was given to the anonymity of my research participants. Out of necessity, I provided a significant volume of context around the New Zealand craft brewing industry, including the physical location of craft breweries. Using this information, a reader may be able to infer the identity of the craft breweries involved in this research, and by extension the craft brewery manager. This reflects a broader issue of confidentiality in qualitative research that places an emphasis on contextual settings (Bos, 2020). Responding to this, I anonymised the participants to the greatest possible extent, without compromising on the quality of my research. I maintained that no risks to myself nor the participants were anticipated as a result of my research. On reflection, anonymising my participants came at the expense of the richness of insight and context that could have been provided. Based on my interviews, and horizon, I argue that craft brewers would appreciate the opportunity to be named in research of this type, principally for reasons of marketing and positioning.

Chapter Four: Context

“He was a wise man who invented beer”
- Plato

Introduction

In this chapter, I discuss how craft brewers in New Zealand define the terms *craft brewery* and *innovation*. As a reminder, I discuss the term *craft brewery* because a firm definition does not exist in the New Zealand context. Moreover, I argue that existing *craft brewery* definitions from other contexts, such as the USA, cannot be re-applied to New Zealand, due to broad differences in size and scale of production. A discussion of the term *craft brewery* also provides a contextual basis for the findings I present in chapters five and six. Similarly, I discuss definitions of *innovation* in this chapter because (1) there is a considerable amount of variability between extant *innovation* definitions, (2) *innovation* comprises part of how craft breweries are defined, and (3) an understanding of how craft brewers perceive *innovation* lends itself to a greater understanding of the research context. Comprehension of the research context is relevant because it is the domain from which the evidence presented in this thesis was derived (Cukurova et al., 2018). Simply put, one cannot fully appreciate the evidence presented without understanding where it has come from. Contextual knowledge is especially important in innovation research because contextual settings can influence an organisation’s approach to innovation (Bellantuono, Schiuma, Pontrandolfo, & Scozzi, 2013). Contextual attributes such as institutional, social, and industry characteristics may reshape and redefine innovations (Autio, Kenney, Mustar, Siegel, & Wright, 2014). As such, this chapter serves to support the contributions to knowledge made later in the thesis. Although, independent contributions are also made here.

Craft brewery definitions that emerge in this chapter may be used to inform future research in the growing domain of craft brewery scholarship (Alonso et al., 2018; Cunningham & Barclay, 2020; Lotfi et al., 2021). Emergent definitions are specific to the New Zealand setting but can be used as a baseline for comparison with other craft brewing industries. Similarly, the definitions of *innovation* in this chapter are germane to the New Zealand craft brewing context but may be used for comparison with other industry settings, particularly other craft industries.

I begin this chapter with a discussion of *craft brewery* definitions, before progressing into how *innovation* was defined. I structure this by identifying and discussing themes that emerged during the participants’ delineation of what each of the terms meant.

Industry Perspectives of a Craft Brewery

Meaning in this vein was derived from a line of questioning that began with ‘can you tell me what a craft brewery means to you?’. Eight themes were identified in my analysis of participant definitions of a craft brewery. Each is shown in Table 21 accompanied by a summary of their meaning:

Table 21 - Craft Brewery Definition Themes

Theme	Meaning
Independence	Defined by an absence of ownership by an overseas corporation. However, an exception may be afforded to craft breweries that have retained original teams post-corporate acquisition.
Size	Defined by smallness relative to corporate breweries operating in the same context. Smallness is also associated with a reluctance to introduce automation.
Passion	Defined by the craft brewers high level of passion for beer when compared to a corporate brewery. Craft brewers perceive themselves to be less concerned with financial gain than their corporate counterparts. But also accept that it is necessary to prioritise financials to keep their brewery in operation.
Flavour	Craft brewers perceive their beer to be of stronger taste when compared to corporate counterparts. But fall short of denoting superiority of taste. Stronger tasting beer is a consequence of consumer dissatisfaction with corporately brewed beer.
Community	Defined by an affinity for local communities through ‘being a good neighbour’.
Environmentalism	Defined by considering the environmental impact of the function of the craft brewery. However, appearing environmentally conscious is also a vehicle for marketing and legitimacy.
Community of Practice	Defined by the apparent friendliness and cooperativeness of craft brewers to one another.
Innovation	Defined by the continued production of new beer styles to satiate the consumers' demand for novelty.

Independence

Based on participant responses, independence in the New Zealand craft brewing context is broadly characterised by two conflicting perspectives. The first perspective reflects extant positions (Cunningham & Barclay, 2020; "What is a Craft Brewery," 2021) that corporately acquired craft breweries are not independent, and by extension not *craft* breweries. The second strand of participant responses is more flexible and argues that corporately acquired craft breweries may continue to be identified as such, under certain conditions. For instance, an emergent theme indicates that a craft brewery can retain the ‘craft’

designation, post-corporate acquisition, so long as the brewery were independent upon its inception. Remarks from participant AB1 spoke to this view:

“...something that is independently owned or started.” (AB1:42)

“Tuatara craft brewery has been bought by DB, but it’s still a craft brewery because of the roots and where it started from.” (AB1: 42-45)

According to AB1, the enduring independence of the brewery is less relevant to the craft designation than its provenance. The participant’s account of *Tuatara*’s acquisition is supportive of this. However, New Zealand’s corporate breweries, Lion (“Our History,” 2021a) and Dominion Breweries (“Our History,” 2021b), also have a heritage of independent ownership. This suggests that following its acquisition, there is a stage at which a craft brewery can lose the ‘craft’ designation. Recognising this during the interview, I pressed AB1 for further justification using another example of a craft brewery acquisition in New Zealand:

“Panhead²⁸ still is pretty much a craft brewery, and it still has the original people still there.” (AB1:54-55).

For the participant, the retention of “*original people*” carries some gravitas in preserving the craft designation post-acquisition. This suggests that the ‘craft’ moniker is more closely associated with the brewery staff, rather than the brewery itself. Participant TB1-2 provides further insight. She was the brewmaster of a craft brewery when it was acquired by Lion in 1999. Drawing on this as a parallel she stated that post-acquisition:

“The same person was brewing the beer, the same people same team, it’s just a perception out there in the marketplace. So why isn’t Panhead craft, you know -it certainly is!” (TB1-2: 72-74).

These remarks indicate that a corporately acquired craft brewery has a greater chance of retaining the craft designation if the “original people” remain with the brewery post-acquisition. However, the participant also indicates that the perception of the beer market will be that the acquired brewery is no longer craft following an acquisition, regardless of its staff composition. This suggests that corporate ownership de-legitimises (Suchman, 1995) a craft brewery from a consumer perspective. Reflecting on my horizon, I have often considered craft breweries to be ‘independent’, with independence being characterised by an absence of corporate ownership. I had not previously considered the retention of “original people” as a factor in determining which breweries I viewed as *craft*. Therefore, my horizon, developed as a beer consumer, was consistent with the participant’s (TB1-2) impression of how consumers perceive corporate acquisition of craft breweries. However, the original brewing team and founder will eventually leave the brewery, not necessarily for reasons associated with the acquisition. The

²⁸ *Panhead* was acquired by Lion Breweries on 1 July 2016.

craft moniker may therefore be unsustainable in the long term. The time in which the “original people” remain can be considered a “*honeymoon period*” (AB4:62) for the brewery. Speaking to this AB4 stated:

“I think there is a honeymoon period of a few years where they can retain some of that, what makes the brewery what it is, or the personality of it, but over time as people change within and it becomes more corporatised.” (AB4: 62-64).

The participant narrates a perspective congruent with the view that a craft brewery may continue as such post-acquisition. But only for a limited time. This is because as people within the brewery leave and are replaced it begins to reflect characteristics associated with corporate breweries. Again, from an industry perspective, this indicates that *craft* is in the domain of the brewery staff, rather than the brewery itself. The departure of these staff ushers in corporatisation. Participants note that they were able to detect the corporatisation of a craft brewery through the flavour profiles of beers brought to market. Speaking about how he distinguished between craft and corporate breweries, WB1 stated:

“For me, the only distinction is if and when the beer starts to change for the worse, and you can tell that it’s not just that they’ve hired a new brewer and they are learning, but they are dumbing this down a bit – they are making it cheaper.” (WB1: 82-85)

The participant allows his perception of beer quality to act as a barometer of when an acquired craft brewery is becoming corporatised. His characterisation of corporately brewed beer as ‘dumbed down’ and ‘cheaper’, is reflected in early craft brewing scholarship (Bastian et al., 1999), where it is posited that craft beer exists in a response to the ‘bland uniformity’ of corporately produced beer. The participant reveals his perception that craft beer is more sophisticated than its corporate counterpart. The participant alludes to this through his expectation that corporate acquisition may lead to a ‘dumbed down’ lesser quality beer. Meditating on my horizon, I sympathise with this perception. From a consumer perspective, I have consistently found craft beer to be more flavoursome than corporate beer. Based on its comparatively low purchase price, I have considered corporate beer to be ‘cheaper’. The participant narrates a view that the corporatisation of a craft brewery is reflected in production cost efficiencies which has a negative effect on the quality of beer. This means a corporately acquired craft brewery may retain the craft designation if it continues to produce sufficiently flavoursome beer, without a perceived drop in quality. However, corporatisation of the craft brewery may also manifest as a loss of control and diminished agility. AB3 illustrated:

“You become less nimble just by the fact that you’ve got more layers of bureaucracy to deal with – which they need because they [Corporate Brewery] can’t control anything if they don’t.” (AB3:88-90).

The participant reveals that he perceives craft breweries to have a greater level of agency and to be more agile than their corporately owned counterparts. Small business scholarship (Desouza & Awazu, 2006; Durst & Edvardsson, 2012) is supportive of this perception, arguing that smaller firms are more informal and responsive to changing conditions than larger firms. However, the participant continues, noting that

the loss of agency and agility is a worthwhile trade-off because instances of corporate acquisition in New Zealand have led to substantial commercial gains. Citing the example of *Panhead* AB3 stated:

“Panhead is a great example, one that has done incredibly well since the...I think Panhead Supercharger is the highest-selling 6-pack in the country.” (AB3:90-91)

The informant suggests that the potential loss of agency, agility, and by extension the ‘craft’ designation is unimportant when compared to the success resulting from the corporate acquisition. This foreshadows an interesting discussion regarding motivations for craft brewing, but for this participant, success is related to sales. No other research participant expressed this view. Instead, prevailing sentiment indicated that corporate acquisition is akin to ‘selling out’ (AB8:185). Craft breweries considered guilty of this, could not be considered *craft*.

Arguments of those who contended that the craft designation could not be sustained post-corporate acquisition were characterised by concern over foreign ownership. These participants were less concerned with matters of agency, flavour profiles, or staff retention than they were with notions of the brewery’s parentage²⁹. Specifically, craft breweries owned by an overseas entity, are not considered craft, AB6 explained:

“You need to be independently owned, so you’re not allowed to be owned by overseas people, so as much as that upsets the likes of Lion, that makes Mac’s, Emerson’s, and Panhead, out of the craft brewing.” (AB6: 18-20).

The participant’s stipulation that ownership by “overseas people” diminishes the craft moniker implies that if a craft brewery were to be acquired by a wholly New Zealand-owned corporation, it may still be considered *craft*. In other words, *independence* in this sense is characterised by local ownership in the national context. The participant’s use of the term “not allowed” suggests that the influence of corporate ownership delegitimises (Suchman, 1995) the craft brewery. There is also some conflict here regarding previous presented statements, where concerns of corporate ownership are centred on corporatisation and beer quality, rather than the national parentage of the corporation. Aversion to foreign ownership can be understood when consideration is given to the view that craft breweries have a moral responsibility to retain their profits in the national context. This is associated with a notion that craft breweries “...*just try to provide for the local community*” (NB1: 28-29), and that profits derived from that community should remain there. This is consistent with the USA definition of craft breweries as community-oriented (“What is a Craft Brewery,” 2021). However, there is hypocrisy here, as New Zealand craft breweries, including AB6, typically perform well in the Australian export market (Arthur, 2019). In other words, it is acceptable for New Zealand craft breweries to derive profits from a foreign context, but not disperse them to one. In part, this hypocrisy may be explained by an aversion to foreign ownership based on irrational

²⁹ As a reminder, New Zealand’s largest corporate breweries, Lion and Dominion Breweries are owned in Japan and The Netherlands, respectively.

personal beliefs, as remarks from AB7 lamentably suggested, when discussing the overseas corporate ownership of *Tuatara*:

“Every bottle of Tuatara that you buy produces a profit, there is a part of that profit that is feeding some fat cat up in Japan who is eating smoked eel and drinking whiskey.”
(AB7: 80-81).

For clarification, *Tuatara* is owned by Dominion Breweries, which is itself owned by Heineken, based in The Netherlands, not Japan. It is also worth noting that this is an isolated remark, in that I did not detect tones of casual racism as a rationalisation from any other participant, nor do I believe that it reflects a widely held view. However, it served as a prompt for me to consider the possibility that aversions to foreign ownership may also be based on controversial views that participants are uncomfortable sharing. In this case, I elected to probe the participant’s apparent affinity for local ownership using a recent example of a craft brewery that had concluded issuing shares³⁰. I asked if *independence* or the craft designation were compromised by introducing shareholders to the ownership model. Referring to the manager of the brewery in question, AB7 stated:

“Good on [managers name] for doing that, and he’s still very much independent.”
(AB7:106-107).

The introduction of shareholders is not the same as acquisition by a foreign corporation. However, the share scheme introduced by the brewery does not prohibit foreign investment. This is seemingly a non-issue for the participant, who seems to grant an exception to a fellow craft brewery manager whom he knows on a first-name basis. In sum, it suggests that the participant’s aversion to foreign ownership is not entirely grounded in wholesome notions of retaining profits nationally. More broadly, however, participants hold domestic ownership in high esteem as a craft brewery characteristic, because they perceive it to be an important consideration of consumers. Supporting this, AB4 remarked: *“People that are buying our beer they want to support local business”* (AB4:50-51)

The participant’s remark is a value judgement of his customers and represents his perception that craft beer consumers consider locality when purchasing beer. It is unlikely that ‘supporting local’ rationalises all craft beer consumer purchases. But the participant's perception of its importance influences his preference for craft breweries to be locally owned. This is better understood through the lens of legitimacy. The participant perceives local ownership to be a feature through which craft breweries are legitimised (Suchman, 1995) by the consumer (Randrianasolo & Arnold, 2020). Consumer expectations can be occasionally deviated from without consequence (Perrow, 1981), or any damage to legitimacy can be repaired over time (Kuruppu, Milne, & Tilt, 2019). But acquisition from an overseas corporation represents a permanent deviation from consumer expectation, and this can de-legitimise the brewery. In

³⁰ “[*Brewery name*] in Auckland set out to raise \$1.5 Million through share offerings to facilitate and ambitious expansion plan in 2020” (Donaldson, 2020a)

this sense, the consumer expectation being deviated from is not *independence* per se, but local ownership in the national context. The notion of ‘supporting local’ is incompatible with the concept of foreign ownership because the parentage of an acquired craft brewery is then situated in a non-local context. I proceed to discuss participant perceptions of craft brewery size criteria.

Size

As a reminder, in the USA setting craft brewery size is determined by a production ceiling of six-million barrels of beer per annum ("What is a Craft Brewery," 2021). In the Irish (McGrath & O’Toole, 2013) and Belgian (McGrath & O’Toole, 2018) settings, craft brewery size is determined by a ceiling of 80,000 hectolitres. Whereas in New Zealand, there is no specified production limit on which to identify craft breweries. I previously argued that if a size criteria were to be applied to craft breweries in New Zealand, it would need to take into contextual sensitivities, such as beer consumption and population size. Remarks from DB2 support this argument when comparing breweries from the USA and New Zealand settings:

“Sierra Nevada is considered a craft brewery in the US, and they are 2 or 3 times larger than Lion or DB in New Zealand from a production standpoint.” (DB2:32-34).

According to DB2, this means that craft breweries may only be considered small in their given context, where smallness is determined by the size of the brewery relative to corporate breweries in the same setting. To illustrate how this perspective challenges my horizon, I draw upon *Brewdog* once again. *Brewdog* is considerably larger than *The Wellpark Brewery* in Scotland. According to Barrie (2020), *Brewdog* has retained the craft designation in the view³¹ of most beer consumers, despite its relative size. Comparisons with corporation breweries to characterise craft brewery size were perhaps more important when craft brewing was in its infancy, though now it appears it is not universally valid, as some craft breweries now surpass corporation breweries in size. From the research participants, however, the prevailing characterisation of size differentials with corporations is based on production processes and techniques.

AB8 articulated a view that due to their small size and low production levels, more time and energy can be dedicated to improving each batch of craft beer:

“It’s because its small batches and you can put more hops in or spend more time on the small-batch itself.” (AB8:61-62).

Producing beer in “batches” implies that craft brewing is a bespoke and iterative process of production. Which is entirely distinct from the automation (Bastian et al., 1999) and continuous fermentation utilised in corporation breweries ("Morton Coutts — Continuous Fermentation System," 2021). As such, participants, such as DB1, described their brewing process as manual and intimate:

³¹ Despite its mainstream appeal, *Brewdog* has managed to market itself to beer consumers as craft and ‘edgy’ (Barrie, 2020).

“Everything I do here is very manual, it’s very hands-on...erm...you know you don’t have millions of dollars of equipment that’s very automated...every valve here is opened by hand, and everything has a more personal touch to it” (DB1:66-70).

The hands-on processes described by the participant are a necessity arising from the size and resource limitations of the craft brewery. Serendipitously, however, this enables the craft brewery to convey a romantic image to its consumers of care and dedication to the brewing process. Comparatively, in craft pottery (Bell & Vachhani, 2020) ‘hands-on’ work authenticates production. Craft beer consumers expect uniqueness from craft breweries (Bastian et al., 1999), and a ‘hands-on’ approach appeals to this expectation. However, retaining this image becomes more difficult as the craft brewery grows and begins to incrementally introduce automation, as NB1 illustrated:

“There’s always going to be bits of automation. Like we have a centrifuge³², it’s just this little thing that spins and we put the beer through it, erm...manufacturing just does that as you get bigger and scale up, you need more pumps, you need to be able to move things from one place to another, the distances become greater, the tanks get bigger, the lifting of everything you need gets bigger.” (NB1:53-57).

As the participant stated, the incorporation of automation, such as a centrifuge, is necessitated by a need to increase production levels and meet consumer demand. Although, the introduction of automated equipment detracts from the ‘hand-on’ image that may authentic the brewery. During the interview, this led to a question along the lines of ‘*how much automation is too much?*’:

“You get to a point where everything is automated, and then you’re just a manufacturer, and at that point, the line gets pretty grey.” (NB1:50-51)

The aversion to full automation detected in the response suggests that while craft brewers accept that automation is a necessity of growth, they do not wish to be seen to automate too much of the brewing process. Moving to a domain of ‘full automation’ means that the brewing process in a craft brewery begins to mirror that of the corporate brewery. This means that the craft brewery cannot as easily contrast itself with a corporation, and therefore cannot as easily derive legitimacy (Randrianasolo & Arnold, 2020) from craft beer consumers who expect authenticity. It could be argued that brewery automation happens at the backend of the brewery and may not be visible to the typical consumer. However, in 19 of the 21 breweries sampled in this research, the brewery was visibly accessible to customers. Speaking from my horizon, this is a typical craft brewery format, and knowledge of craft brewing procedures and equipment is common amongst craft beer drinkers. Nonetheless, the use of automation at any level casts doubts on a narrative that craft brewers are motivated by a passion for beer, more so than financial rewards.

³² According to a popular manufacturer, the use of a centrifuge in brewing increases production yields, shortens brewing time, enhances flavour, and ultimately increases profitability ("Five reasons to get a centrifuge for your brewery," 2022).

Passion

Passion is not a term often used to define a craft brewery in extant scholarship (Baginski & Bell, 2011; Bastian et al., 1999; Mastanjević et al., 2019). Participants in my research identified ‘passion’ as a rationalisation for their profession. Participants use this *passion* narrative to contrast themselves with corporation breweries – that they perceive to be principally interested in financial returns. This enables participants to identify themselves as the altruists of the beer world while casting corporations as the greedy financial end of the beer world. A series of remarks from WB1 encapsulated this view:

“Craft beer to me is done for different reasons – it’s usually done for the love of the beer.” (WB1: 49-50)

“Non-craft brewing is about making money, and beer being that medium for making money.” (WB1: 51-52)

The participant’s expression indicates that it was his passion for beer that brought him into the craft brewing profession. This is consistent with my horizon, where I have frequently perceived craft brewers to be deeply passionate about the work they do. However, the participant’s insights overlook the possibility of corporate brewers also feeling impassioned about the work they do. It would be naïve to accept the view that financial returns are of little interest to the craft brewer. As such, I probed WB1 for further justification of his view, which resulted in a softened stance:

“You can be passionate and make money. But the passion always comes first.” (WB1:63-64)

His remark suggests that profit generation is a serendipitous, almost incidental, outcome of craft brewing. As a craft beer consumer, this is an appealing romantic image. It suggests that this *passion* narrative reflects a mechanism for deriving legitimacy (Suchman, 1995) from the consumer. But it would be naïve to accept this narrative without question either. Remarks from NB1 reflected an alternate view that profitability is important because it sustains the passion for beer:

“Obviously everyone needs to be sustainable, otherwise you don’t have a business” (NB1:65-66).

In other words, the participant's view is that to be able to pursue a passion for beer, craft brewers are required to prioritise the financial stability of the brewery. This involves striking a balance between producing beer that the brewer is passionate about and financial responsibility. Essentially, beer can be brewed for reasons of *passion* to the extent that a financial position permits. This means that the craft brewery must also produce beer styles because they perform well in the market, even if the brewer is dispassionate about them. Hazy IPAs are a craft beer style that falls into this category.

The hazy IPA is an immensely popular beer style (Donaldson, 2019). Their popularity stems from an interesting appearance, smooth mouthfeel, and strong hop flavour profile (Bland, 2017). Interestingly, the distinct appearance means drinkers can easily show what they are drinking. Meaning there may also be a fashionable element to hazy IPA consumption. Interestingly, there is an aversion to brewing hazy beer

due to production timeframes and costs (Becker, 2017). Nine of the research participants indicated that they did not enjoy drinking or brewing hazy-style beers. However, this was never articulated during the interview phase. Instead, this information uniformly emerged post-interview as I shared a beer with the participant. Retaining this information for the less-formal post-interview chat indicates that participants were reluctant to have this knowledge on record but shared it under less formal circumstances. This implies it is important for craft brewers to be seen as having an affinity for the popular style, so that they may be associated with its popularity. Altogether, this suggests appealing to consumer demand is a crucial source of legitimacy (Suchman, 1995) for the craft brewery. This is compounded by the fact that all nine of these participants have at least one hazy-style beer in their core product range. AB5 acknowledged maintaining a hazy style in the core product line-up is essential for remaining relevant amongst craft beer consumers:

“If they were after a hazy and we didn’t have one, they wouldn’t be coming back.”
(AB5:230-231).

Instances where a craft brewer elects to brew a style they are dispassionate about reflect the prioritisation of financial return over *passion*. It diminishes the credibility of the *passion* narrative and unveils it as a tool for deriving legitimacy (Suchman, 1995). It also suggests conforming to fashionable beer styles is more important than simply producing what the craft brewer considers flavoursome and palatable.

Flavour

Craft breweries emerged in response to the failure of corporate breweries to produce a sufficiently flavoursome beer for certain corners of the market (Bastian et al., 1999). Therefore, the craft brewery's *raison d'être* is to supply flavoursome beer to consumers whose demands are unmet by the offerings of corporate breweries. Participants' identified a flavour-based distinction between craft and corporately brewed beer, as AB6 delineated:

“The whole craft movement started with a different flavour of beer, a stronger taste of beer, so it started off about flavour.” (AB6: 22-23).

The flavour-based distinction between corporate and craft beer falls short of denoting superiority, and instead focuses on the relative strength of craft beer. As a former employee of a corporate brewery, AB2 clarified this perspective:

“The quality [of corporately produced beer] is always there; it’s just the impact of the big flavour is not there quite often.” (AB2: 63-64)

Again, the participant's view is not that craft beer is necessarily superior to corporate beer but is distinguishable based on “big flavour”. This view challenges my horizon because I previously considered craft beer to be a superior tasting product to most corporate beer – even though flavour superiority is an entirely subjective experience. On reflection, bold flavour profiles of craft beer have informed that perception, rather than a poor experiences with corporate beer. AB2 continues to clarify that to achieve “big flavour” profiles, craft brewers are required to utilise large volumes of brewing ingredients,

particularly hops. Moreover, in the pursuit of a certain flavour profile, a craft brewery will disregard the cost of ingredients:

“We don’t really worry about the usage of all these ingredients.” (AB2:56)

The craft brewery can afford to disregard the cost of brewing ingredients because it can “...margin up their back end and charge more” (AB3: 69). In other words, craft beer consumers absorb the costs of the strong flavour profile. According to AB2, this model is unworkable for the corporate end of the beer market because “people who buy commercial beers, they don’t want to spend much money on beer.” (AB2:60-61). While corporate brewed beers are typically cheaper than craft beer, the respondent assumes that price is the main reason for corporate beer consumption. In particular, this view overlooks the fierce loyalty consumers have to certain beer brands (Notte, 2012). For instance, consumers become loyal to beer brands, when they are associated with sports teams or events (Levin, Beasley, & Gamble, 2004). Or, in my case, my loyalty to *Tennent’s* lager is linked to a sense of nationalism. Nevertheless, the participant believes it is in the commercial interests of the corporate brewery to limit ingredient expenditure because their customers demand a competitively priced product. Conversely, craft beer consumers demand a strongly flavoured beer (Bastian et al., 1999), and absorb the financial burden of the costs associated with it. This suggests that the flavour differentials between craft and corporate beer flavour are a result of servicing disparate beer markets. I continue by discussing community aspects of the craft brewery.

Community

In the USA, craft breweries are defined by an affinity for their local communities, through volunteerism, sponsorship, and philanthropy (“What is a Craft Brewery,” 2021). Based on participant responses, this sentiment does not broadly transcend the New Zealand craft brewing industry. USA-born DB2 was the only participant to express a view consistent with this aspect of the USA definition, he advised:

“One of my pushes to get Otago and Dunedin to like [brewery name], to own this patch, so it’s being supportive in the local community, supportive of local sports teams, at events, being a really good neighbour” (DB2: 192-194).

In contrast to the USA definition, the sense of community expressed by the participant is not concerned with altruism. It is instead a marketing approach. The participant clearly articulates the purpose of being a “good neighbour” is to gain a foothold in the local market. Or to “own the patch”, as he prefers. This is a discerning strategic move because the commercial success of craft breweries depends largely on local custom (Bastian et al., 1999). This suggests that ‘neighbourly’ actions of craft breweries are vehicles for commercial success, more so than appreciation for the local community. Similarly, environmental actions by craft breweries can also be explained by commercial motives.

Environmentalism

Caring for the environment is not a defining characteristic of craft breweries detected in extant scholarship (“What is a Craft Brewery,” 2021). Even so, it is not uncommon for craft breweries to advertise their

environmental credentials. For example, *Brewdog* frequently advertises its ‘carbon negative³³’ status (Figueira, 2020). Advertising environmental credentials to consumers indicates environmental actions are a mechanism for deriving legitimacy (Suchman, 1995). An anecdote from AB1 regarding the use of plastic bottles supports this idea:

“We had people come into the [name of brewery bar] saying they didn’t like the plastic bottles that are common in New Zealand. And we had a few people, so we were like ‘let’s get rid of them’, and now we have glass ones that you can buy.” (AB1:91-93)

From the participant’s account, the decision to transition to glass bottles was not driven by concern for the environment. Instead, the action was engendered by negative customer feedback regarding the plastic bottles. This intimates that the participant is only an environmentalist to the extent his customers expect him to be. This in turn supports the view that environmentalism is a means of deriving consumer legitimacy (Randrianasolo & Arnold, 2020). Environmental concern also stems from concerns about the longevity and sustainability of the craft brewery. AB4 stated the following when discussing water recycling initiatives at his brewery:

“It’s just kind of our responsibility to not waste resources, and look at Auckland at the moment, water is you know, water is the new oil.” (AB4:340-341).

Superficially, concern for water conservation reflects a contemporaneous environmental issue. However, continued freshwater access is crucial for craft brewing³⁴. Indicating that the participant’s environmental solicitude veils a concern for the continued operation of his brewery. The participant’s comparison between water and oil is particularly telling in this regard. That said, not all participants reflected environmentalism in this way, with a notable exception being found in Raglan³⁵.

Participant WB4-1 demonstrated extensive knowledge and understanding of environmental issues when he stated:

“We’re trying to build initiatives in here that re-using glass, you know refillable growlers – which has been around forever, or actually getting creates of beer where people bring the bottles back so that you can refill the bottles. Rather than recycling the bottle, because it’s already in a perfect format for that, you basic stuff that, instead of just consuming more resource on top of an already high energy process – how can we find ways to actually reduce that, and keep our distributional footprint close, and use the brewery as a vehicle for getting people to think about the waste that is generated.” (WB4-1:109-116).

³³ *Brewdog* removes twice as much carbon from the atmosphere than it produces.

³⁴ In craft brewing, brewing one pint of beer requires seven pints of freshwater (Agnew, 2016).

³⁵ Raglan is a small township in the North-Western Waikato that is widely lauded for its efforts in recycling, water management, and land conservation (Piddock, 2018).

The participant reveals that his environmental pursuits are not entirely selfless. Specifically, the re-use of materials such as bottles and *growlers* likely weigh positively on the brewery's profitability. However, the knowledge he demonstrates, and the fervour with which he delivered the above remarks suggest that his environmental concerns are authentic. In the case of WB4, it seems likely that environmentalism is also an action for deriving legitimacy (Suchman, 1995). Pointedly, deriving legitimacy from the local community of Raglan which is recognised for its environmental philosophies (Pidcock, 2018). Given that craft breweries depend on local custom (Bastian et al., 1999), deriving legitimacy from the local community is a proxy for consumer legitimacy (Randrianasolo & Arnold, 2020). Next, I discuss the notion of craft breweries as a community of practice.

Community of Practice

In Chapter Two I alluded to the idea that craft breweries represent a community of practice. A series of participant remarks support this notion. As a reminder, a community of practice is an informal group of people with shared experiences, passion, and common goals (Gertler, 2003). Communities of practice are also characterised by frequent interactions oriented toward achieving their common goals (Wenger et al., 2002; Wenger & Snyder, 2000). Supporting this, participants reported friendly interactions with other craft brewers centred around supporting one another. WB1 for example stated:

"[WB2], who have just started up out at Matangi, I've did a lot of, [Brewery Manager's Name], has been in here every day since they opened just about saying: 'How do you do this?' What are your numbers?" (WB1: 382-383).

"But at the same time I could ring them up and say that I wanted to do a really small batch of something, can I do that on your system. I'd trust [Brewer Manager's Name], he's turning into a really good brewer. Can you brew this for me, and put my name on it?" (WB1:388-391).

The participant reports having a reciprocal relationship with WB2 where both parties are comfortable supporting one another. They interact and cooperate toward achieving their goals. In other words, their relationship resembles a community of practice. In support of the participant's account, WB2 reported an instance of reaching out to WB1 for assistance:

"We had a beer stop fermenting...so I was like shit, better call [WB1]. You're better off to just ask 'cos a lot of the problems you come across – someone else has been there." (WB2: 205-207).

This dynamic is not confined to this pairing of participants, nor the Northern Waikato geography. TB4 reported similar interactions with TB2:

"I asked [TB2] for a piece of advice once about how to put a piece of equipment in, and that guys on his 7th brewery now or something, he knows bloody everything, and he was like yeah [TB4] what do you need, how can I help." (TB4:155-157).

Again, the account reflects a pairing of brewers comfortable with requesting and providing support to one another. This suggests that craft brewers are inclined to assist one another in achieving their goals.

Altogether this promotes the notion that craft brewers in New Zealand form a community of practice (Gertler, 2003). I draw attention to this because it helps to explain, in chapters five and six, why craft breweries share knowledge and collaborate. I continue by discussing innovation as a defining characteristic of craft breweries.

Innovation

For clarity, this section discusses craft brewer perspectives regarding if and how craft breweries are innovative. Definitions of innovation follow this discussion. Being innovative is a virtue of craft breweries defined in the USA context ("What is a Craft Brewery," 2021), and associative terms such as *creativity* and *differentiation* are used to describe craft breweries in other settings (Cunningham & Barclay, 2020; Alonso et al., 2020). Consistently, in the New Zealand context, participants' frequently cited that "*being innovative is hugely important*" (DB2: 82-83). Innovation is important because craft beer consumers expect new and interesting beer products (Bastian et al., 1999; Mastanjević et al., 2019). Drawing on my horizon, I have sympathy with this argument, as I have come to expect new products from the industry regularly. AB1 alluded to the importance of having *innovation* recognised by consumers:

"We want to be known for innovation. And so, actually, we're doing a lot of work around our strategy, and also ermm, our culture within the business, and innovation is number one." (AB1:66-68)

A desire to be "known" for innovation suggests the participant acknowledges consumers' expectations of innovation. By creating an aura of innovation, the craft brewery can position itself as the antithesis of uniformity that characterised corporate beer (Bastian et al., 1999), and in turn derive legitimacy from the craft beer consumer (Suchman, 1995). However, creating this aura of innovation requires the craft brewery to continually create new products, as DB1 articulated:

"The customer wants to try new things, they...some people go back to the same beer every time, but predominantly I would say that the market is keen for newer and innovative styles." (DB1: 125-127).

The participant's perception that consumers continually demand innovative products is supported by craft brewing history. Bastian et al. (1999) explain that craft brewing exists because a contingent of beer consumers demanded novel beer styles. This demand for novelty has transcended to the present day. Participants reflect a belief that failure to keep pace with this demand will lead to irrelevance and the demise of the brewery, as TB2 explained:

"Consumers want new...that's why we're always adding new beers to the line-up, and trying to keep customers excited and interested, and if we lose their interest then we're done." (TB2: 98-100).

Keeping pace with consumer demands for innovation requires the craft brewery to quickly respond to the market. As such, participants characterise their innovation as agility. As TB1-3 explained, this involves quickly adapting to changing market conditions:

“Being able to be agile and being able to say we feel like making this for summer because we can, and we have this small team to be able to do it you know, that agility to be to be locked and loaded.... we can say oh we want to do a different hazy we can scratch that one off the list.” (TB1-3: 106-111)

Agility in this sense is believed to be unavailable to corporate breweries because of their rigid structures and processes, as AB4 stated when comparing craft with corporate breweries:

“We don’t have to go through all these other processes or have discussion groups and all that sort of stuff like we do here, we just go: “oh should we make this beer?”, “oh, that’s a good idea”. “Can we do some packaging?” “yep”, “let’s do it next week”. You know we don’t have to go through this, because it’s easy, and we’re just smaller scale, and it’s just easier to adapt.” (AB4:92-96)

The participant’s remarks reflect a perception that by virtue of being smaller, the craft brewery is more agile than its corporate counterpart. His view is not compounded by experience in the domain of corporate brewing. But scholarship supports the notion that small businesses are less formal and more responsive than larger ones (Desouza & Awazu, 2006; Durst & Edvardsson, 2012). Nonetheless, characterising craft brewery innovation as ‘agility’ promotes understanding of perspectives (AB3 and AB5) that reject the notion of craft breweries as innovative.

Participants AB3 and AB5 did not recognise a need for their breweries to be innovative. Instead, they were content with quickly producing products that resemble those already available on the market. In other words, these participants do not view imitation of existing products to be innovative. AB3 summarised this perspective:

“I think you’ve got to be a fast follower. I don’t think you need to be innovative; I think you need to be able to copy people quickly. I think innovative is good, but if you can do something three months down the track from someone else, then what is the difference?” (AB3:111-113).

Imitation is the process by which innovations are diffused and altered in a social system (De Tarde, 1903), and imitated innovations are frequently considered *innovative* in extant scholarship (Van de Ven, 1986; West & Farr, 1990). The participant does not adhere to this view, but he reveals that pursuance of an imitative approach to new products requires agility and responsiveness to the market. His brewery can therefore be considered innovative, in the same way as TB1-3 described.

Reflecting on Participant Definitions of a Craft Brewery

Comparatively, several components of craft brewery definitions provided by interview participants are present in the extant definitions, discussed in Chapter Two. Contrast emerges from notions that craft breweries are defined by passion and environmentalism. These two defining characteristics raise an interesting question of strategic positioning (Porter, 1998b), in which it is unclear if passion and environmentalism reflect genuinely held beliefs or a mechanism for gaining a strategic foothold in the beer market.

Craft Brewer Perspectives of Innovation

In this section, I discuss how participants define *innovation*. Meaning was derived through a line of questioning that began with ‘*can you tell me what innovation means to you?*’. Five themes emerged from my interpretation of participant responses: new product innovation; new process innovation; problem-solving innovation; marketing innovation; and market structure innovation. A summary of each theme is denoted in Table 22:

Table 22 - Innovation Definition Themes

Theme	Meaning
New Product Innovation	New beer products and styles represent a form of innovation. However, there is a disparity in perspectives regarding how different a product must be before it can be considered ‘new’.
New Process Innovation	New production processes and methods represent innovation. If the new process does not yield a net benefit to the brewery, it is not considered innovative.
Problem-Solving Innovation	Innovation is viewed through the lens of solving problems. Innovation is the mechanism for solving a problem. If a problem is unsolved, no innovation has taken place.
Marketing Innovation	Novel marketing techniques represent innovation. The purpose of these innovations is to communicate legitimacy to the consumer and to grow market share.
Market Structure Innovation	New market compositions are considered a form of innovation. Innovation in this space manifests as close forms of collaboration between craft breweries in order to compete with corporation breweries.

New Product Innovation

Defining *innovation* by new products is consistent with traditional innovation literature (Schumpeter, 1934, 1942; Thompson, 1965). The tendency of participants’ to cite new products when defining innovation is therefore unsurprising. However, competing perspectives regarding what can be considered a ‘new’ product were evident in their remarks. For instance, participants, such as AB7, expressed a concern that their new beers are not innovative because they are inspired by beers that already exist in different contexts:

“It means doing something that someone else hasn’t done...Man, brewing, it’s just putting beer out there that no-one else has done before, which probably isn’t even that innovative, because you have probably seen it in some magazine, or online, or some other country.” (AB7:123-133).

The participant suggests if new beers are not entirely new across all settings, they may not be considered innovative. In other words, drawing inspiration from other contexts to produce a new beer does not represent innovation. This contradicts extant views that newness is a matter of perception (Van de Ven, 1986) or subjective to the innovating firm (West & Farr, 1990). Alternative views to AB7 suggested craft brewery innovation involves “*coming up with new things not seen in the beer world*” (AB1:70), and “*...not trying to copy too much*” (TB4:73). Interestingly, this leaves the door open to drawing inspiration from other industry contexts. Specifically, imitating an innovation from a non-brewing industry into craft brewing can constitute innovation, as AB1 explained in his innovation definition:

“Borrowing from other industries or people that are using packaging formats or materials or processes or ingredients, and then applying them to beer.” (AB1:71-72)

The participant recognises that “borrowing” from a disparate industry context represents imitation of an existing innovation. But repurposing the innovation to the craft brewery context is innovative. This is consistent with scholarship (Van de Ven, 1986; West & Farr, 1990) that argues innovations can be subjectively and perceptually new. In accord, AB7 contradicted his earlier remarks and suggests that drawing inspiration from a disparate geographic context may also represent innovation. When asked if imitating an innovation from the USA context would be innovative, he stated:

“I would consider that to be innovative within the geography that you’re in.” (AB7:137)

The participant’s self-contradiction indicates that he did not fully consider his first response, or during our discourse recalled certain innovations inspired by other geographic settings. Nevertheless, his subsequent remarks indicate that new product innovation should represent “*something new for the [New Zealand] industry*” (AB3:422). This supports the notion that ‘new’ is subjective (West & Farr, 1990) to the industry. This shifts the discussion to understanding what ‘new’ means in the New Zealand craft brewing industry.

To be considered innovative, a new beer in the New Zealand craft brewing industry must represent at least a slight variance from an existing product, as NB1 argued:

“I would say that a slight tweak is innovative, because if you’re not tweaking anything, or if you’re not putting your own twist on something then you’re just doing the same thing over and over again.” (NB1:86-88).

The “slight tweak” the participant described represents a form of adaptive imitation, where the craft brewery reproduces a new product to its specifications. This is reflective of De Tarde’s (1903) theory of innovation diffusion, where innovations are diffused and created through a process of imitation and adaptation. It is not clear what constitutes a “slight tweak”. For example, AB7 struggled to determine if his *Black Forest Tart Milkshake IPA* was innovative. While he had not “*seen that before*” (AB7:142), it may not have been innovative because “*the concept of the Milkshake IPA was around before.*” (AB7:142-143).

Imprecision concerning the degree of adaptation required for a product to be considered new and innovative can explain why other participants are of the view that “*there’s a limited amount of things that have never been done before*” (AB5:51-52) and “*...it’s really hard to be original*” (DB1:185). It also indicates that relying on the adjective ‘new’ to define innovation (Bledow et al., 2009; Kahn, 2013; Quintane et al., 2011) is limited by inconsistencies in what ‘new’ means. Nonetheless, creating new products and making alterations to existing ones speak the craft brewery requirement to be viewed as innovative by craft beer consumers. This can also be achieved by distinct product packaging. I discuss this below as a factor of market innovation. By contrast, process-based innovations are less consumer-centric.

Process Innovation

The implementation of new production processes and methods is comfortably accommodated in extant definitions of innovation (Kahn, 2013; Schumpeter, 1942; Thompson, 1965; West & Farr, 1990). The emergence of new processes when discussing *innovation* was therefore unsurprising. GB1 illustrated what process innovation in a craft brewery looks like:

“Looking at ways of using products in a different way, using new ingredients in various ways, and maybe reusing various ingredients in different ways” (GB1:102-104).

Simply, the participant indicates that process innovations involve brewing beer in different ways. But it is unclear what these processes are different from. Remarks from AB7 promote the idea that process innovations represent differentials from brewery to brewery:

“Innovation happens on a ground level in the brewing industry where you are tweaking your processes and doing things that no one else is doing because it works for you and your brewery, and maybe it makes your beer a little bit better.” (AB7:144-146).

In this sense, all process innovations can be considered innovative because they are designed to the specifics of the brewery that implements them. This means that no two processes are identical and are therefore considered innovative. That said, the emergent qualifier of what constitutes a process innovation is not based on the uniqueness of the process, but on the process's ability to engender positive outcomes for the brewery. AB7 alluded to this when he commented that a process innovation may make “your beer a little better”. However, participant AB3 more eloquently argued this perspective:

“Something new that is shit is not necessarily innovation.” (AB3:419).

The participant clearly articulates that innovations must be associated with positive outcomes if they are to be considered as such. This differs from established innovation scholarship (Schumpeter, 1934, 1942; Thompson, 1965) which considers innovation as an amoral concept, unlinked with either positive or negative outcomes. The participant’s perspective appeals to a line of thought that argues if an “*innovation causes more harm than good*” (Mars, 2013, p. 4) it cannot be considered innovative. This indicates that

process innovations are defined by the outcomes they produce. DB2 highlighted this when discussing the use of a *mash press*³⁶ innovation at his brewery:

“It’s going to save you \$10K a year, and you know you’re going to be able to play in spaces that others cannot, and you’ll get that creative edge in your product.” (DB2: 133-135).

This outcome-based view of innovation clashes with traditional innovation thinking (Schumpeter, 1934, 1942; Thompson, 1965). Although, it is rational from an industry perspective to focus on positive outcomes since the purpose of introducing an innovation is to benefit the firm (West & Farr, 1990). In support of this, WB1 cited an extreme example:

“I could put concrete in an IPA, but why? Sure, it might be innovative but what’s the point? Purpose I think is the important part.” (WB1:227-228)

In the participant's terms, “purpose” defines process innovations. Again, supporting the idea that the introduction of a process innovation must be directed at a positive outcome (West & Farr, 1990). However, it may not be clear if and when the purpose of the innovation has been achieved (Von Hippel & Von Krogh, 2016), or if the cost of implementing the innovation represents a net benefit to the brewery. This means that craft brewers may not be able to accurately assess whether a new process has been innovative or not. This issue is similarly reflected in the problem-solving perspective of innovation.

Problem-Solving Innovation

Only one participant (AB4) viewed innovation through the problem-solving lens. This appears to be a result of the participant having to overcome several problems associated with his brewery catching fire:

“We had a big fire here and we got shut down for a year, so that challenge was, how do we keep our business operating you know, so we had to adapt quite quickly” (AB4:116-118).

Viewing innovation through the problem-solving lens is accounted for in extant scholarship, where it is argued that problems represent opportunities for innovation (Nickerson & Zenger, 2004). Problems represent innovation opportunities because in problem-solving, firms create and apply new knowledge (Nickerson et al., 2012). Aligning with this perspective, AB4 stated when asked about innovation in his brewery:

³⁶ *“We have one of the only mash-presses in the Southern Hemisphere. At one point it was the only mash-press, so what that means for us is that we use less water than most other breweries, and where most breweries get a 75% extraction rate, we get a 98% extraction rate. So, we’re getting a lot more fermentable sugar out of the grain, we’re using less grain, so we’re able work with grains that others can’t, like rye for example, and we can actually produce beers from these things, so that gives us an innovative edge over most other brewers, and I think almost everyone in NZ.”* (DB2: 117-123).

“We talk about challenges, and how we overcome them, so for any of those challenges we go, how are we going to make good of this?” (AB4:109-110)

Conceptualising problems, or “challenges” as the participant prefers, with opportunism (Nickerson & Zenger, 2004) means they represent junctures where the brewery can “...make more profit”; “...utilise resources to be more efficient”; and “...change things to make the day more enjoyable” (AB4: 111-114). In other words, innovation as a consequence of problem-solving is associated with positive outcomes (Mars, 2013). A positive outcome may be assessed on whether or not a problem has been solved. But this does not consider the costs associated with solving a problem.

The positive outcomes of problem-solving are diminished if the costs associated with it are greater than the realised benefits. The identification of problems alone is frequently challenging and costly (Von Hippel & Von Krogh, 2016), and in the pursuit of solving one problem, another may be neglected. This means imposing a qualifier of positive outcomes on problem-solving innovation is flawed unless the brewery conducts a cost-benefit analysis of identifying and solving the problem. I continue by discussing marketing innovation.

Marketing Innovation

Based on participant accounts, marketing innovation serves two purposes in a craft brewery. (1) It is a mechanism for communicating the brewery’s authenticity to the consumer. (2) It is a vehicle for competing with other breweries. WB3 recognised that craft beer consumers expect innovation in the delivery of the product:

“Innovation is yes product, but also package and it’s also customer experience.” (WB3:47-48).

Marketing innovation in a craft brewery is not reflected in the liquid product, but instead in the ways that the product is presented to the consumer and their experiences while consuming it. Consumer experiences at each craft brewery are intended to be unique and irreplicable. AB1 explained:

“We even think about the experience of when people come to the [brewery bar name], we think about innovation and how we can give them an experience they wouldn’t get somewhere else.” (AB1: 81-83).

The participant alludes to the significance of providing the consumer with a unique experience when visiting his brewery. Recalling that craft beer consumers expect novelty and innovation (Bastian et al., 1999), efforts to individualise the consumer experience reflect a strategy of authentication. However, some examples of individualising the consumer experience are not proprietary, WB3 provided two:

“We have our Squealer³⁷ –which you know, no one had ever done before” (WB3:48-49).

³⁷ A 1 litre refillable glass beer container.

“We’ve got tanks³⁸ in all of our bars which no one in NZ has done for 30 years – so that’s what innovation is.” (WB3:49-50).

Core elements of a unique consumer experience, such as *squealers* and tanks, can be easily transplanted from one craft brewery to another. This means that consumer experiences, intended to be unique, can be fundamentally similar. Countering this requires the craft brewery to have consumers perceive (Van de Ven, 1986) their experience to be truly unique. An example of how this is achieved is through the presentation of the brewery itself, as a photograph taken at TB3 depicts:

Figure 10 - TB3 brewery photograph



Fermentation tanks are situated at the back of the brewery but remain in full view of customers. The fermentation tanks have been embellished with graffiti, presenting the name of the brewery and the names of its beers. TB3 explained that the graffiti was painted by a local woman who is nationally famed for her calligraphy skills. I did not observe this decorative practice at any other brewery I visited for this research, nor any other brewery I have visited for my own libations. From a consumer perspective, this component of the experience is unique. The exhibited art style could be replicated in another brewery, but the identity within is germane to TB3’s brewery.

Communicating the brewery’s identity in the presented art style distinguishes TB3’s brewery from others. This satisfies the craft beer consumers’ demand for non-uniformity (Bastian et al., 1999). By extension, this permits the brewery to derive legitimacy (Suchman, 1995) from those consumers. The presentation of craft brewery identity in packaging design achieves a similar goal.

Craft beer packages and labels are characterised by *“shiny, glossy labels and very colourful packaging boxes”* (AB2: 85). Vibrant beer packaging emblazoned with creative designs is a mechanism for communicating craft brewery identity to consumers. But they are also an effort to capture the consumers’

³⁸ Container for draught beer that holds the equivalent of approximately 5 kegs.

attention in a retail setting. Thereby this kind of marketing innovation is intended to communicate authenticity and to compete with other breweries. However, when all craft breweries seek to communicate to consumers via a medium of colourful and glossy packaging, craft beer from different breweries begins to look alike. The images in Figure 11 compare *Garage Project* beer, *Pernicious Weed* (left) with *Kererū Brewing's Untrapped Potential* (right).

Figure 11 - Craft Beer Can Art



Being innovative in this environment, therefore, requires a departure from the colourful and glossy craft beer packaging designs. WB1 cites an example of this when discussing innovations in marketing:

“A new way of packaging product, or a new way to design labels, like when Garage Project came out with ‘Beer’, you know advertising innovation, right?” (WB1: 237-239)

The product the participant cites (shown below in Figure 12) exemplifies the antithesis of typical craft beer packaging. Through its minimalistic design, the beer can visually distance itself from competitors in a retail setting, while also communicating the brewery’s *innovative* identity to the consumer. Thereby, it serves to derive legitimacy (Suchman, 1995) from craft beer consumers.

Figure 12 - Garage Project 'Beer'



As I noted, marketing innovations are, in part, motivated by competition. Market structure innovation on the other hand is principally concerned with cooperation.

Market Structure Innovation

New systems and market structures are accounted for in traditional innovation literature (Schumpeter, 1934, 1942). The emergence of this theme is therefore not unprecedented. Participants who raised this theme expressed interest in altering dimensions of performance (Drucker, 1985) in the current beer market, towards a more collaborative framework. Specifically, this involves craft breweries collectivising to compete more effectively with corporate breweries.

Collaboration in the production of new beers is common (Alonso et al., 2018; Alonso & Bressan, 2017). Regardless, collaboration brewing appears superficial when compared to the level of collaboration proposed by WB2:

“Collectively we could, it’ll take a strategic approach, so if, if you put together all the volume of all the small players and some distribution channels and some distribution channels, and some efficiencies and a distributor that sat over the top of them, who acted in the best interests of those companies, in a far way then 100% we could get in there” (WB2: 398-401).

The participant’s proposition is that craft breweries should seek to collaborate across various dimensions, such as distribution, to affirm their place in the market and compete with corporate breweries. Competing with corporations is a mechanism for growing the craft share of the beer market. This perspective conflicts with earlier remarks regarding craft brewer passion. It indicates craft brewers are concerned with market

share and the profitability of their breweries. Underpinning this proposed collaborative framework is a sense of unity between craft brewers in opposition to corporate breweries, as NB2 advised:

“I see it as the whole craft beer industry being competitive against the big boys.”
(NB2:168-169).

The participant indicates craft brewery collaboration, beyond collaboration beers, is substantiated by a common aim to remain competitive against corporations, the “big boys”. Such insight reflects the notion that craft breweries are a community of practice (Gertler, 2003). Providing an example of this kind of collaboration, AB7 stated craft breweries in the USA, UK, and Australia have successfully “*petitioned the government to get an excise tax break*” (AB7: 372-373). However, according to AB7, this has been comparatively absent in the New Zealand context:

“I think that we, the brewer’s guild in NZ, or whatever organisation holds us together are missing a huge opportunity to be innovative in how we present ourselves to the market. I don’t know what the answer to that is, but I think we’re missing something. And I think that the innovation maybe just that we work collectively to make that happen.” (AB7: 366-369).

The limited degree of collaboration, above collaboration beers, the participant highlights indicates that working together, beyond collaboration brewing, is not a priority for craft brewers in New Zealand. Failure to engage in in-depth collaboration is interesting, given that craft breweries have common goals and a common adversary in corporate breweries. This suggests that these commonalities alone are insufficient for substantiating this kind of collaborative market structure in New Zealand. I explore this idea at length in chapters five and six.

Chapter Summary

Exploring industry definitions of *craft brewery* and *innovation* has illustrated the context of this thesis and provided clarity regarding the meaning of these terms in a craft brewing setting. I argued in this chapter that craft breweries derive legitimacy from craft beer consumers by communicating certain values, such as environmentalism and innovativeness. Additional contributions are made in this chapter by presenting definitions of *craft brewery* in the New Zealand context. Just as I utilised the USA definition (“What is a Craft Brewery,” 2021) as a starting point in this thesis, the New Zealand definition presented here may be re-appropriated for future research in other geographic settings. It may also find utility in research concerned with other craft industries (Bell & Vachhani, 2020). Similarly, the industry perspectives of *innovation* provided here may be used in future research in the domain of *craft* industries. The contextual understanding here supports the discussion of emergent themes in chapters five and six. As such, I refer to this chapter in upcoming discussions.

Chapter Five: Proximity and Knowledge-Sharing

“You can’t be a real country unless you have a beer and an airline – it helps if you have some kind of football team or some nuclear weapons, but at the very least you need a beer.”
– Frank Zappa

Introduction

In this chapter, I explore the roles of proximity dimensions on inter-firm knowledge-sharing between New Zealand craft breweries. I examine the view that “...*geographical proximity is neither a necessary nor a sufficient condition for learning to take place*” (Boschma, 2005, p. 61). I also seek to understand how geographic proximity influences, and is influenced by, other dimensions of proximity. This chapter responds to the following two research questions:

1: What are the roles of proximity in knowledge-sharing between New Zealand’s craft breweries?

1a. How do other dimensions of proximity relate to geographic proximity in the New Zealand Craft Brewing Industry?

Answering these questions responds to appeals from extant scholarship for a ‘dynamic’ approach to understanding the roles of proximity dimensions in knowledge-sharing (Balland et al., 2015; Balland et al., 2022); for understanding the inter-relations between proximity dimensions (Broekel & Boschma, 2017); for qualitative work to deepen our understanding of the motives for interaction (Balland et al., 2013); and a need to understand the obstructions to knowledge diffusion between geographically proximate firms (Morone et al., 2019). Furthermore, by isolating the role of geographic proximity, responding to these questions promotes understanding of how geographic proximity influences innovation diffusion (Lengyel et al., 2020).

I structure this chapter by following the proximity dimensions identified by Boschma (2005) and Rallet and Torre (1999). I navigate the roles of each proximity dimension and discuss how they relate to the geographic dimensions of proximity. Throughout this delineation, I identify and discuss two novel proximity dimensions that emerged from the data. These are triadic proximity and adversarial proximity. A brief overview of each proximity is shown in Table 23:

Table 23 - Eight Proximity Dimensions

Proximity Dimension	Meaning
Geographic Proximity (Boschma, 2005)	A plain of physical proximity between actors based on the permanent location of their operation. In this case, where the physical brewery is located.
Temporary Geographic Proximity (Rallet & Torre, 1999)	A temporal plain of physical proximity is created when actors travel to a mutual location.
Social Proximity (Boschma, 2005)	Where actors are bound by trust-based relationships, such as friendships and kinships.
Institutional Proximity (Boschma, 2005)	There are two dimensions of institutional proximity; the first relates to the macro-institutional environment in which actors operate – including the legislative framework and national cultures. Micro-institutional proximity relates to the convergence of personally held values and expected norms between actors.
Cognitive Proximity (Boschma, 2005)	Where actors are similar in their knowledge bases, so that they may recognise, and exploit knowledge shared with one another.
Organisational Proximity (Boschma, 2005)	Where actors are bound by the practices, processes, and conditions of belonging to a professional community – such as craft brewing.
Triadic Proximity (Original Contribution)	Where actors are not directly socially proximate but have social proximity with a mutual third party. The third-party may encourage the ignition of social proximity between those actors.
Adversarial Proximity (Original Contribution)	Where actors share a common rival in a market. In brewing, craft breweries widely recognise corporate breweries as a common adversary. Sharing a common adversary encourages cooperation.

Geographic Proximity

Geography of innovation scholarship (Feldman, 1994; Feldman & Kogler, 2010) argues that because innovation spatially clusters, geographic proximity is central to inter-firm knowledge-sharing. Whereas proximity scholarship (Balland et al., 2022; Boschma, 2005) argues that geographic proximity is insufficient and unnecessary for inter-firm knowledge-sharing. Yet, proximity scholarship acknowledges that innovation and knowledge may tend to physically cluster because “*short distances literally bring people together*” (Boschma, 2005, p. 69). This is relevant because ‘bringing people together’ creates opportunities for knowledge-sharing, namely tacit knowledge-sharing (Audetsch & Fledman, 1996; Feldman, 1994; Feldman & Kogler, 2010). This suggests that the convenience of geographic proximity, characterised by physical closeness, encourages interaction and knowledge-sharing between craft breweries in New Zealand. My results support this view, finding that geographically proximate craft brewers tend to interact in person.

For example, when I asked AB3 how he obtained knowledge of the craft brewing industry, he explained that he and his brewmaster would visit other local breweries and talk to brewers:

“Just by going around, going to breweries, and seeing what people are doing.”

“Talk to other brewers, go to the brewery and have a beer with them.”

“Me and [brewmaster] would quite often go out and just go and have beers.” (AB3:131-136)

The participant notes two forms of acquiring knowledge when he frequents a craft brewery. The first is observational: the participant visits the brewery as a customer, this enables him to observe the operation of the brewery and acquire knowledge on that basis. This form of knowledge acquisition does not require any interaction between the participant and people at the brewery. This suggests that geographic proximity alone can facilitate forms of observational knowledge-sharing. However, a degree of cognitive proximity is required for the participant to recognise and absorb the knowledge available via observation (Boschma, 2005). In other words, geographic proximity creates an opportunity for knowledge acquisition, but cognitive proximity is required to capitalise on that knowledge. The second form of knowledge acquisition involves interacting with a brewer when visiting a craft brewery.

Interacting with a craft brewer while visiting a brewery facilitates in-person discourse, which presents opportunities for the exchange of tacit knowledge (Nonaka, 1991). This indicates that interaction while at the brewery can present more substantial opportunities for knowledge-sharing than the observational method alone. However, accessing knowledge in this way may require a degree of social proximity between the participant and the brewer. This is because social proximity represents trust (Boschma, 2005), and trust is a crucial enabler of knowledge-sharing, especially in a small business environment (Curado & Vieira, 2019), meaning that this modality of knowledge acquisition requires a pairing of geographic and social proximity. But cognitive proximity is also required for the participant to comprehend (Balland et al., 2022) the knowledge shared with him. This supports the view that geographic proximity alone is insufficient for inter-firm knowledge-sharing (Boschma, 2005). Social proximity was detected in other accounts of interaction between geographically proximate craft breweries.

Participants noted that they interacted with geographically proximate brewers when they were in urgent need of brewing ingredients. AB2 explained that when he unexpectedly runs out of ingredients, he would contact a geographically proximate brewer first because:

“When I go to ask, it’s when I’m in urgency to look for those parts. I can’t just ask someone in Dunedin to ship it out.” (AB2: 126-127)

The “urgency” with which ingredients are sought means that it makes logistical sense for the participant to contact breweries in close geographic proximity. Requesting brewing ingredients from a geographically proximate brewery engenders an in-person interaction. The stated purpose of this interaction is not to exchange knowledge. Regardless, the interaction that occurs can facilitate tacit knowledge exchange via

in-person interfacing (Nonaka, 1991). However, in addition to logistics, the participant went on to explain that he contacts fellow brewers whom he has an existing social relationship with:

“I’ve always worked in Auckland, and I know brewers in Auckland well, so yeah that’s one reason.” (AB2: 124-125).

These remarks indicate that geographic proximity alone is limited in its ability to enable in-person interactions (Boschma, 2005). Instead, the participant’s preference is to contact a geographically proximate brewer with whom he is also socially proximate. The participant also alludes to the notion that his geographic location, in Auckland, has led to the development of social proximity with other Auckland brewers. This supports the notion that geographic proximity is ‘most likely’ an enabler of other proximity dimensions (Balland et al., 2022). Accounts of social proximity being developed between geographically proximate craft brewers are evident in other regions.

In Northern Waikato for example, WB2 reflects on interactions between himself and WB4. He explained that WB4 has routinely interacted with and assisted him since his brewery opened:

“[WB4] have been good to us, they’ve fixed kegs, they’ve always helped us out. They are really good to us.” (WB2:267-268).

Again, it is logistically sound for WB2 to have a geographically proximate brewer “fix kegs”, which can weigh up to 72kg. It means that the kegs can be transported and returned more efficiently than with a geographically distant brewery. This supports the idea that the convenience of geographic proximity encourages in-person interactions and creates opportunities for knowledge-sharing. However, as with the example provided by AB2, WB2 alluded to pre-existing social proximity with WB4:

“I’ve known [WB4] through cricket – [name] sort of hospo areas.” (WB2:270)

This means that the support and in-person interactions between WB2 and WB4 are not solely the consequence of geographic proximity, but instead, geographic proximity coupled with social proximity. This provides further support for the argument that geographic proximity is independently insufficient for knowledge-sharing (Boschma, 2005). However, it does not support the idea that geographic proximity is unnecessary for knowledge-sharing. The participant reports developing social proximity with WB4 on a platform of geographic proximity. In other words, geographic proximity is essential for these interactions, via a degree of separation. This is because geographic proximity enables the development of social proximity (Balland et al., 2022). Geographic proximity also appears to play an important role in facilitating knowledge-sharing between craft breweries and other organisation types.

Participant WB4, for instance, reported interactions with a local dairy business:

“We are going to visit [dairy business] here in Hamilton” (WB4: 94-95).

“[Dairy business] have been very successful by being very focused on what they do. So, we want to go in as participants and say, how does that work?” (WB4: 96-97).

“Most craft brewers will just go to other craft brewers, we look at industry-wide, and try to bring other disciplines to this industry.” (WB4: 98-99)

WB4 and the dairy business are organisationally distant. Organisationally distant firms may face challenges in knowledge-sharing (Davenport, 2005), due to their disparate reference spaces and associated knowledge (Rallet & Torre, 1999). Yet, in the participant’s account, organisational distance can be circumnavigated by geographic proximity (Cassi & Plunket, 2014). The participant does not allude to the existence of social proximity between himself and anyone from the dairy business, but in-person interactions will ‘most likely’ (Balland et al., 2022) lead to its development. Furthermore, the participant’s account reflects a cognitive dimension motivating the interaction. His characterisation of the dairy business as “successful” and “focused” indicates that he perceives them to be cognitively higher in a dimension of knowledge. This means that while geographic proximity enabled the interaction, cognitive distance motivated it (Broekel & Boschma, 2017). Simultaneously, WB4 is required to be sufficiently cognitively proximate with the dairy business if he is to make use of the knowledge he obtains from them (Boschma, 2005). Again, this supports the idea that geographic proximity is independently insufficient for knowledge-sharing (Boschma, 2005), but suggests that it forms an integral part of enabling in-person interaction. Interactions between organisationally distant organisations are also detected in an account from TB1-2.

TB1-2 accounted for interactions she has with *New Zealand Hops Ltd*³⁹, where she is approached to brew with new hop styles and provide her sensory interpretation of beers made with those hops:

“So, they’re based in Riwaka, which is only half an hour away, so if they’re doing some trials or breeding process...so the latest Nectar⁴⁰ that launched was 16/17 years in the breeding process, so we have the opportunity to brew with those, which is fab. And recently we’ve had NZH101 and 102, and I believe that there’s another one that they’ve just floated to me on Saturday, so we’ll erm...it’s really good and it is innovative, and you’re trialling something that hasn’t been used before.” (TB1-2: 149-154).

The first element the participant remarks upon is the geographic proximity of *New Zealand Hops*, and in so doing intimates this is the reason she is approached for her insight. Recognising this, I asked if she was aware if *New Zealand Hops* had a similar arrangement with other breweries in the region. TB1-2 confirmed that they did not. I later affirmed this with other participants in the Tasman Bay region – none of whom had been approached by *New Zealand Hops*. Following this, I asked why they had elected to reach out to TB1-2. She did not respond, instead, TB1-1 offered her insights:

“If you’re in the R&D department of New Zealand Hops, then you want someone who is a judge and is known for the best pallets, you wouldn’t not use them. Why would you go

³⁹ New Zealand Hops Ltd cultivate and develop new strains of hops in New Zealand for the brewing industry. ("NZHopsLtd," 2022)

⁴⁰ A recent hop variety with notes of sweet and citrus fruit.

elsewhere for that when you've got every single box ticked, and to a very high degree ticked." (TB1-1: 178-180)

The participant's remarks indicate her perception of why *New Zealand Hops* approached TB1-2. Therefore, the rationale she provides is speculative. Nonetheless, the perception indicates that *New Zealand Hops* approached TB2-2 because they recognised the value of her extensive knowledge and experience. On one hand, this could be interpreted as *New Zealand Hops* seeking knowledge from a cognitively higher (Broekel & Boschma, 2017) source. Meaning that these interactions are supported by cognitive distance. However, it is also possible that the interactions are based on trust, which stems from *New Zealand Hop's* perception of TB1-2's reputation, skills, and competencies as a brewer (Mayer et al., 1995; Sánchez de Pablo González del Campo et al., 2014). Notwithstanding, the account provides support to the argument that geographic proximity is insufficient for knowledge-sharing (Boschma, 2005). I proceed to discuss temporary geographic proximity in craft brewery knowledge-sharing.

Temporary Geographic Proximity

Although it does not comprise part of Boschma (2005) proximity framework, temporary geographic proximity is argued to be an appropriate substitute for geographic proximity (Davids & Frenken, 2018), or superior to geographic proximity (Torre, 2008) in facilitating knowledge-sharing between firms. This is because the benefits of in-person interaction, namely tacit knowledge exchange, can occur on temporal platforms (Rallet & Torre, 2005). My results support this sentiment but also find that temporary geographic proximity acts primarily as a facilitator of other proximity dimensions, that go on to sustain knowledge-sharing between geographically distant breweries. Here I discuss accounts of participant interactions on three commonly cited examples of temporary geographic proximity: industry events, judging events, and travel.

For my thesis, an industry event is defined as a consumer-focused convention where craft brewers have a commercial presence. Craft brewers attend these events to sell beer directly to consumers and to showcase their latest products. *Beervana*⁴¹ is the largest and most popular of these events in New Zealand. These events physically bring together craft brewers from across New Zealand, meaning they represent opportunities for in-person interaction and learning between geographically distant brewers. WB4 reflected on these events as an opportunity for learning when I asked him how he keeps up to date with developments in the craft brewing space:

"We travel, whether it's to March festival, whether it's to Beervana, or the craft brewer's conference in the US." (WB4:84-86).

While such events present an opportunity for knowledge-sharing between geographically distant craft breweries, the knowledge exchanged at such events is typically centred on the products on display (Zhong

⁴¹ A 4-day event held annually in Wellington held every August. Approximately 100 craft brewers had a commercial presence at the event in 2021.

& Luo, 2018). Thereby, the opportunity for tacit knowledge exchange may be limited compared to interactions on a platform of geographic proximity. However, temporary geographic proximity also provides an opportunity for the development of social proximity, as AB1 suggested when asked how he meets other brewers:

“Beer events, pretty much. That’s when all the networking...we don’t see it as networking, but that’s when it happens, so. For example, Beervana you go there for four days in Wellington, and you go out most nights and you meet people, and yeah. It’s generally in pubs.” (AB1:145-148)

The participant supports the idea that socially proximate connections are formed at industry events, such as *Beervana*. This suggests, similar to geographic proximity, temporary geographic proximity can facilitate the development of social proximity (Balland et al., 2022). The occurrence of this in a pub setting, suggests that craft brewers’ shared *passion* for beer also inclines the development of social proximity. Nevertheless, the formation of social proximity on a temporal platform means that social proximity can be developed between otherwise geographically distant craft brewers. This is significant because social proximity can facilitate knowledge-sharing between distantly located brewers.

An account from WB1 reflects upon the establishment of social proximity with distantly located TB4:

“I met him when I lent him a bunch of hand pumps for Beervana. He was setting up and his hadn’t made it or something – and he said is anyone coming down and can hook me up, and I did.” (WB1:447-449).

The participant’s reflections on meeting TB4 at *Beervana* reinforces the networking aspect of this event. Their encounter was induced by a combination of temporary geographic proximity, and WB1’s willingness to assist a fellow craft brewer – which lends support to my previous characterisation of craft breweries as a community of practice. Social proximity was developed as a consequence of their encounter, and as WB1 continued, this has sustained their knowledge-sharing relationship at a geographic distance:

“I’ll be drinking [TB4s] beer somewhere and I’ll text him and say: ‘Dude this is tasting fantastic, good on you’.” (WB1:408-409).

The exchange highlighted could be interpreted as superficial at first, but by drinking his beer WB1 feels connected to TB4, regardless of the geographic distance between them. This is a demonstration of social proximity, developed on a platform of temporary geographic proximity, enabling distant knowledge-sharing. Participants recognise the value in developing social proximity with distantly located craft breweries. DB2, for example, established his own beer festival and invited craft brewers to attend for free, so that he could interact with them:

“We had 15 odd brewers in the building, and none of them had to do anything other than drink and chat. They had a blast. That was a really great event and a lot of new connections made from that. It spun up a couple of collaborations that we’re going to be doing later in the year now, as a result of it.” (DB2:178-181).

Hosting a beer event at his brewery enabled in-person interaction between DB2 and craft brewers who are ordinarily geographically distant. The in-person nature of this event provides opportunities for the exchange of tacit knowledge (Nonaka, 1991), and developing social proximity (Balland et al., 2022). From a commercial perspective, it also allows the participant to gain insight into his competitor's activities. According to the participant, the social proximity developed at these events can be leveraged for future interactions and collaboration at a geographic distance. This suggests that while temporary geographic proximity can facilitate immediate knowledge-sharing, it is viewed by participants primarily as a tool for developing social proximity – that is used to enable latent knowledge-sharing. This dynamic is similarly reflected in instances of travel.

When asked, all participants expressed a fondness for travelling to geographically distant craft breweries, both in New Zealand and internationally. In part, this can be explained by the craft brewers' *passion* for beer. Speaking from my horizon as a beer consumer, I am empathetic to this sentiment, as my passion for beer has rationalised travel to various parts of the world. However, participants also recognise that travelling to distant craft breweries is a vehicle for obtaining knowledge and building relationships. For example, AB4 advised how he acquired the requisite knowledge for commercial brewing:

“When I first started brewing, I just got in my car, flew down to Christchurch and went to [Christchurch Brewery], Three Boys, (inaudible), then drove down to Dunedin, went to [Dunedin Brewery] then somewhere else, then went to Invercargill.” (AB4: 220-222)

Prominent scholars in temporary geographic proximity (Rallet & Torre, 2005) argue that small businesses lack the resources to utilise temporary geographic proximity as a mechanism for knowledge acquisition. Conversely, the participant's account indicates that craft breweries are capable of utilising temporal platforms to acquire knowledge. For reference, 23 of the 24 participants cited instances of travel as a means of learning. The remaining participant expressed a desire to travel to distant breweries, but an inability to do it regularly due to time restraints, reflecting the view that craft brewers are frequently constrained by time (Alonso et al., 2018). Similar to the examples I provided in the previous section, there are two methods of knowledge acquisition when travelling to distant breweries: observation and interaction.

For instance, NB2 explained that he will occasionally visit a brewery as a ‘punter’. In these instances, the participant can:

“See what they are up to, you can also get a general vibe of a brewery, especially if they have their own taproom.” (NB2:93-94)

His remarks suggest that, just as with geographic proximity, there is the capacity to acquire knowledge from a distant brewery by visiting and observing its function. However, temporary geographic proximity alone is insufficient for this, as the participant requires sufficient cognitive proximity to recognise and absorb what he observes (Balland et al., 2022; Boschma, 2005). Again, the levels of learning enabled by

observation are likely limited when compared to interactive forms of knowledge-sharing, as NB2 continued:

“We went to Wellington a few weeks back, went and caught up with [name] at [Wellington Brewery] and went to a few other breweries, but that was the one we actually eeked information out of.” (NB2:82-84).

The use of the term “eeked” suggests an initial resistance on the part of the Wellington brewer to share knowledge with the participant. Nevertheless, the participant’s interaction with the Wellington brewer (located 820km away from NB2) is comparable to interactions between geographically proximate brewers. This is because temporary geographic proximity enables in-person interaction (Torre, 2008) and subsequent knowledge-sharing. Furthermore, the participant alludes to the development of social proximity on this temporal platform when asked who he would contact first when seeking knowledge:

“[Name] down at [Wellington Brewery] ‘cos it’s all about personalities and getting on with people.” (NB2:116-117).

From his Northland location, there are two other craft breweries in the same region as NB2. One is located approximately 20km away in Kerikeri, and the other is located 110km away in Waipu. Operating in relative isolation means that any brewery named by NB2 in response to my question would most likely be geographically distant. However, NB2’s identification of the Wellington brewery is based on “personalities” and “getting on” which is indicative of social proximity. This means that the participant’s preference is to interact with socially proximate brewers over geographically proximate ones. The absence of geographic proximity from this account supports the view that it is both unnecessary and insufficient for knowledge-sharing (Boschma, 2005). Similar dynamics were observed in an exchange that occurred once I had interviewed GB1.

GB1 is located in geographic isolation on Great Barrier Island (Aotea). There are no other craft breweries on the island, but it is a popular destination for travellers. Once my interview with GB1 had ceased, we continued to chat while drinking some of his beer. During this, two individuals arrived at the brewery. They introduced themselves as the owner and brewer of a craft brewery in the Coromandel. They proceeded to discuss with GB1 the intricacies of their respective breweries. The discussion ranged from brewing equipment and ingredients to licencing legislation. Once the discussion had ended, GB1 and the Coromandel craft brewers exchanged contact information and agreed to keep in touch. The Coromandel brewers extended an invitation to GB1 to visit their brewery for “a few free jars” and a chat. The interaction I observed is indicative of the ability of temporary geographic proximity to facilitate in-person knowledge-sharing (Torre, 2008) between craft brewers. Though I did not perceive the development of social proximity during this interaction, temporary geographic proximity left the door open to its development in the future. The opportunity for social proximity to be developed on platforms of temporary geographic proximity is particularly advantageous for breweries operating in the Tasman Bay region of New Zealand.

To recall, breweries in the Tasman Bay region operate in close geographic proximity to New Zealand's commercial hop farms. TB2 noted that the hop farms are a magnet for New Zealand and international craft brewers. While in the region, visiting craft brewers interact with local ones:

“All the other brewers come down and visit and attends events and stuff.” (TB2: 173-174)

“Like this last hop harvest, we had the guys from [Wellington Brewery], [AB3], [Another Wellington Brewery], they all came through and had a tour, and [AB1] as well.” (TB2: 185-186).

The participant accounts for a location-based advantage stemming from his physical closeness to the hop farms. Specifically, when other brewers are in the region, the participant has the opportunity to interact with them in person. These interactions are valuable because they can enable immediate knowledge-sharing, including tacit knowledge (Nonaka, 1991), and facilitate the development of social proximity (Balland et al., 2022). Five of the six Tasman Bay participants reflected this narrative. The sixth advised that his interactions with other brewers were limited because he is *“Probably a little bit private about networking and will only network with people that I trust”* (TB3: 105-106). Suggesting that the participant is more discerning than other brewers when electing to interact with. Beer judging events represent similar opportunities for knowledge-sharing and developing social proximity.

A beer judging event is where craft brewers with industry clout are invited to judge a range of homebrewed and commercial brewed beer. In their operation, these events shift the focus from the consumer to the industry. For participants, they are materially indistinct from events like *Beervana* – which is also viewed as an industry event. From the perspective of a judge at one of these events (WB4), they are a favourable medium for knowledge-sharing and innovation diffusion:

“I can tell you that judging beer is a really good insight to liquid innovation – so watermelon and mint beer I judged two years ago, and I thought man that's wicked, so we came back and did one.” (WB4:88-90).

Similar to *Beervana*, judging events enable knowledge acquisition concerning showcased products, as per Zhong and Luo (2018). Although, the nature of judging means that the participant was able to develop a sensory insight of the beer. The knowledge acquired in this case encouraged the participant to later imitate the beer. This is broadly reflective of the innovation diffusion process described by Rogers (1962). However, in this case, knowledge was diffused on a platform of temporary geographic proximity, meaning that the role of geography in innovation diffusion can be subverted by a temporal platform of interaction (Lengyel et al., 2020). As with other modalities of temporary geographic proximity, judging events are also an opportunity for the development of social proximity.

For instance, TB1-2, when discussing how she had come to create a collaboration beer with AB6, explained:

“I’ve known [AB6] for years and years, and again it was through that connection, we judged together.” (TB1-3:297-300).

While judging events offer similar opportunities to develop social proximity as events like *Beervana*, they are distinct because the brewers who judge at the events have industry clout. The credentials and capabilities of these brewers help to create a perception of trustworthiness (Mayer et al., 1995; Sánchez de Pablo González del Campo et al., 2014). This means that judging events are an example of organised temporary geographic proximity (Rallet & Torre, 2005) where cognitively proximate craft brewers may physically meet, share knowledge, and develop social proximity. This is important because social proximity punctuates knowledge-sharing relationships between New Zealand craft brewers.

Social Proximity

Social proximity is defined by relationships; friendships; and kindships based on trust (Boschma, 2005). Trust-based relationships are conducive to knowledge-sharing in a small business context (Curado & Vieira, 2019). It is therefore argued that social proximity is central to knowledge-sharing (Balland et al., 2022). My findings favour this view, finding that social proximity is an important enabler of craft brewery knowledge-sharing.

When delineating which brewers they would contact when seeking knowledge, participants indicated that they would contact fellow brewers with whom they are friends. This is because, as WB1 suggested, friendship with a brewer grants access to their knowledge:

“There are plenty of brewers luckily most of whom are good friends, and I have massive respect for, and also a good relationship with – so I can say: ‘Hey mate, how did you do that, and they will tell you.’” (WB1: 303-305)

The friendships the participant reports are indicative of socially proximate relationships (Boschma, 2005). The trust within socially proximate relationships means that the participant is comfortable exposing gaps in knowledge and requesting knowledge from certain fellow brewers. This suggests that social proximity is sufficient for knowledge-sharing (Maghssudipour et al., 2020) between craft brewers, even when forms of geographic proximity are absent. The absence of either form of geographic proximity means that social proximity alone may only enable the transmission of codified knowledge (Nonaka, 1991). However, the absence of social proximity between geographically proximate craft brewers may prohibit any form of knowledge exchange.

For example, TB2 explained that he will interact with fellow brewers whom he is not friends with, nor trusts, but during such interactions, an intentional effort is made to withhold knowledge:

“There are certain individuals who have a reputation for taking ideas, and when you show them around you make sure you’re sharing a lot less information.” (TB2:192-193)

From the participant’s account, the propensity to share knowledge with other brewers is lessened when the characteristics of social proximity (trust and friendship) are absent. This means that a lack of social proximity can prohibit knowledge-sharing and innovation diffusion (Morone et al., 2019) between

geographically proximate brewers. This provides support to my earlier observation that participants prefer knowledge-sharing interactions with socially proximate brewers over geographically proximate ones. DB2 expressed a similar preference, listing five craft brewers he trusts to call upon for knowledge:

“We talk with [Auckland Brewery] a fair bit, [Wellington Brewery] a fair bit, you know, [DB1] in town. [Two Wanaka Breweries] in Wanaka.” (DB2: 157-158).

Of the five breweries mentioned only one operates in the same city, another two operate in the same region (Otago) but are located 270km away. The participant’s distant connections, particularly those in the North Island, strengthen the view that the trust element of social proximity can overcome geographic barriers to knowledge-sharing. This may lead to the conclusion, consistent with the central thesis of proximity literature (Boschma, 2005), that geographic proximity is unnecessary for knowledge-sharing. However, the weakness in this argument is exposed by exploring how social proximity between craft brewers is initiated.

Noting that socially proximate characteristics of trust and friendship determined participant knowledge-sharing interactions, I sought to understand how their social proximity had been established. In the previous section, I noted that both forms of geographic proximity enabled social proximity. Consistent with this, I found that all cases of social proximity identified in participant accounts were the result of in-person interaction. For example, AB8 identified two geographically proximate social connections:

“So, we know [Auckland Brewery] pretty well, we brew a fair bit of their beer, erm I know the guys at [Another Auckland Brewery] pretty well, erm and a few others down South as well.” (AB3: 139-140).

The participant went on to intimate that a friendship was developed with the Auckland brewery owner when he would visit the brewery and drink beer.

“[Auckland brewers name] used to live in Browns Bay where we had our first bar, so we’ve known him since then.” (AB3:264-265).

“I’ve known [Auckland brewers name] for a long time, so that’s sort of how it came about. I can’t remember the exact details but we were probably having a beer one day and agreed to brew for him.” (AB3: 270-271).

The participant's reflections of regularly sharing a beer with the brewer in question suggests he perceives a friendship between them and points towards social proximity. The participant and the brewer regularly sharing a beer is enabled by the geographic proximity between them. In other words, their geographic proximity helped to initiate their social proximity (Balland et al., 2022). However, geographic proximity cannot account for the Auckland-based participant's social connections “down South”. Geographically distant social proximity is initiated on platforms of temporary geographic proximity. WB4-1 disclosed this when discussing a social connection based in Taranaki, 264km from the participant:

“We went down to see [Taranaki brewer] in Taranaki, he’s a nice guy, you try all the things on the taps, you talk about a few things, he gives some back. You know it’s really nice interaction.” (WB4: 346-348).

The participant's characterisation of the Taranaki brewer as a "nice guy" and the interactions with him as "nice" point towards a perceived friendship, indicating social proximity. Further, the participant's willingness to share knowledge with the Taranaki brewer alludes to a degree of trust, supporting the existence of social proximity. Social proximity between the participant and the brewer was developed on a platform of temporary geographic proximity when the participant travelled to Taranaki. In other words, temporary geographic proximity can facilitate social proximity (Balland et al., 2022) between craft brewers, and temporary geographic proximity is an appropriate substitute for geographic proximity (Davids & Frenken, 2018) in this regard. However, social proximity over geographic distance may be a relatively inferior modality of knowledge-sharing, compared to a combination of social and geographic proximity, as tacit knowledge cannot be exchanged at distance (Nonaka, 1991).

Tacit knowledge-sharing is optimised by face-to-face interaction (Storper & Venables, 2004). This means social proximity alone is insufficient for tacit knowledge exchange. Instead, social proximity requires pairing with either form of geographic proximity. Towards that, participants indicated that social proximity encourages recurring instances of temporary geographic proximity. Practically, this involves craft brewers travelling to distantly located craft brewers to visit their socially proximate connections. AB4 delineated one such account:

"I'm in Wellington next week so I'll pull in and see a couple and catch up with guys in [Wellington Brewery], see what going on in their world, it's always good to compare, you know." (AB4: 226-227).

At the time of writing, there are 15 craft breweries in Wellington, including those that do not meet the sampling criteria for this research. Of those 15, the participant elects to visit one with whom he has an existing relationship. This suggests the craft brewers' tendency to travel, coupled with the access to knowledge granted by social proximity, results in repeated in-person interactions between geographically distant brewers. The in-person nature of these interactions permits tacit knowledge-sharing (Nonaka, 1991). Regarding the role of geographic proximity in diffusion (Lengyel et al., 2020), this suggests that craft brewing knowledge diffuses through social systems, over geographic networks. The dyad of social and temporary geographic proximity is leveraged by participants located in geographic isolation.

GB1, for example, operates in geographic isolation from other craft breweries. This means his interactions require temporary geographic proximity. Opportunities for tacit knowledge exchange are presented when socially proximate brewers (AB6 in this case) visit him:

"We bought our kit from [AB6]. Our brewery is his old brewery, so obviously he came out here to help us set it up, and helped us with our first brew, and showed us the intricacies of the old kit, and the ins and out." (GB1:128-130).

The participant's ability to access knowledge via social and temporary geographic proximity supports the view that geographic proximity is not required for knowledge-sharing (Boschma, 2005). However, a nuanced interpretation of geographic proximity that includes the temporal dimension, suggests that a form

of geographic proximity is essential to developing social proximity (Balland et al., 2022), and the exchange of knowledge (including tacit knowledge) over long distances. Although, it should not be presumed that social proximity is an inevitable consequence of either type of geographic proximity (Giuliani et al., 2019). Factors of micro-institutional proximity mediate the development of social proximity between geographically proximate craft brewers.

Institutional Proximity

Proximity literature defines institutional proximity as the “*institutional framework at the macro-level*” (Boschma, 2005, p. 67), in which economic actors operate. Participants are all based in the same macro (national and industry) context, indicating that they are all institutionally proximate based on that definition. While New Zealand can be characterised as a cultural melting pot (“New Zealand as a village of 100 people: Our population,” 2019), my participant demographics reflect a largely New Zealand male population. In other words, my participants are broadly a homogenous group, meaning the potential for cultural and value-based disparities, at the macro-level, is low (Rogers, 1962). To serve as a reminder, definitions of macro-level institutional proximity have been expanded (Ponds et al., 2007) to describe operating in the same professional institutional setting. But this dimension is accounted for in the organisational proximity section of this chapter. However, the micro dimension of institutional proximity in which “*norms and values are embodied in specific exchange relations*” (Boschma, 2005, p. 67) can vary between craft brewers, and this is a crucial determinant of social proximity.

Micro-institutional proximity contends with the convergence of personally held expectations, values, and norms. It moves beyond the institutional norms of national or professional contexts and instead deals with how participants perceive other brewers, and if that perception is compatible with their values. Micro-institutionalism is a requisite for social proximity because if participants perceived themselves to be micro-institutionally distant from fellow brewers, they would actively avoid an interaction. AB1 illustrated this when explaining who he would not engage with:

“Pretty much if anyone has been called out for not doing the right thing by their staff, by the industry, or to a customer. Or even a rant on Facebook that I might not agree with, then I think I ‘ok I don’t really need to keep in touch with that person’.” (AB1:208-210).

The participant casts a wide net but explains that if he perceives the actions of another brewer to be negative, or to hold values incompatible with his own, then he will not interact with them. This means the potential for knowledge-sharing and igniting social proximity is diminished. It is unclear how significant micro-institutional proximity would be if an interaction with a fellow brewer was commercially beneficial for the participant.

Formulating a negative perception of another brewer does not require specific actions. Instead, as WB1 explained, perceptions of brewers’ personalities may also prohibit interaction:

“As soon as I smell ego, I don’t want to know them.” (WB1:335).

“It’s the people who big up themselves online, everything is very self-promotional and anything, no matter what it is, is done for a marketing reason or an image reason.” (WB1: 341-343).

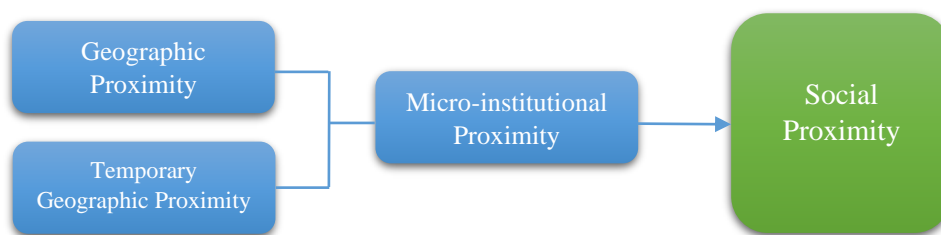
The participant’s account suggests a perception, however scantily informed, can form the basis of micro-institutional distance between craft brewers. This is significant because this perception can prohibit an interaction from occurring or diminish the quality of interaction between brewers. WB4 indicated the impact of a lack of micro-institutional proximity on the quality of interaction between himself and a Taupō-based brewer:

“I had just gone in for a beer, and I sat there, and he sat there, and just had a little beer with him, and just chatted...he was just the strangest brewer I had ever met... he was very standoff-ish and very distant, and he just didn’t want to ask me anything about our brewery we were building, and he was the only one that was challenging for me.” (WB4: 323-329).

The exchange between the participant and the Taupō brewer reflects an interesting dynamic. On one hand, the participant could be considered egotistical to want to discuss his new brewery with the Taupō brewer. This is compounded by the participant's apparent concern that the Taupō brewer was not interested in hearing about his brewery. The Taupō brewer's response was therefore consistent with the aversion to ego highlighted by WB1 in the previous remark. From the participant's perspective, a perceived mismatch of personalities and values between himself and the Taupō brewer is detected. His characterisation of the brewer as “strange” speaks to this but also suggests that WB4 has a perception of how craft brewers should behave when interacting with one another. If a brewer does not adhere to this perception, the ability to share knowledge and develop social proximity with them is impaired. This further elucidates how social proximity can be ignited.

Specifically, I have argued that both forms of geographic proximity can facilitate the development of social proximity. Extant scholarship recognises that geographically proximate actors do not always develop social proximity (Rallet & Torre, 1999; Rallet & Torre, 2005). However, there is limited understanding in proximity literature (Balland et al., 2022; Boschma, 2005) as to the forces that contribute to this determination. This research makes an original contribution to that domain of thought by finding that the development of social proximity between craft brewers is contingent upon either form of geographic proximity, coupled with micro-institutional proximity. I illustrate this contribution in Figure 13 below:

Figure 13 - Social Proximity Pathway



Given the apparent significance of social proximity in enabling craft brewery knowledge-sharing, a lack of micro-institutional proximity can be considered, via one-degree of separation, a barrier (Morone et al., 2019) to craft brewery knowledge exchange. Similarly, diffusion in a geographic setting (Lengyel et al., 2020) can be impeded by micro-institutional distance. This contribution supports the argument that geographic proximity enables social proximity (Balland et al., 2022), but only when buttressed by micro-institutional proximity. When the composition of social proximity is viewed this way, it is conceivable that social proximity can be lost by a change in micro-institutional proximity.

I did not detect evidence of a micro-institutional infraction leading to the loss of established social proximity among my participants. But an example was published in the New Zealand media after I had completed data collection: A Kaiapoi (Canterbury)-based craft brewer had written a series of racist and inflammatory remarks about Māori on his public Facebook page. Following this several craft brewers in the Canterbury region, as well as wider New Zealand, publicly distanced themselves from the brewer and vowed to not deal with him again in the future (Foon, 2021). Although the media example is extreme, it indicates that social proximity can be lost via micro-institutional infractions. Understanding the impact of these infractions and the effect on social proximity likely represents an interesting avenue for further work. So far, I have focused on how geographic proximities can lead to social proximity. With triadic proximity, I explain how temporary geographic and social proximity can be stimulated between geographically distant craft brewers.

Triadic Proximity

Triadic proximity is not a term used in extant proximity scholarship. Nor, as far as I am aware, is it a term used in any other academic field. It is a term I have devised to conceptualise a scenario where economic actors are socially proximate with a mutual third party, but not directly socially proximate themselves. It is therefore similar to the concepts of weak ties theory (Granovetter, 1973) and triadic closure (Ter Wal, 2013)⁴². However, its re-conceptualisation as a proximity dimension allows it to be integrated into the

⁴² These perspectives broadly argue that when two economic actors share a mutual third connection, they are likely to develop a direct socially connection becoming a socially embedded group, or triad.

existing proximity framework (Boschma, 2005). Evidence of triadic proximity was detected in participants who reported building relationships with craft brewers who were ‘friends-of-friends’.

An account from DB2, previously utilised in this chapter, indicated that he has socially proximate connections with craft brewers distantly located in Wellington and Auckland. When asked how the participant had met those brewers, he explained he had been introduced to them via existing connections at his brewery:

“[Wellington Brewery] erm...[name] who is the MD and Creative Director of [DB2 brewery name] he was flatmates with [name] of [Wellington Brewery]. So, they go back a long way.” (DB2:160-161).

“[Name] at [Auckland Brewery] ... [DB2 colleague] and he are mates; they go back a long way.” (DB2:161-162).

Portions of proximity (Boschma, 2005; Stephens & Cummings, 2021) and geography of innovation (Feldman & Kogler, 2010) scholarship argue that a primary benefit of geographic proximity is the heightened opportunity for serendipitous interaction with other economic actors. Based on the participant’s account, when craft brewers are triadically proximate, the potential for interaction does not rely on serendipity. This is because triadic proximity leads to the intentional introduction of craft brewers that are otherwise geographically and socially distant. This suggests that knowledge-sharing across geographic distances can be enabled by triadic proximity. However, dimensions of temporary and geographic proximity remain relevant to triadic proximity.

The role of triadic proximity is to facilitate an in-person introduction. This means that the closure of the triad involves meeting on a platform of temporary geographic proximity. Geographic proximities are also required for developing the social proximity that punctuates the triad. For example, in his account, DB2 indicates that the mutual third party (the MD and creative director) is socially proximate with the Wellington brewer and that their social proximity was developed on a platform of temporary geographic proximity when they were previously “flatmates”. In other words, the existence of triadic proximity is supported by social and geographic proximities. I provide further supporting evidence of the role of triadic proximity when discussing international craft brewery collaborations in Chapter Six.

Cognitive Proximity

Proximity scholarship (Balland et al., 2022; Boschma, 2005) considers cognition to be the only proximity dimension that directly influences innovation activity, while other proximity dimensions primarily enable communication. This is because cognitive proximity refers to the similarity of knowledge bases between firms, which determines their ability to recognise, assimilate, and exploit inflows of knowledge. Thereby cognitive proximity is conceptually similar to absorptive capacity (Cohen & Levinthal, 1990). In other words, for firms to recognise and make use of shared knowledge, they must be cognitively proximate. Cognitive proximity is frequently considered in objective terms, consistent with the positivist approach taken in proximity literature, and is quantitatively measured using various forms of indexing based on the

technological endowments of firms (Garcia, Araujo, Mascarini, Gomes Dos Santos, & Costa, 2018). In this section, I do not aim to offer an alternative to ‘measuring’ cognitive proximity but contribute to knowledge by elucidating the notion of perceived cognition, and its ability to stimulate or prohibit interactions between craft brewers. Before this, however, I discuss digital communication as a modality of knowledge-sharing that requires cognition as an independent proximity dimension.

A question I asked all interview participants was ‘how do you keep up to date with craft brewing?’ Invariably, the first response from all participants was to cite digital sources of knowledge. A selection of these digital sources is shown in Table 24:

Table 24 - Digital Sources of Knowledge-Sharing

Knowledge Source	Meaning Unit
Peer-reviewed Publications	<i>“I try and get as technical as I can which what I read, and I try to go to university sources if they are available.” (AB5: 106-108)</i>
Craft Brewing Forums	<i>“When I got into brewing there was a fantastic website called Realbeer.co.nz. It was just a group of guys on there, and I just asking...it was a forum for homebrewing essentially” (TB4: 129-130).</i>
Social Media	<i>“I will find out most stuff as a link from Facebook or sometimes Instagram or LinkedIn. It will be a link to an article somewhere else. So, it’s pretty much all on my phone.” (AB1: 181-183)</i>

Digital knowledge sources cited by the participants represent different modalities of knowledge-sharing between craft brewers, and researchers, with a global reach. These sources of knowledge are accessed with an internet connection and a device capable of supporting an internet connection. Geography, social relationships, nor institutional factors prohibit access to these forms of digital knowledge. Geography in particular is not a requisite, because the knowledge available on digital platforms is exclusively codified (Nonaka, 1991). However, to utilise these sources of knowledge, craft brewers are required to have a sufficient level of cognitive proximity with the knowledge provider. Without sufficient cognitive proximity, a craft brewer will be incapable of comprehending and utilising the knowledge available (Boschma, 2005). The greater the degree of cognitive proximity, the more knowledge a craft brewer will be able to recognise and exploit from the source. This highlights how the proximity framework applies to non-interactive forms of knowledge-sharing. Perceptions of cognitive proximity are similarly important for enabling interactive and in-person knowledge-sharing.

Perceived cognitive proximity does not feature in extant proximity scholarship, and as far as I am aware it is not a concept that exists in any other academic domain. I define perceived cognitive proximity as the

perception an economic actor (a craft brewer) holds about the cognitive abilities of another economic actor. An economic actor may be perceived as cognitively proximate, cognitively lower, or cognitively higher (Broekel & Boschma, 2017). There are similarities between this re-conceptualisation of cognitive proximity and trust scholarship (Mayer et al., 1995; Sánchez de Pablo González del Campo et al., 2014), that argues inter-firm trust and interaction are determined by a perception of competencies and capabilities. Consistently, it was found that a craft brewer's perception of another determines the nature of their interaction and willingness to share knowledge.

An interesting divide of perceived cognitive abilities emerged between participants that had received commercial brewing training and craft brewers that had developed their craft breweries from a homebrewing operation. The latter group, of former homebrewers, who run comparatively smaller breweries, suggested that the knowledge required for commercial brewing is static, regardless of size and scale. WB1 illustrated:

“Homebrewing too obviously teaches you a lot, [commercial] brewery setups are just home breweries with a lot more health and safety worries.” (WB1:44-46).

The participant reveals that he perceives his level of cognition to be similar to that of larger breweries because commercial brewery “setups” are fundamentally the same as homebrewing ones. This is because, as TB4 argues, the process of transitioning from homebrewing to commercial brewing is a matter of scaling up the size of the operation, rather than any procedural changes:

“The first brewery was only 250litres, which is miniature. Then we went to a 600-litre plant, and then eventually up to what we’re doing now which is a 1,200. And now we’ve got...it’ll take 2 brews to fill one of the big tanks, yeah...so...all the others are 1,200. So, it’s just been a case of incrementally scaling up, you know over many years.” (TB4: 26-30).

Firstly, the participant’s account contradicts an earlier remark from NB1, who explained that as the craft brewery grows in size and scale it becomes necessary to introduce automation and new processes, that change characteristics of the brewing process. However, by comparison, NB1’s brewery provides beer New Zealand-wide, whereas TB4 provides principally to the local market. This means that if and when TB4’s brewery becomes sufficiently large he may perceive more fundamental changes to the brewing process. Nevertheless, the participant's account at present indicates that he does not perceive any cognitive distance between his brewery operation, and that of a larger craft brewery. Despite this, commercially trained craft brewers, such as TB3-2, perceived themselves to be cognitively higher than homebrewing trained craft brewers:

“I came through corporate training...a lot of guys these days come from homebrewing; they just wouldn’t know if something went wrong what to do with it.” (TB1-3: 228-230).

This suggests that commercially trained craft brewers perceive former homebrewers to be cognitively lower, and former homebrewers do not detect a significant cognitive distance between themselves and commercially trained brewers. This perception may be due to a lack of understanding as to what

commercial training involves, on the part of the former homebrewer, or condescension on the part of those who experienced commercial training. This represents a contribution to craft brewery scholarship (Cabrera-Flores et al., 2019) that finds the homebrewing heritage of craft brewers increases the propensity for interaction and collaboration. Instead, a homebrewing heritage appears to reduce the propensity for interaction with commercially trained brewers. For example, WB3, who received commercial training at *Dominion Breweries*, and owns New Zealand's largest craft brewery, suggested that while he is prone to learning from other craft brewers, he will avoid those whom he perceives to be cognitively lower:

"I learn something every time I go to a brewery, but then again I'm a brewer and you probably would learn something, but I wouldn't go to a small little craft brewpub in order to learn more about my business, or in order to become more innovative." (WB3: 107-109).

The participant's perception of "small little craft brewpubs" as cognitively lower means that he does not view them as useful sources of knowledge. This also speaks to the issue of ego raised by WB1 in an earlier section and suggests the participant's perception of smaller breweries may prevent him from developing social proximity with other brewers, thereby also limiting his capacity for knowledge-sharing. In sum, this suggests that perceived cognitive proximity may act as a barrier to knowledge-sharing between otherwise proximate brewers (Morone et al., 2019). Similar insight was obtained from NB1⁴³ when asked how he selects brewers to seek knowledge from:

"They would be commercial brewers, so I mean one is a large contract brewing business in NZ, one has worked for a large manufacturer...these guys have like 30-40 years' experience on me." (NB1: 140-141).

The participant expresses a preference for knowledge-sharing with brewers whom he perceives to be cognitively higher than himself. This suggests that perceived higher cognition promotes knowledge-sharing between craft brewers. This is supported by proximity scholarship (Balland et al., 2022) that argues cognitive distance motivates knowledge-sharing. This may only apply to higher cognition, as NB1 continued to explain that he too avoids interaction with brewers he perceives as cognitively lower:

"Seeing a brewery out there with consistently faulty beer I won't have anything to ask them." (NB1: 170-171).

The participant states that knowledge-sharing interactions with cognitively lower craft brewers are not sought because they have no discernible knowledge of utility. This suggests that cognitive distance, in the lower direction, prohibits craft brewery knowledge-sharing (Balland et al., 2022). Furthermore, the participant indicates how perceptions of cognitive proximity are generated. Specifically, if he perceives the quality of the beer produced by the brewery to be "consistently" low, then he goes on to form a perception of lower cognition. This means that so long as a craft brewery's beer is accessible to other brewers, it is possible for perceptions of cognitive proximity to be formed. Reflecting on my horizon, this

⁴³ Commercially trained at three breweries before owning/managing his own.

view challenged a prejudice of craft brewers being inherently cooperative. When instead, based on participant accounts, craft brewers are more discerning in their selection of breweries to interact and share knowledge with. The perspectives of WB4-1, however, supported my previously held prejudice.

WB4-1 identified himself as being new to craft brewing, with fewer than five years of brewing experience. Supplementing his perceived limited experience, WB4-1 expressed a tendency to seek knowledge from well-established craft brewers:

“We went and saw [AB1] and [Auckland Brewery] in the same day a couple of weeks ago. [AB4] – we spent half an hour.” (WB4: 297-298).

“We spent a day with [AB4]. I’m always the one who calls these guys up and lines up a little meeting with them.” (WB4: 298-300).

By granting the participant “a day” of his time, the comparatively more experienced AB4⁴⁴, was acquiescent to WB4-1’s request to learn from him. This speaks to the apparent friendliness and helpfulness of craft brewers, which points towards craft brewers as a community of practice (Wenger & Snyder, 2000). For cognitive proximity, this suggests that perceived cognitively higher craft brewers may be willing to share knowledge with cognitively lower ones, even if there is nothing that can be learned from the cognitively lower brewery. Though it cannot be discounted that AB4 possibly perceives the participant to be cognitively proximate, or that he has no perspective on the participant’s level of cognition⁴⁵. Nevertheless, unfavourable perceptions of cognition can act as a significant barrier to knowledge-sharing, even between socially proximate brewers. WB1 alluded to this when discussing his feelings towards a socially proximate brewer:

“I’d probably never go to him for information because I’m not interested in making the kind of beers that he is into, and generally if he makes classic beer styles, I find them lacking in some way, but I really respect his hazys – his huge silly beers, he’s done a really good job of that, and I have tonnes of respect for him, but I’d only ever seek him out to talk shit with him and have a beer with him.” (WB1:349-353).

Firstly, perceived cognitive distance does not appear to have impeded the development of social proximity in this case. The participant’s account also suggests social proximity may not be sufficient for sustaining knowledge-sharing. Instead, it appears that craft brewers are pragmatic about the cognitive abilities of brewers they seek knowledge from. This is compounded by the participant's observation that his friend is cognitively lower in “classic beer styles”, but higher in hazy styles – implying that if he required knowledge regarding hazy styles, he would contact his friend. This also suggests that perceived cognition is multidimensional, meaning a brewer can perceive higher cognition in one dimension, but lower cognition in another. Finally, the respondent's negative assessment of his friend's brewing abilities indicates a level of ego and superiority. This points to hypocrisy when considering the participant's earlier

⁴⁴ 15-20 years brewing experience.

⁴⁵ I followed up with AB4 via e-mail to ask about his exchange with WB4-1, but no response was received.

remarks, where he intimated that ego is an undesirable trait of craft brewers. Perceptions of cognitive proximity are also related to the geographic dimension of proximity.

Aside from being a potential barrier to knowledge-sharing between geographically and socially proximate craft brewers, perceived cognitive proximity can be improved as a consequence of geographic proximity. This is broadly reflected in proximity scholarship (Balland et al., 2022), which argues recurring interactions between geographically proximate economic actors lead to cognitive proximity, as actors learn from one another and develop their core knowledge. A dyadic account of this was detected in DB2's delineation of an interaction between himself and DB1. DB2 sought DB1's assistance in making a stout-style beer:

"[DB1] is well known for his stouts, so that was...so hey it was...the stout was going to be one of our own beers, and we just pulled it out of our core seasonal line-up and moved it into the collaboration line ups." (DB2: 220-222).

The perceptions of DB1 as cognitively higher in stout beers engendered the interaction between the brewers, supporting my argument thus far. Once the interaction was completed, DB2 noted:

"[DB1] has never used a mash press⁴⁶ before, so he probably learned a lot about the technology." (DB2:227-228).

By the end of their interaction, DB2 was exposed to knowledge of stout-style beer, and DB1 had been similarly exposed to the mash press technology. This means by the end of the interaction, DB2 perceived the cognitive bases of the brewers to be more proximate than it previously was. This does not mean that DB2 will approach DB1 when seeking knowledge pertinent to the mash press, but recognising that DB1 now understands the technology, he may be inclined to invite him to future interactions that involve its use. I continue by discussing the role of organisational proximity.

Organisational Proximity

To this point, I have discussed the proximity dimensions required for enabling craft brewery knowledge-sharing, and how those proximities can be achieved. However, these proximities do not explain craft brewery motives for knowledge-sharing. Motives for craft brewery knowledge-sharing are explained by organisational proximity.

Recalling extant scholarship, proximity literature commonly defines organisational proximity as a *"set of interdependencies within as well as between organisations connected by a relationship of either economic or financial interdependence."* (Boschma, 2005, p. 65). This definition reflects the adherence logic dimension of organisational proximity. It denotes formal arrangements between firms or networks of firms. It is favoured by proximity scholars for *"purely analytical purposes"* (Boschma, 2005). Similarity

⁴⁶ A rare and expensive piece of brewing technology that enables high levels of sugar extraction from grains.

logic is the second dimension of organisational proximity and represents actors who are similar in organisational terms, and as a result, share a similar space of reference and associated knowledge. Meaning this dimension is comparable to a community of practice (Gertler, 2003).

I discussed notions of New Zealand craft brewers as a community of practice in previous chapters but did not explore how this influences craft brewery knowledge-sharing. Understanding its influence requires reflection on the norms and values that define a craft brewery. *Innovation* and *community* are key elements of a craft brewery definition reflected in the similarity logic dimension of organisational proximity that motivates knowledge-sharing. Participants defined their breweries as innovative, and my analysis indicated appearing innovative is essential for deriving consumer legitimacy (Randrianasolo & Arnold, 2020) and the commercial success of the brewery. Remaining innovative is, therefore, a challenge faced by all New Zealand's craft breweries. Innovation requires access to knowledge (Quintane et al., 2011). This means craft brewers are required to continually seek knowledge to remain innovative. AB6 reflected this sentiment:

"I'm not stupid enough to say that we have all the answers inside and looking at other breweries is always interesting." (AB6: 96-92).

The participant remarks indicate the craft brewery requires exogenous sources of knowledge to remain innovative, by findings "answers", and other breweries are a valuable source of such knowledge. All participants similarly recognise the value of knowledge in their industry counterparts. WB3 for example, one of the most experienced participants, who described himself as one of the "founders" (183) of craft brewing in New Zealand stated: *"I learn something new every time I go to a brewery"* (WB3:107). Despite several years of brewing experience, the participant attests to the value of knowledge contained within other breweries. Although, as previous remarks from WB3 suggest, he does not view all craft breweries as equally valuable sources of knowledge. Nonetheless, this indicates an interdependency of knowledge between New Zealand craft brewers, which motivates knowledge-sharing. In other words, the shared requirement to be innovative creates a shared motivation for knowledge-sharing. This interdependency presents as the New Zealand craft brewing industry reflecting something of a community.

In that vein, participants described fellow craft brewers as friendly and willing to share knowledge. Again, this was evident with every participant, even those who operate in geographic isolation, such as GB1 who stated:

"It's been quite apparent how close-knit the brewing community is in NZ, everyone seems to know each other, and we've had a lot of help from other breweries already." (GB1:56-58).

The participant, whose brewery has been in operation for fewer than two years, has been able to access knowledge from the 'close-knit brewing community' he describes. WB4-1 accounted for a similar experience:

“The vast majority of people in the craft brewing industry in NZ, are just awesome people to deal with like they’re just so sharing with information, and just generally nice to be around.” (WB4: 312-314).

Observations of friendliness and a willingness to provide support can be explained by a recognition that continued knowledge-sharing is required to sustain the innovativeness of the industry. Ensuring the innovativeness of the industry as a whole reflects a collective ambition for craft brewers, as it is how the craft share of the beer market is grown. This dynamic points towards a substratum of organisational proximity: adversarial proximity.

Adversarial Proximity

Adversarial proximity is a novel dimension, and therefore a contribution to proximity knowledge. Its identification was made possible by examining the similarity logic dimension of organisational proximity – which has broadly been disregarded by proximity scholarship (Balland et al., 2022; Boschma, 2005). Adversarial proximity denotes a situation where economic actors share a common rival in the market. The presence of a common adversary encourages cooperation between economic actors to compete against it. As such, adversarial proximity is punctuated by the ancient Sanskrit proverb:

‘The enemy of my enemy is my friend’

Evidence of adversarial proximity was potent. When asked who they viewed as their competitors, all participants identified corporate breweries as their primary, but not exclusive, source of competition. The presence of corporate breweries in the beer market encourages craft brewers to view themselves as a unified competitive entity, as NB2 expressed:

“I see it as the whole craft beer industry being competitive against the big boys.” (NB2:168-169).

The participant’s characterisation of corporate breweries as “big boys” is an apt recognition of their dominance of the New Zealand beer market, as remarks from TB4 explained:

“So, consider all the craft brewers as one unit, then you’ve got the competition, and DB and Lion have still got 90% stitched-up if you include all their purchases, so us lot are vying for a small portion.” (TB4: 165-166).

The participant’s description of craft brewers as “one unit” reflects his perception that craft breweries are a single entity when competing with corporate breweries. His view that craft breweries are left with a “small portion” of the market to vie for suggests the most significant opportunity for growing craft brewery market share comes from capturing it from corporate breweries. WB2 explicitly recognised this opportunity: *“you want to change the market to make it even bigger and you want to erode the share that the big boys have.” (WB2: 378-380).* Craft brewers recognise the commercial opportunity of prioritising competition with corporate breweries. They are therefore concerned with the profitability of their breweries. This contradicts the narrative that craft brewers are solely or mainly motivated by their passion

for brewing. That is not to suggest direct competition between craft breweries does not exist. However, it is viewed less seriously than the competition with corporate breweries, as DB2 remarks suggest:

“They are all our competitors as well, that’s the fun part. Do you have siblings?”
(DB2: 230).

The participant supports the view that craft brewery competition is taken less seriously by analogising it with a sibling rivalry and characterising it as “fun”. It thereby also supports the view the craft brewery's priority is to compete with corporations *“to grow everybody as a whole”* (AB3:338). This collectivist stance motivates craft brewery knowledge-sharing because craft brewers utilise innovation as an instrument to compete with corporations. This was revealed when asking craft brewers how they competed with corporation breweries, TB2 elucidated:

“Make more innovative and more creative beers and be faster. Ideally, you’d make a beer that everyone wants. Really you have to try to be the best of the best.” (TB2: 220-221).

In Chapter Four, I discussed how craft brewers utilise product and marketing innovation to appeal to consumer legitimacy (Randrianasolo & Arnold, 2020) and differentiate themselves in the market. It is therefore unsurprising for innovation to be weaponised against corporate breweries. Participants accounted for a specific type of product innovation designed to target corporate beer consumers, known as gateway beers. A gateway beer is an entry-level beer designed for consumers of corporate beer. They are intended to taste like corporate beer, but different enough that the consumer develops intrigue and transitions to drinking other craft beers. DB2 explained the function of these beers:

“We have 3-4 different beers in our core range that we refer to as gateway beers. Where it’s like hey you’re a Speight’s drinker, I’m going to have you try a pint of Super, because Super has a caramel finish, if you’re a Speights drinker and you have Super, you’ll like it.” (DB2: 261-264).

The participant’s efforts to attract corporate beer consumers counter the *passion* narrative I discussed in Chapter Four and suggests that craft brewers prioritise the commercial growth of their breweries. Gateway beers also demonstrate the centrality of innovation as a tool for growing the craft share of the beer market in New Zealand. Innovation necessitates knowledge (Quintane et al., 2011), which provides craft brewers a motivation to seek and share it. The presence of a shared adversary, therefore, motivates knowledge-sharing between craft brewers. This also counters the narrative that craft breweries are independent. Their collective approach to sharing knowledge towards growing market share speaks to an informal interdependency. This elevates understanding as to why geographically proximate craft brewers may share knowledge.

It is not clear that geographic proximity influences, or is influenced by, the types of organisational proximity discussed in this section. Organisational proximity has been considered an appropriate substitute for geographic proximity in knowledge exchange (Davenport, 2005). My findings neither support nor refute this view but suggest that organisational proximity (including the subdimension of

adversarial proximity) represents the motivation for inter-firm knowledge-sharing between craft breweries. Therefore, organisational proximities and geographic proximities play a complementary role in motivating and facilitating knowledge-sharing, respectively. For diffusion, this suggests a lack of organisational proximity can prohibit innovation diffusion between otherwise proximate firms (Lengyel et al., 2020; Morone et al., 2019).

Proximity Dimensions and Craft Brewery Definitions

In this Chapter, craft brewer motivations and rationales for interactions and knowledge-sharing were discussed. These discussions indicated that craft brewers can be discerning with whom they share-knowledge with. Knowledge-sharing decisions appear to be driven by commercial imperatives, which challenges the ‘driven by passion’ narrative discussed in Chapter Four. Altogether, this suggests that the ‘passion’ component defining craft breweries appears to be a reflection of strategic positioning (Porter, 1998b), rather than altruism.

Chapter Summary

This chapter has explored the influences of proximity dimensions on inter-firm knowledge-sharing between craft breweries in New Zealand. Exploration was framed as a response to the following two research questions:

1: What are the roles of proximity in knowledge-sharing between New Zealand’s craft breweries?

1a: How do other dimensions of proximity relate to geographic proximity in the New Zealand Craft Brewing Industry?

Through my exploratory approach to answering these questions the following contributions were made:

- The identification of triadic proximity as a new proximity dimension. Triadic proximity refers to indirect social proximity between craft brewers who share a mutual friend or connection. Triadic proximity enables in-person interaction between distantly located craft brewers and creates an opportunity for the development of direct social proximity.
- The identification of adversarial proximity as a new proximity dimension. Adversarial proximity is represented by the presence of a common competitor in the beer market, namely corporate breweries. Because corporate breweries control a significant majority of the beer market, craft breweries work together to grow the craft share.
- The identification of a perceptive dimension of cognitive proximity. Craft brewers perceive each other to be cognitively proximate, lower, or higher. Craft brewers seek interactions with

cognitively higher brewers, whereas craft brewers avoid interactions with cognitively lower ones. Levels of cognition are based on the perceived quality of beer on the market.

- Geographic proximity alone is insufficient for facilitating inter-firm knowledge-sharing between craft breweries (Boschma, 2005), and must be buttressed by social, organisational, or cognitive proximities.
- Geographic proximity, between craft breweries, is principally a facilitator of other proximity dimensions (Balland et al., 2022), namely social proximity and perceived cognitive proximity.
- The facilitatory role of geographic proximity in craft breweries can be substituted for temporary geographic proximity (Torre, 2008).
- Exploration of the similarity logic dimension of organisational proximity indicates that a mutual need to appear innovative motivates craft brewery knowledge-sharing.
- Insufficient social, cognitive, and organisational proximity can act as barriers (Morone et al., 2019) to knowledge diffusion between craft breweries.
- Knowledge diffusion between craft breweries is not contingent upon geographically embedded social systems (Lengyel et al., 2020). Instead, craft brewing knowledge can be diffused via disparately located actors that frequently meet on temporary platforms of proximity.

In addition to the outlined contributions to knowledge, prejudices in my horizon were challenged by the discerning and, at times, exclusive nature of craft brewery interactions. Specifically, the unwillingness of some craft brewers to interact with those whom they perceived to be cognitively lower. I previously considered craft brewers as inherently cooperative, but now recognise that knowledge-sharing interactions are more purposeful and pragmatic. I reflect on these contributions and challenges to my horizon as I continue to discuss the influences of geographic proximity on craft brewery collaboration modalities.

Chapter Six: Collaboration and Proximity

“Beer doesn’t solve any problems. But then again, neither does milk.”

– Scottish Proverb

Introduction

My findings and discussions thus far have focused on the roles of proximity in knowledge-sharing between craft breweries. In this chapter, I develop this discussion further by exploring how these roles influence different modalities of craft brewery collaboration. This represents a contribution to craft brewery scholarship (Alonso et al., 2018; Cabrera-Flores et al., 2019; Cunningham & Barclay, 2020; Lotfi et al., 2021) that aims to understand craft brewery collaboration, but does not consider different collaboration types, nor the role of proximity dimensions. I also seek to understand how proximity roles influence collaboration when compared with knowledge-sharing, representing a contribution to proximity scholarship (Balland et al., 2022), that indicates proximity influences knowledge-sharing and collaboration in the same way. While I explore this problem through a proximity lens, I remain open to identifying other factors influencing craft brewery collaboration and attempt to integrate these factors into the proximity framework where appropriate. In sum, in this chapter I respond to the following research question:

2. How are craft brewery collaboration modalities influenced by proximity dimensions in the New Zealand Craft Brewing Industry?

I begin the chapter with a discussion of different collaboration modalities in the New Zealand craft brewing industry. I then discuss the role of geographic proximity in enabling contract brewing arrangements. Next, I present specific cases of collaboration brewing, experienced by participants, between New Zealand-based craft breweries.

I explore these cases of collaboration, identifying evident proximities, and discussing their role. I follow the same format in my presentation of international collaboration brewing arrangements, and inter-industry collaborations. I conclude the chapter by presenting a table of the types of proximity evident in each collaboration modality.

New Zealand Craft Brewery Collaboration Modalities

Providing a basis for understanding the cases of collaboration I discuss in this chapter; I present an overview of commonly adopted collaboration modalities in the New Zealand craft brewing industry. Recalling Chapter Two, craft brewery collaboration typically assumes three formats (Goldfarb, 2016; Routson, 2012):

- A **taproom takeover** is where a craft brewery hosts and sells beer produced at another brewery.
- **Contract brewing** is where a business hires a brewery to brew beer on its behalf.
- **Collaboration brewing** is where two or more breweries work together on the production of a single beer or series of beers.

Taproom Takeover

Taproom takeovers are a common collaboration format in the American and European craft beer settings (Kraus et al., 2018). However, they were not mentioned by any participant during our discussions of collaboration. Instances of taproom takeovers have certainly occurred in New Zealand ("Tap Takeover: Sawmill Brewery and Brothers Beer," 2017). This indicates participants do not view taproom takeovers as especially collaborative. This perspective can be understood by considering the passive level of engagement a taproom takeover requires. Specifically, a taproom takeover can be facilitated by shipping a keg of beer to another brewery to sell. This foreshadows the varying levels of engagement involved in different collaboration modalities, and this, as I shall discuss, has important implications for the role of geographic proximity in other collaboration formats, such as contract brewing.

Contract Brewing

I describe contract brewing as a 'transactional' form of collaboration. I use the term transactional to represent the exchange of funds involved in a contract brewing arrangement (Routson, 2012). Specifically, the contract brewer pays a fee to a craft brewery to produce beer on their behalf. This collaboration modality is utilised by participants whose breweries are not large enough to meet their production requirements. To overcome their production limitations, these participants hired another brewery to produce some of their beer. In other words, contract brewing as a collaboration format is a vehicle for circumventing production and resource limitations. Operationalising a contract brewing arrangement does not necessitate geographic, or temporary geographic, proximity. Participants accounted for conducting contract brewing both in-person and at distance. Chosen forms of engagement are dependent on participant preference and time limitations. For example, WB2 explained that his preference is to travel to the brewery when his beer was being contracted:

"We always went down for the [Taranaki Brewery] brews as time went on you just get other commitments; you try and get there for the brews." (WB2:367-368).

Attending the brewery in person is the expressed preference of the participant. In-person attendance allows the participant to actively engage in the brewing process. The interactive nature of this provides opportunities for learning, including the exchange of tacit knowledge (Nonaka, 1991). This means that physically attending a contract brewing arrangement can be a superior format, from a purely knowledge-sharing perspective. As the participant continues, his attendance at the contract brewery has waned due to "commitments". This is indicative of time constraints prohibiting engagement in a craft brewery

collaboration (Alonso et al., 2018). But it also demonstrates that contract brewing can be accomplished with limited in-person engagement. An account from AB1, where he discussed contract brewing that he does on behalf of a UK-based brewery, epitomises how contract brewing can operate with limited engagement:

“They gave us the recipe and then we applied it to our process, so they didn’t...they just trusted us to do it.” (AB1: 113-114).

The UK-based brewer’s contribution is formulating and sharing the beer recipe, while the participant assumes responsibility for the brewing process. A beer recipe is an example of codified knowledge, meaning it can be transmitted across long geographic distances (Nonaka, 1991). The UK brewer does, therefore, not have to be present for, or actively engage in, the brewing of the contract beer. This distant contract brewing arrangement may also be enabled by the “trust” identified by the participant, but without the UK brewer’s account, this is somewhat speculative. Nonetheless, this account serves to illustrate how contract brewing arrangements are not contingent upon forms of geographic proximity. Collaboration brewing is subject to a similar dynamic.

Collaboration Brewing

Unlike contract brewing, collaboration brewing does not typically involve the exchange of funds between collaborating brewers. Instead, the collaborating breweries jointly produce a single beer, or series of beers, that display the names of the breweries involved on the packaging (Kraus et al., 2018). The novel composition of breweries appears as a new product to craft beer consumers, thereby appealing to their continued demand for innovation (Bastian et al., 1999). This suggests collaboration beers are a mechanism for deriving legitimacy (Suchman, 1995) from consumers (Randrianasolo & Arnold, 2020). Similar to contract brewing, however, collaboration brewing does not necessitate in-person interaction at the point of brewing. For example, when asked about how prior collaborations were organised, DB2 stated:

“It’s just usually the brewers will sit down and have a chat, or it can be over email and phone, it’s hey I want to do a stout, that sounds like a good idea.” (DB2:217-218).

The participant’s account appeals to the versatile nature of collaboration brewing modalities. Specifically, collaboration brewing can be conducted both in-person and at distance. In this sense, collaboration and contract brewing are similar. This is because both collaboration formats can be sustained by the sharing of codified knowledge: the beer recipe. In-person engagement in collaboration brewing therefore only occurs when it is the preference of the brewer, as TB1-2 indicated:

“I’ve done one [collaboration brew] at [Kāpiti Brewery] but that was with five, the pioneers, the five of us, and our token thing was throwing the hops in the kettle, and that was pretty good, but I like to be involved.” (TB1-2: 309-311).

The participant's preference to "be involved" encouraged her to travel to a geographically distant brewery (based in Kāpiti⁴⁷). Her account highlights how in-person collaboration brewing between geographically distant craft breweries can be facilitated by platforms of temporary geographic proximity. This supports my earlier finding that temporary geographic proximity is an appropriate substitute for geographic proximity (Torre, 2008). In sum, this suggests geographic distance does not impede collaboration brewing, as it can be overcome by digital communication channels or temporary geographic proximity. By extension, it can be argued that geographic proximity is 'unnecessary' (Boschma, 2005) for collaboration brewing. However, in the formation of a collaboration, geographic proximity can play a crucial role. I demonstrate this in the next section where I examine contract brewing arrangements through a proximity lens.

Contract Brewing through a Proximity Lens

As discussed in the previous section, geographic proximity is not a requisite for contract brewing arrangements, because fundamentally a contract arrangement can be sustained by the sharing of codified knowledge (Nonaka, 1991): the beer recipe. Yet, geographic proximity can have a latent and enabling effect on other proximity types (Balland et al., 2022) that are required for a contract brewing arrangement. Correspondingly, I delineate participant accounts of contract brewing arrangements; discuss the roles of evident proximities, and connect these with the role of geographic proximity. The first such account reflects a contract brewing arrangement between WB1 and another Hamilton-based brewery.

Between 2011-2017, WB1 did not have a physical brewery. Instead, he contracted his brewing out to a brewery based in Tamahere, a suburb in Hamilton's Southeast. When asked why the participant elected to have his beer brewed at the Tamahere location, WB1 stated:

"They were local, they had the capacity, and they had a guy there, [name], who could basically do all the brewing." (WB1:506-507).

The participant accounts for two factors contributing to his decision to partner with the Tamahere brewer. The first is locality: the participant indicates that it was important that his beer was brewed locally. The importance of locality is reflected in extant perspectives ("What is a Craft Brewery," 2021) that argue craft breweries are committed to their local communities because local communities are a primary source of craft brewery commerce (Bastian et al., 1999). The importance of locality can also be explained by logistics: by having his beer brewed in close geographic proximity, the participant can easily attend the brewing of his beer in person (Feldman & Kogler, 2010), as per his preference. It also permits the participant to liaise with the brewer in person, creating opportunities for tacit knowledge-sharing (Nonaka, 1991). Additionally, having the beer brewed by a geographically proximate brewer is convenient if the participant intends to distribute the beer to local outlets. Therefore, a preference for partnering with a

⁴⁷ 280km from her location.

geographically proximate brewery can be viewed through the lens of convenience. The participant also cites “capacity” as a key rationalisation in brewery selection.

“Capacity” is an example of a collaboration enabler that is not identified in proximity scholarship (Balland et al., 2022). However, in this case, it is a key determinant of WB1’s brewery selection. If the Tamahere brewery did not have sufficient capacity to brew the participant's beer, then the contract brewing arrangement would not have been possible – regardless of other proximities. The participant would then need to identify another brewery with sufficient “capacity” to facilitate a contract brewing arrangement. This may mean sacrificing his expressed preference for collaborating with a local brewery. In sum, capacity, or lack thereof, may prohibit contract brewing arrangements between otherwise proximate breweries. The identification of capacity as a barrier to collaboration assists in moving forward proximity scholarship (Balland et al., 2022). As such, I expand on the role of capacity throughout this chapter. Nonetheless, when I asked the participant how he had identified the Tamahere brewer as a contracting partner, he indicated that other proximities influenced the arrangement:

“We met over a beer somewhere, and he had told me he had a brewery. I had been out and drunk at this little café, that was the only place you could buy their beer at the time, and loved this porter⁴⁸ that they did.” (WB1:535-538).

The contract brewing arrangement was initiated when the participant and the Tamahere brewer met in person “over a beer”. An in-person interaction was facilitated by the geographic proximity (Feldman & Kogler, 2010) between the participant and the brewer. As I found in the previous chapter, in-person interactions are crucial for the development of social proximity (Balland et al., 2022), which is itself considered essential for enabling inter-firm collaboration (Cassi & Plunket, 2014; Letaifa & Rabeau, 2013). The participant's remarks do not explicitly recognise social proximity between himself and the brewer, but the informality of their interaction “over beer”, speaks to a degree of friendliness between the two. This indicates that social proximity may have been developed during the course of their interaction. The participant’s account also alludes to a favourable perception of cognitive proximity engendering the contract brewing arrangement.

The participant expresses a fondness for the beer produced by the Tamahere brewer. Specifically, he “...loved this porter that they did”. This suggests that the participant has a favourable perception of the brewer's knowledge; or perceived higher cognitive proximity – as I termed it in the previous chapter. Favourable perceptions of cognition can facilitate the development of trust (Mayer et al., 1995; Sánchez de Pablo González del Campo et al., 2014). Meaning if trust did not sufficiently stem from the participant and brewer’s social relationship, it can be supplemented with trust stemming from perceptions of higher cognitive proximity. Without perceived higher cognitive proximity, the contract brewing arrangement

⁴⁸ A well-hopped craft beer, often red in colour. Beers of this style are often characterised by a strong smoky flavour.

would likely have not occurred. This is compounded by my earlier finding that craft brewers are reluctant to engage with other brewers whom they perceive to be cognitively lower. In all, this suggests that geographic proximity alone was ‘insufficient’ (Boschma, 2005) for enabling the contract brewing arrangement. That is not to diminish the role of geography, however, as the participant's favourable perception of the brewer's cognitive ability was based on sampling a beer that was, at that time, only available locally. This is an interesting continuation of a discussion from the previous chapter, where I explained how perceived beer quality informs a perception of a brewer's cognitive ability. If a beer is only available locally, then developing a perception of cognitive proximity depends on geographic, or temporary geographic proximity. This supports my previous contribution, that geographic proximities can facilitate the development of perceived cognitive proximity (Balland et al., 2022). However, these perceptions do not appear especially relevant in cases where social proximity between the contractor and the brewer is strong, as an account from WB4 suggested.

When asked about his experience with contract brewing, WB4 delineated an instance of contracting for another brewery:

“Yes, we’ve two contract beers for a friend of mine that has got a nano-brewery in Coromandel, Kuaotunu, [Coromandel Brewery] (WB4-1: 473-474).

In this arrangement, the participant assumed the brewer role, while his Coromandel-based friend is the contract brewer. The first factor of note is that the participant and contract brewer are geographically distant⁴⁹. However, geographic distance in this case is overcome by social proximity between the two parties. Social proximity is inferred from the participant’s characterisation of the contract brewer as his “friend”. This supports the view that social proximity can enable collaboration (Cassi & Plunket, 2014; Letaifa & Rabeau, 2013), and that friendly, social relationships, promote craft brewery collaboration (Alonso et al., 2018; Cabrera-Flores et al., 2019). This is consistent with my earlier argument that social proximity sustains knowledge-sharing across geographic distances. However, as with knowledge-sharing dynamics, geographic proximities retain relevancy as a precursor and enabler of social proximity. Indications of this are evident in WB4’s explanation as to how he and the contract brewer became friends:

“I knew him from overseas. I came back from overseas, knew him, he had already started his little brewery.” (WB4-1: 485-486).

The participant accounts for developing his social proximity with the contract brewer on a platform of temporary geographic proximity. Meaning temporary geographic proximity facilitated their social proximity (Balland et al., 2022), which subsequently enabled their geographically distant contract brewing arrangement. In other words, temporary geographic proximity was ‘insufficient’ but necessary (Boschma, 2005). Temporary geographic proximity can also be stimulated by contract brewing arrangements.

⁴⁹ 230km

I previously discussed the notion that social proximity encourages instances of temporary geographic proximity, as craft brewers travel and visit fellow brewers. Similarly, contract brewing arrangements can engender platforms of temporary geographic proximity when the contract brewer elects to be physically present for the brewing process. AB1 spoke to this dynamic:

“When usually when you do your first brew for a contract the brewer from the other brewery will come in for the day to see how we do things.” (AB1: 218-221).

Physical attendance at the brewery is not a requisite for contact brewing arrangements. However, as I previously noted, a contract brewer may prefer to attend. In such cases, there are opportunities for the contract brewer and the craft brewer to learn from one another, as AB1 continued:

“During those experiences, we often learn stuff, and they might say ‘we do it this way’ and we’re like ‘oh, we don’t know why we do it this way, we’ve just always done it this way’. Definitely in those moments when people have other ideas.” (AB1: 221-224).

The participant’s account suggests physical attendance at a contract brewing arrangement facilitates the transmission of knowledge, including tacit knowledge (Nonaka, 1991). This is compounded by craft brewery scholarship (Alonso et al., 2018; Kraus et al., 2018) that finds collaborations are a vehicle for craft brewery knowledge-sharing. This also supports my earlier comment that, from a knowledge-sharing perspective, attending collaborations in person may be a superior format when compared to distant interactions. Although, the benefits of physical attendance can only be realised if the contract brewer has the “capacity” to attend.

In a previous account from WB2, time “commitments” prohibited his attendance at contract brewing sessions. This indicates that capacity limitations, namely time, can constrain learning opportunities for craft brewers. Such time limitations are reflected in the broader New Zealand small business environment (Yata & Hurd, 2021), and the Australian craft brewing industry (Alonso et al., 2018). However, the contract brewer’s limited time does not prevent contract brewing – as their attendance is optional. Whereas capacity limitations on the part of the craft brewery can be fatal for a contract brewing arrangement.

For example, WB1’s contract brewing arrangement was able to proceed because the brewery “had the capacity”. Where capacity refers to both time and physical tank space to brew the contracted beer. When capacity is limited, a craft brewer will prioritise brewing their own beer, before accepting any contract brewing. AB7 provided an account of this:

“[Coromandel Brewery]⁵⁰ approached me, and [name] from [Mount Maunganui Brewery] came and poked around here about getting some brews done too, but I had just set-up and I had to get my brews done first.” (AB7: 255-257)

The participant identifies with prioritising his brewing requirements before committing to brew beer for contract brewers. His account highlights the prohibitive effect of a limited brewing capacity on contract

⁵⁰ The same Coromandel brewery mentioned in WB4-1’s account.

brewing. This supports my earlier interpretation that craft brewers can be favourably proximate in all dimensions, but still fail to collaborate due to capacity constraints. Viewed this way, capacity can be considered the most important factor in enabling contract brewing. This is compounded by contrasting AB7's and WB4's accounts of dealing with the Coromandel brewer. I argued that social proximity between WB4 and the Coromandel brewer enabled their contract brewing arrangement. Though, it appears the Coromandel brewer contacted other breweries, seeking to utilise their brewing capacity. This suggests that the Coromandel brewer's priority was to target breweries with sufficient brewing capacity, rather than brewers he is socially proximate with. Due to this, I argue that capacity is deserving of recognition in proximity scholarship (Balland et al., 2015; Balland et al., 2022), which has thus far failed to account for its role. A second account of contract brewing from AB7 provides further support for the introduction of capacity into the proximity framework:

"They were mostly, always driven by [name], so [name] didn't have the hardware, and he didn't want to spit out 5,000 litres of something from Steam, so he would come to me when I was running [AB2 Brewery], then we brewed one up here to get a smaller batch done. So, we could do something fun and quirky, and he didn't have to worry about selling 5,000 litres of it." (AB7: 229-232).

The participant accounts for a completed contract brewing arrangement with the representative of an Auckland-based contract brewing company. The participant indicates that the contract brewing arrangement came about because he was reluctant to brew with *Steam*⁵¹, due to their minimum volume requirements. Instead, he sought to contract with the participant, whose production limits were more suited to his needs. Serendipitously, the participant, at that time, had sufficient brewing capacity to produce the beer for him. Therefore, the contract brewing arrangement was able to proceed. In this sense, the participant and the contract brewer can be considered proximate in terms of the brewing capacity available, and the brewing capacity required. This gives rise to the view that capacity proximity reflects a ninth proximity dimension. In the next section, I discuss succinct cases of collaboration brewing, and further develop the notion of capacity proximity.

Collaboration Brewing through a Proximity Lens

Collaboration brewing is distinct from contracting in that it does not involve the exchange of funds between brewers. Instead, craft breweries collaborate on beer production (Kraus et al., 2018) and share the revenue generated from its sale. Collaborating craft breweries, therefore, share credit for the beer, and this appears to render proximity dynamics more significant in enabling collaboration brewing. I explore this idea by presenting three succinct cases of collaboration brewing between New Zealand-based craft breweries. Of these cases, two are geographically distant accounts of collaboration, and one is proximate. Each case represents a different selection of proximities contributing to the collaboration. In each case, I

⁵¹ *Steam* are a large brewery located in Auckland. Primarily they provide contract brewing services for contract brewers. They have a minimum brewing requirement of 5,000 litres.

identify evident proximities, discuss their role, and connect these to the role of geographic proximity. The first case relates to a collaboration between WB1 and TB4, referred to as the Hamilton-Motueka collaboration.

Hamilton-Motueka Collaboration

As a reminder from Chapter Five, participants WB1 and TB4 were documented as having developed social proximity across geographic distances when they serendipitously met on a platform of temporary geographic proximity (*Beervana*). Stemming from that social proximity, the two participants maintain regular contact and occasionally visit one another. As WB1 recounted, this relationship has also produced a collaboration beer:

“TB4 has a beer out to this day called [beer name], which was my...he’s never backed himself when he writes anything, but old school English style recipes and he got an invitation to enter the West Coast IPA challenge, so he rang me up and said: [WB1] can you do me a West Coast IPA entry? So, I wrote him a recipe that was just like some stuff we had been tasting in the states. And he entered it and named it after me.” (WB1: 728-432).

The participants’ geographically distant collaboration was enabled by two factors. The first is social proximity’. The participants’ have been socially proximate since their interaction at *Beervana*. Social proximity represents trust-based relationships (Boschma, 2005). Trust is considered essential for small business collaboration in New Zealand (Yata & Hurd, 2021), and in craft brewery collaboration (Alonso et al., 2018; Cabrera-Flores et al., 2019; Lotfi et al., 2021). Additionally, in the New Zealand setting, NB1 supports the significance of social proximity, stating that in a collaboration “...we’d have to be friends...that’s how that works. I mean for me it always begins there.” (NB1:213). In all, this supports the view that social proximity enabled the collaboration. The second factor relates to the type of knowledge shared in the collaboration. WB1 provided codified knowledge to TB4 in the form of a beer recipe. The transmutability of this kind of knowledge mitigates any requirement for in-person interaction (Nonaka, 1991). By extension, the collaboration did not directly require geographic, or temporary geographic, proximity. However, social proximity alone did not engender the collaboration. Instead, a perception of cognitive distance motivated TB4 to contact WB1.

Perceived higher cognitive proximity is detected in the Hamilton-Motueka collaboration. Specifically, TB4 wanted to create a West Coast IPA⁵² but lacked the relevant knowledge to do so. Believing that WB1 had the requisite knowledge for brewing the style, TB4 reached out to him. This suggests collaboration brewing in New Zealand is encouraged by perceived higher cognitive proximity. This is supported by proximity scholarship (Balland et al., 2022; Balland et al., 2013) that argues cognitive distance stimulates inter-firm collaboration. In support, WB3 stated, when asked who he would collaborate with: “It’d have to be someone who’s got something different to what we have got.” (WB3:198). He indicates a potential

⁵² An IPA style beer with strong hop aromas, bitter taste, and citrus/pine notes.

collaboration partner must make a distinct contribution, for a collaboration to be worthwhile. This means that the participant (WB3) must perceive a potential collaborator to be cognitively higher in some respect. This reflects an interesting scenario between craft brewers with disparate levels of brewing experience and differing perceptions of cognitive proximity.

For example, when asked who he would collaborate with WB2 stated he “*would probably want to collaborate with somebody who is a lot better than you – which is probably most of them to be fair.*” (WB2: 304-305). Similar to WB3, the participant alludes to seeking collaborations with partners whom he perceives to be cognitively higher. Collaborating with cognitively higher brewers would allow the participant to access new knowledge (Kraus et al., 2018). But it would also allow the participant to associate his brewery with one that is “a lot better”. This would likely enhance the credibility and legitimacy (Yata & Hurd, 2021) of his brewery. However, aware of this, more experienced brewers, such as NB1, expressed a reluctance to collaborate with certain brewers:

“A lot of young new breweries coming in who want to jump on the wagon and put our brand on their logo. And they might not come right out and say that, but that’s what they want.” (NB1: 203-204).

The participant is averse to collaboration brewing with “new breweries” because he believes they view collaboration as a mechanism for deriving credibility and legitimacy (Yata & Hurd, 2021). Furthermore, his characterisation of these breweries as “young” indicates that he perceives them to be cognitively lower. This means he does not believe that he can learn anything from these breweries. In all, this indicates the participant considers any hypothetical collaboration with a ‘new brewery’ to be inequitable. This is supported by craft brewery scholarship in the Australian setting (Alonso et al., 2018), which finds collaborations can be stifled by perceptions of inequity. In other words, a perception of lower cognitive proximity can prohibit collaboration (Balland et al., 2022). For the Hamilton-Motueka collaboration, the implication is that a perception of lower cognitive proximity would have prevented TB4 from contacting WB1. Altogether, the Hamilton-Motueka collaboration was enabled by a combination of perceived higher cognitive proximity and social proximity, facilitated by an instance of temporary geographic proximity. Temporary geographic proximity assumed an additional role in this case.

The participant (WB1) noted that he was able to collaborate with TB4 because he had acquired the requisite brewing knowledge (for *West Coast IPA* styles) when travelling in the USA. This suggests that knowledge obtained on overseas platforms of temporary geographic proximity can sustain collaboration brewing in the New Zealand setting. It also supports my earlier argument that knowledge diffusion (Lengyel et al., 2020) can occur across geographic distances via temporary platforms. I continue by discussing the second case, which represents an instance of collaboration brewing between geographically proximate brewers in Dunedin.

Dunedin Collaboration

Despite being operationalised in geographic proximity; enablers of the Dunedin collaboration were similar to the Hamilton-Motueka collaboration. Providing his account of the collaboration, DB1 stated:

“Last week I did a collaboration beer with the guys at [DB2], and whilst I’ve been in there a lot of times, it was the first time I’ve been shown around the brewery and got an insight into how they work.” (DB1: 225-227)

The first proximity of note is geographic. Due to the physical closeness between the two breweries, DB1 was aware of DB2 before the collaboration. He had been able to visit the brewery and sample their beer, allowing him to develop a perception of cognitive proximity. While geographic proximity enabled DB1 to develop a perception of DB2, it was independently ‘insufficient’ (Boschma, 2005) to grant him access to “insight”. Instead, “insight” was obtained once the collaboration had been initiated. Continued remarks from DB1 provide insight into the other proximities that enabled the collaboration:

“They [DB2] rung and said they were keen to make a stout. The brewer there, he was pretty open he said that he hadn’t made many stouts before. He worked in massive breweries in Australia you know really intelligent and good brewer, so he pieced together a recipe, talked about the types of style we were gonna do, erm...he said that I’ll put a recipe down and see what we can do.” (DB1: 332-335).

DB2 initiated contact with DB1 regarding the collaboration because he was “keen to make a stout” but did not know how. Similar to the Hamilton-Motueka collaboration, the Dunedin collaboration was motivated by a perception of higher cognitive proximity (Balland et al., 2022). Specifically, regarding the knowledge required for making a stout. Concurrently, DB1 characterised DB2 as a “really intelligent and good brewer”, suggesting he does not perceive him to be cognitively lower. If the participant did consider DB2 cognitively lower, he may have viewed the collaboration as inequitable (Alonso et al., 2018), as previously described by NB1. In other words, the participants’ (DB1 and DB2) perceptions of cognitive proximity were favourable to the collaboration. Similar to DB1, DB2’s perception was also facilitated by geographic proximity.

In DB2’s account, he explains that he contacted DB1 because “[DB1] is well known for his stouts”. DB1 exclusively sells his beer in kegs locally. Meaning the only way DB2 could have developed a perception of DB1’s stouts is by visiting his brewery or another local outlet. This is similar to WB1’s account of contract brewing, delineated earlier in this chapter, where developing a perception of cognitive proximity was dependent on geographic, or temporary geographic proximity. In other words, geographic proximity was essential (Boschma, 2005) for developing the perception of higher cognitive ability that engendered the collaboration. Furthermore, geographic proximity assumed a direct role in facilitating a serendipitous interaction between the participants.

When asked how he first met DB2, DB1 explained:

“I ran out of some caustic, and so we asked if we could come down and load a container so we can keep going for the next couple of days. So, they said, yeah pop down, and then we started talking about it [the collaboration].” (DB1: 317-319)

As I found in the previous chapter, in-person interactions between geographically proximate craft brewers are stimulated when a brewer runs out of brewing ingredients. This is reflected in the Dunedin collaboration. DB1 was in urgent need of caustic⁵³, and this urgency prompted him to contact a geographically proximate brewery to acquire some. This interaction led to a dialogue between the participants, where the idea of a collaboration was first raised. This suggests that serendipitous interactions on platforms of geographic proximity (Feldman & Kogler, 2010) can provide an opportunity for a collaboration to be initiated. I have previously argued that the value of these in-person interactions is that they facilitate social proximity (Balland et al., 2022). Neither participant explicitly identified as being friends, but the completion of their collaboration suggests their interactions were sufficiently positive to develop the social proximity required (Cassi & Plunket, 2014; Letaifa & Rabeau, 2013) to proceed with it. Next, I discuss the third case of collaboration brewing. This case is a collaboration between geographically distant breweries, it is presented because it exhibits the role of micro-institutional proximity.

Northland-Auckland Collaboration

Before examining this case, I note that the participant (NB1) was reluctant to provide specifics of breweries he had previously worked with. For example, when I asked about his interactions with other brewers he responded: *“Well, there’s a few guys that I talk to...but does that matter?”* (NB1:138). Instead of providing specific accounts, the participant favoured providing hypothetical responses. However, I did successfully press the participant for a specific example, after questioning his conjecture. Initially, the participant advises his ‘rule’ for collaboration brewing:

“Rule 1 it always has to be for charity. I don’t do collaborations with anybody unless it’s for charity. Because otherwise what’s the benefit.” (NB1: 190-191).

The participant’s rule that collaboration brewing must be for charity reflects a personally held value. Personally held values represent a micro-institutional dimension of NB1. This means to collaborate with NB1, a craft brewery must also hold this value, or at least adhere to it for the purposes of collaborating. In other words, micro-institutional proximity is a requisite for collaborating with NB1. After probing, the participant revealed an instance of collaborating with another brewery for charity:

“[Auckland Brewery] have been a fan of ours and we’ve been working closely with them the last few years, and we just did one for Prostate Cancer NZ. And that is good because we’re friends already, so let’s make some beer together.” (NB1: 217-219).

Consistent with his initial remarks, the participant’s collaboration with an Auckland-based brewery, was based on a charitable contribution. This suggests the Northland-Auckland collaboration was motivated by

⁵³ A chemical compound used in the sterilisation of brewing equipment.

converging personally held values, otherwise known as micro-institutional proximity (Boschma, 2005). The participant's 'rule' that collaboration brewing must be for charity is an aberration in the data. This is likely because the participant does not recognise any other "benefit" from collaboration brewing. It also reveals that personally held values can prohibit or stimulate instances of collaboration brewing. In isolation, however, micro-institutional proximity did not sustain the collaboration.

The participant notes that he and the Auckland brewer are "friends" and have prior experience working together. These elements point toward social proximity (Boschma, 2005). As discussed, characteristics of social proximity, such as trust, and friendship are important enablers of small business collaboration in New Zealand (Yata & Hurd, 2021) and craft brewery collaboration (Cunningham & Barclay, 2020). This indicates that a combination of social and micro-institutional proximity was required to enable the collaboration. There are no obvious indicators as to the role of geographic proximity in this account. The participant could not recall when or how he had met the Auckland brewer, but based on other accounts discussed in this chapter, the ignition of their social proximity likely occurred on a platform of temporary geographic proximity. The three cases discussed in this chapter reveal the proximity enablers of collaboration, but do not reveal why these collaborations occurred. I posit that organisational proximity rationalises collaboration brewing.

Organisational Proximity and Collaboration Brewing

In two of the outlined cases in this section, collaboration brewing was motivated by a desire to produce a new product. For TB4 the new product was a variation of the *West Coast IPA*, and for DB2 the product was a *stout* beer. These beer styles are not entirely new. However, they are subjectively new to the breweries in question. Meaning they represent innovation (Van de Ven, 1986). Furthermore, the novel composition of breweries involved in production (WB1+TB4 and DB1+DB2), means that these beers can be communicated as *innovative* to craft beer consumers. This suggests craft breweries shared requirement to be viewed as innovative, rationalises collaboration brewing. As discussed in the previous chapter, this shared requirement represents a dimension of organisational proximity. The third collaboration case was seemingly motivated by a charitable donation. Other rationalisations, such as legitimacy (Suchman, 1995) may have motivated the collaboration. But there is insufficient data to support this interpretation. I continue by discussing the role of capacity in collaboration brewing.

Capacity Proximity and Collaboration Brewing

The three accounts of collaboration brewing discussed in this section are all examples of collaborations that were completed. I did not detect an account of collaboration brewing between New Zealand craft breweries that had been initiated but failed to materialise. However, participants provided rationales as to why they declined to collaborate when propositioned by another brewer. A lack of brewing capacity emerged as a reason for refusal. For instance, when asked if he had engaged in any collaboration brewing, TB2 stated:

“We haven’t, but it’s because we don’t have the time for it, the time and the tanks.”
(TB2:155).

This response could be interpreted as the participant being unwilling to work with, or support, other craft brewers. However, TB2 is described as helpful and willing to share knowledge by another participant (TB4), contradicting this interpretation. Instead, the participant (TB2) implied that he would engage in collaboration brewing, were it not for the lack of available time and brewing capacity. Supporting this, time and capacity limitations are found to prohibit collaboration in the Australian craft brewing industry (Alonso et al., 2018). A similar sentiment was reflected in remarks from TB4 when discussing collaboration brewing: *“It’d be more of a case of really mate, nice offer, but I’m too busy.”* (TB4: 193-194).

Again, the participant indicates that he lacks the time required for collaboration brewing. This weighs significantly on the proximity framework (Boschma, 2005) because other proximity dimensions cannot enable a collaboration when craft brewers have insufficient capacity. In other words, a lack of capacity alone can derail a collaboration. This supports my proposition that capacity proximity should be incorporated as the ninth proximity dimension and considered in future works that examine collaboration via a proximity lens. I proceed to discuss cases of international craft brewery collaboration, where triadic proximity is prevalent.

International Collaboration Brewing

By their nature, international collaboration brewing arrangements occur across considerable geographic distances. As such, instances of international collaboration are especially interesting in responding to this chapter’s research question. Furthermore, they represent an opportunity to examine proximity dynamics in an international setting (Balland et al., 2015; Balland et al., 2022; Boschma, 2005). In this section, I discuss four cases of collaboration between New Zealand-based participants and international craft breweries. Reflecting on the prior section, I delineate each case, identify proximity dimensions, and discuss how the role of geographic proximity has influenced the collaboration. The first case involves a collaboration between AB1 and a San Diego-based craft brewery. This is referred to as the Auckland-San Diego collaboration.

Auckland-San Diego Collaboration

Providing his account of the collaboration, AB1 stated:

*“One was [**Brewery name**]⁵⁴ out of San Diego, which is huge and like a real legendary brewery in the craft beer world. And that was purely because one of their brewers was coming over for a symposium down in Wellington. And it was timed in with the hop harvest season because the Americans come over and want to see and select their own*

⁵⁴ The largest brewery in Southern California, and the ninth largest brewery in the USA based on sales volume. (“Brewers Association Releases the Top 50 Brewing Companies by Sales Volume for 2020,” 2021).

hops as they are being harvested. And so, he was over for that and then a friend of a friend said that you should do a collaboration brew, and so he came in and we brewed together that day and yeah, had a bit of fun.” (AB1:171-177).

The participant alluded to his perception of the San Diego brewer’s cognitive ability. His characterisation of the brewery as “huge” and “legendary” indicates that he perceives the brewer to be cognitively higher. This perception encouraged the participant to engage in the collaboration for two reasons. First, collaborating with the San Diego brewer presented significant learning opportunities. This is a sound rationalisation, as the same participant stated previously (when discussing contract brewing) that collaborations are a powerful vehicle for acquiring brewing knowledge. This is supported by craft brewing scholarship (Kraus et al., 2018). Secondly, the participant can benefit from the credibility and legitimacy (Yata & Hurd, 2021) associated with partnering with a brewery of international acclaim. Based on previous accounts of collaboration discussed in this chapter, had the participant not perceived the San Diego brewer to be cognitively higher, then these rationalisations for collaboration would have been diminished. This continues to support the argument that cognitive distance enables collaboration (Balland et al., 2022). Comparable with other cases of collaboration, perceptions of cognition were independently insufficient. The collaboration would not have been possible had the San Diego brewer not been in New Zealand at the time.

The San Diego brewer’s presence in New Zealand represents an instance of temporary geographic proximity between himself and the participant. This created an opportunity for the participant and the brewer to meet in person. However, unlike the Hamilton-Motueka or Dunedin collaboration, the in-person interaction between brewers did not occur serendipitously (Feldman & Kogler, 2010). Instead, triadic proximity stimulated an in-person interaction.

One contribution to knowledge in the previous chapter was triadic proximity. I argued that triadic proximity acts as a precursor to an interaction between geographically distant craft brewers. It assumed a similar role in enabling this collaboration. The participant described being introduced to the San Diego brewer by a “*friend of a friend*”, and the same person encouraged the collaboration. This means despite temporary geographic proximity between the participant and brewer in New Zealand, their in-person meeting and collaboration would not have occurred had it not been for triadic proximity. Triadic closure scholarship (Ter Wal, 2013) supports this, suggesting the likelihood of collaboration is increased when potential collaborators share a mutual connection. Altogether, this suggests that the Auckland-San Diego collaboration was enabled by perceived higher cognition, temporary geographic proximity, and triadic proximity. Social proximity is notably absent from this case.

The participant’s characterisation of the collaboration as “fun” indicates that a degree of social proximity was developed while brewing. There is no evidence that social proximity existed before the collaboration. Proximity scholarship (Cassi & Plunket, 2014; Letaifa & Rabeau, 2013) argues that social proximity is vital to a successful collaboration. Similarly, central tenets of social proximity, trust, and friendship, are

considered essential in small business collaboration (Yata & Hurd, 2021) and craft brewery collaboration (Alonso et al., 2018). This case contributes to that line of thought by suggesting trust in this collaboration emanated from another source. Specifically, the participant's perception of the San Diego brewer's cognitive abilities. Positive perceptions of another brewer's reputation and capabilities are found to enable craft brewery collaborations in the Welsh setting (Lotfi et al., 2021). This indicates the need for social proximity can be circumvented by perceptions of higher cognition since both proximities can act as a source of trust. This circumvention is also supported by triadic proximity. I further elucidate the role of this proximity in the next case: the Hamilton-Gothenburg collaboration.

Hamilton-Gothenburg Collaboration

WB1 explained that he had been involved in a series of collaborations with a Swedish craft brewery:

“We’ve done a couple of other collabs with a Swedish brewery called [brewery name] in Sweden, and that just came about through one of our shareholders whose wife is Swedish, so he’s over there a lot. He imports Swedish beer, and he set us up with them.” (WB1: 451-453).

Akin to the Auckland-San Diego collaboration, the Hamilton-Gothenburg collaboration was initiated by triadic proximity, represented by the “shareholder”. This implies that the collaboration would not have occurred, had the participant and the Swedish brewer not been triadically proximate, supporting my argument that the role of triadic proximity is to facilitate collaboration brewing between distantly located craft breweries. Although, it was independently insufficient for the collaboration, as WB1 continued:

“They came over to the brewery, we put together a recipe that was inspired by a beer that they made called Marmalade and called it Kiwi Marmalade and tried to get the same marmalade characters but out of NZ hops, and other than that there was nothing similar about the beers.” (WB1: 453-456).

Despite the considerable geographic distance between WB1 and the Swedish brewer, the collaboration was conducted in person. This suggests triadic proximity, as it does in instances of knowledge-sharing, acts as a precursor that stimulates in-person interaction. In other words, triadic proximity can lead to temporary geographic proximity. Temporary geographic proximity in this case allowed the collaborators to meet face-to-face and develop their beer recipes. In-person interactions on temporary geographic platforms can facilitate social proximity (Torre, 2008). There is no evidence of social proximity before the collaboration, but the participant continued by stating: *“when we met them, we got one really well, so it was this feels good now”* (WB1: 476), indicating that social proximity was developed during the course of the collaboration. However, as social proximity did not exist before the collaboration, it cannot be credited for its initiation.

Further remarks from the participant support the role of triadic proximity: *“I didn’t really want to do the [Swedish brewery] one, it was [Shareholder] pushing that”*. The participant recognised if it were not for his shared connection with the Swedish brewer the collaboration would not have occurred, suggesting triadic proximity was independently responsible for initiating the collaboration. This is compounded by

the participant's lack of commentary regarding the capabilities or reputation of the Swedish brewery. Instead of having a perception of the Swedish brewer's cognitive proximity, the participant relied on the shareholder's perception. Consequently, this collaboration relied on a combination of triadic and temporary geographic proximity. The importance of temporary geographic proximity in this arrangement is reflected in an account of a failed collaboration between WB3 and a Honolulu-based brewery.

Hamilton-Honolulu Collaboration

In a brief account of a failed collaboration, participant WB3 explained that he intended to collaborate with a brewery in Hawaii. The participant wanted to conduct the collaboration in person but was unable to due to COVID-19-related travel restrictions. Consequently, the collaboration did not go ahead:

“We were going to do one with a Hawaiian brewery, pre-COVID – all booked to go to Hawaii, and they were going to do a beer with us, so probably more international breweries than local ones.” (WB3:170-172).

The expressed preference to collaborate with “more international breweries” suggests the participant believes international collaborations are more beneficial than local ones (New Zealand-wide). The participant's perception is supported by scholarship (Broekel & Boschma, 2017) that finds innovation performance is enhanced when firms engage with geographically distant sources of knowledge. This occurs because there is less novel knowledge that can be obtained from local sources over time (Belderbos et al., 2021). In other words, the participant does not view local brewers to be cognitively higher. Therefore, he seeks interactions with cognitively higher overseas brewers. In sum, this suggests the collaboration was motivated by a desire to acquire knowledge from the Hawaiian brewer. Yet, perceived higher cognition alone did not stimulate the collaboration.

The participant advised that he was put into contact with the Hawaiian brewery through “*Someone we knew, knew them. It was a contact.*” (WB3: 174). Again, this case speaks to the ability of triadic proximity to stimulate international craft brewery collaborations. The participant's intention to visit the Hawaii brewer in person also supports my earlier argument that triadic proximity encourages temporary geographic proximity. However, an inability to meet on a platform of temporary geographic proximity prevented the collaboration from going ahead. Meaning, in this case, perceived higher cognition and triadic proximity were insufficient to sustain the collaboration. The centrality of temporary geographic proximity here can be explained by trust.

Nilsson and Mattes (2015) argue that face-to-face interaction is essential for the development of trust. This indicates that the participant did not sufficiently trust the Hawaiian brewer, despite his favourable cognitive perception (Lotfi et al., 2021), to conduct the collaboration remotely. Furthermore, conducting the collaboration remotely would have limited the participant's capacity to acquire new knowledge (Feldman & Kogler, 2010) from the Hawaiian brewer. Therefore, defeating the purpose of the collaboration, for the participant. Temporary geographic proximity is not essential in all cases of international craft brewery collaboration, as the Auckland-Sydney collaboration indicates.

Auckland-Sydney Collaboration

Participant AB3 provided an account of collaboration with a Sydney-based craft brewery where neither forms of geographic proximity are evident. When asked how the collaboration was initiated the participant noted:

“We went and canvassed other distributors and decided to go with them in the end. And then, down the track they said, ‘do you want to do a collab with [Sydney Brewery]?’” (AB3: 220-222).

The collaboration was encouraged by the participant’s Australian distributor, who also acted as the distributor for the Sydney brewery. In this case, the distributor is the embodiment of triadic proximity. Consistent with other accounts of international collaboration, triadic proximity severed as a precursor, stimulating the collaboration. Unlike other accounts of international collaboration, triadic proximity was not followed by temporary geographic proximity. Instead, the entire collaboration was conducted at distance, as AB3 explained:

“Their head brewer talked and came up with the recipe with us, and we...and it was pretty much brewed in NZ, but we shipped it to Australia.” (AB3:228-229).

The participant had never met the Sydney brewer, nor intended to meet him for the collaboration. This means social proximity was absent from the collaboration. Based on this, I asked the participant where the trust between himself and the Sydney brewer came from. Responding, AB3 noted there was a level of *“trust that we aren’t gonna screw up their batch”* (AB3: 234). That perceived trust was based on the Sydney brewer's prior experience with the participant’s beer:

“They knew our product because they had shared ownership with the people who import our product into Australia – so they knew what we were making.” (AB3: 232-234)

This is a value judgement of the Sydney brewer from the participant. But it indicates the Sydney brewer has a favourable perception of the participant’s reputation and capabilities. This perception is sufficiently favourable for the Sydney brewer to trust (Mayer et al., 1995; Sánchez de Pablo González del Campo et al., 2014) the participant. Craft brewer capabilities and reputation are key collaboration enablers in other craft brewing settings (Lotfi et al., 2021). In other words, the Sydney brewers favourable perceptions of the participant allowed the collaboration to proceed. This is significant because these perceptions are a proxy for perceived cognitive proximity, thereby supporting my previous argument that perceived cognitive proximity acts as a source of trust. In this case, trust is sufficiently strong that it circumvents any requirement for social proximity or an in-person meeting. It could be argued that trust was not required on part of the participant, as he was responsible for brewing the beer. However, he also expressed familiarity with the Sydney brewer: *“I had been to their brewery, erm. Drunk their beer, but that’s about it.”* (AB3: 224).

This means the participant had an opportunity to sample the Sydney brewer’s beer and develop a perception of their cognitive proximity. Had this perception been unfavourable, it seems unlikely the

collaboration would have progressed. However, the participant would not have been able to develop this perception had he not previously travelled to Sydney to visit the brewery. Supporting my earlier observation that temporary geographic proximity facilitates perceptions of cognitive proximity. Motivations for this collaboration, beyond the distributor's encouragement are unclear. However, international collaborations in New Zealand small businesses are associated with deriving legitimacy and credibility (Yata & Hurd, 2021). This suggests this collaboration was motivated by attaining legitimacy (Suchman, 1995) in overseas beer markets. The Auckland brewery in Australia and the Sydney brewer in New Zealand. I discuss the final series of cases, concerned with inter-industry collaboration.

Inter-Industry Collaboration

By their nature, inter-industry collaborations occur in different organisational contexts. Meaning the cases of collaboration in this section reflect a degree of organisational distance. They, therefore, represent an interesting contribution to understanding proximity dynamics where organisational proximity is weakened. In this section, I delineate five cases of inter-industry collaboration. I identify evident proximities and discuss their role in relation to geographic proximity. The first account reflects a collaboration between an Auckland brewer (AB1) and an Auckland-based soft drink manufacturer, referred to as the craft brewery-soft drink collaboration.

Craft Brewery - Soft Drink Collaboration

Accounting for his collaboration with the soft drink manufacturer, AB1 stated:

“We did a collaboration with [local soft drinks company], who have a lemonade, and so we did a shandy. It had a small can of pilsner and a small can of lemonade with their brand and our brand together.” (AB1: 153-155)

The participant collaborated with the manufacturer to produce a shandy – a drink made of pilsner and lemonade. The participant's brewery produced the pilsner, and the manufacturer produced the accompanying lemonade. The two items were then packaged together. The collaborators, in this case, are respective specialists in beer and soft drink production. Their collaboration is a result of combining their disparate knowledge in the production of a new product. Therefore, this collaboration is an indication of cognitive distance promoting a collaboration (Balland et al., 2022). However, shandy-making is not a significant departure from brewing. Meaning the participant would likely have been able to produce a shandy without collaborating with the soft drink manufacturer. This indicates the shandy product itself was not the motivation for the collaboration. Instead, as the participant stated, the driver for the collaboration is brand alignment.

The soft drink manufacturer can be described as small and antithetical to large soft drink producers ("Karma Drinks," 2021). This alludes to a similarity with the values craft brewers identify with when defining a craft brewery. Converging organisational values are indicative of organisational proximity (Gilly & Torre, 2000). Therefore, there is a degree of organisational proximity between the participant

and the manufacturer. This assists in the explanation as to why the participant sought to align his brand with the soft drink producer.

Just as small businesses in New Zealand attain credibility and legitimacy by collaborating with international firms (Yata & Hurd, 2021), the participant can attain legitimacy (Suchman, 1995) in the soft drink market by aligning with an established soft drink brand. Consequently, consumers of the soft drink brand may gravitate towards the participant's brewery when purchasing beer. This represents a growing market share for the participant and is a clear motivation for the collaboration. Yet, this does not explain how the collaboration was initiated.

Both participant and soft drinks manufacturer are Auckland-based. Their geographic proximity led to a serendipitous in-person interaction, as the participant described:

"I think we just bumped into them, maybe they were delivering, and said to them that I had an idea for a collaboration. So, they came, and we had a meeting." (AB1: 164-166).

Despite the favourable conditions emerging from organisational proximity and cognitive distance, if it were not for geographic proximity, the serendipitous interaction would not have occurred. This suggests geographic proximity heightens the opportunity for inter-industry collaboration by facilitating happenstance in-person interactions. Geographic proximity assumed a similar role in all accounts of inter-industry collaboration detected in this research. I continue by discussing AB1's collaboration with an Auckland winery.

Craft Brewery - Winery Collaboration

Accounting for a collaboration with the Auckland winery, AB1 stated:

"[Auckland Winery] got in touch with us because they had seen our brand around and they thought it'd be a good collaboration because we have a lot to do with living in Auckland city and living in an urban space. We name our beers after suburbs, and [Auckland Winery] kind of similar, they are based on New York." (AB: 166-169)

In one sense, the brewery and the winery can be considered organisationally distant. They operate in disparate markets and produce different products. Even so, there are semblances of some organisational proximity between the two. For example, the Auckland winery describes itself as having associations with 'boutique' vineyards ("Our Ethos," 2022). 'Boutique' can be considered a proxy for small and can be considered similar to craft breweries in that regard. Furthermore, both organisations produce alcoholic drinks at the higher end of the market and, as the participant indicates, reflect similar branding. Therefore, an extent of organisational proximity exists between the two. This collaboration was initiated by the winery, and without their account, it is difficult to establish their motivations for the collaboration. As with the soft drink collaboration, however, an alignment of these brands may lead to legitimacy (Suchman, 1995) in different consumer markets. The winery in the beer market, and the brewery in the wine market. Again, geographic proximity appears to have enabled this collaboration.

For the winery to recognise the degree of organisational proximity it shared with the brewery, it must have been exposed to its brand. As the participant noted: *“they had seen our brand around”*. This indicates that geographic proximity assists in the identification of characteristics of organisational proximity, which in turn supports the enablement of the collaboration. Similar indications of organisational proximity are evident in a case of collaboration between a Tasman Bay craft brewery and a local confectioner.

Craft Brewery – Confectioner Collaboration

Participant TB1-1 advised that their collaboration strategy was concerned with *“...aligning with businesses with a similar culture and similar organisations.”* (TB1-1: 283-284). Speaking to an example of this, the participant noted:

“One example is we’re going to collaborate with a boutique handcrafted ice-block for summer, and obviously that isn’t going to equal litres and litres for us, but it’s a nice little local business that sits well with us.” (TB1-1: 284-286).

The participant describes the confectioner as “boutique” and “handcrafted”. These terms are synonymous with the identifiers used by craft brewers to define a craft brewery. This indicates that the participant perceives some organisational proximity between themselves and the confectioner. As in AB1’s cases of inter-industry collaboration, this suggests that collaborating with the confectioner is linked to attaining credibility and legitimacy (Yata & Hurd, 2021) in disparate markets. The participant also emphasises locality in her remarks. Similar to the winery collaboration, geographic proximity to the confectioner likely permitted awareness of the confectioner, and recognition of the degree of organisational proximity shared. This supports my argument that geographic proximity permits awareness of dimensions of organisational proximity. Like the soft drink and winery collaborations, evidence of social proximity is notably absent from this case. This indicates that social proximity is not required in inter-industry collaborations (Balland et al., 2022), and the extent of organisational proximity is a sufficient replacement. Yet, as the next case demonstrates, social proximity can also enable inter-industry collaboration.

Craft Brewery - Festival Collaboration

During our interview, WB1 explained that he was in the process of brewing a beer for a local women’s organisation that was due to host a festival:

“I’ve got a contract brew in the tank right now, which is a brew we’re doing for a local female-oriented festival called Grrrrl fest. Don’t even ask the name is horrible – Glyn’s a mate and she asked if we could do it.” (WB1: 498-500).

The participant characterises the event organiser as a “mate”, signifying a shared degree of social proximity. The participant continues, implying that if the organiser were not a “mate” he may not have been inclined to brew beer for them. But also, if it were not for their social relationship, the organiser may never have approached the participant. In all, this supports the view that social proximity enables inter-industry collaboration (Cassi & Plunket, 2014; Letaifa & Rabeau, 2013). The role of geographic proximity, in this case, is ‘most likely’ (Balland et al., 2022) as a latent enabler of social proximity. Furthermore, cognitive distance necessitated the collaboration, Specifically, the event organiser wanted a

beer produced for her festival but did not know how to make one, nor have the requisite technology. Hence, she enlisted the disparate knowledge of the participant. Again, this supports the view that cognitive distance promotes inter-firm collaboration (Balland et al., 2022). Understanding the role of perceived cognitive proximity in inter-industry collaboration is expanded in the next case.

Craft Brewery-Whiskey Distillery Collaboration

AB6 delineated an ongoing collaboration with a nearby whiskey distillery, he explained:

“Yep, so whisky is effectively unhoped beer. You make it from malt and water, and you chuck it in a fermenter and add some yeast – to do that you need a brewhouse. So, we make is wort for him, he ferments it in his own fermenters, and what comes off the fermenters he runs through the still and distils that down to raw spirits which he then barrel-ages in whisky barrels to make his whisky.” (AB6: 128-132)

The participant highlights and explains the similarities in the knowledge required for brewing and distilling whiskey. From his remarks, the participant believes that the brewer and distiller are likewise capable of producing both beer and whiskey. Suggesting the participant and the distiller are cognitively proximate. According to proximity scholarship (Balland et al., 2022), such cognitive proximity would render a collaboration unnecessary. However, as the participant indicates, the whisky distiller does not have a “brewhouse” to produce the base of his whiskey (wort). This means that the collaborators are cognitively distant, not in knowledge, but with the technology at their disposal. As such, the collaboration was born out of necessity on the part of the distiller. A degree of organisational proximity is likely applicable here, given that the collaborators operate in similar markets. However, the participant's remarks do not speak to its influence. Finally, the collaborators are geographically proximate (both located in Riverhead, Auckland), but the influence of geographic proximity is unclear. The collaboration pre-dates the participant's tenure as the brewery manager. However, geographic proximity is logistically beneficial (Feldman & Kogler, 2010) for the delivery of the wort to the distillery, and this was likely a consideration made by the distiller when seeking a collaboration partner. Having discussed all types of collaboration mentioned by the participants, I present each collaboration modality in Table 25 to summarise the key findings of this chapter. Adjacent I present the proximities evident in those modalities, explain their role, and highlight their association to geographic (including temporary) proximity.

Proximity Dimensions in Collaboration Modalities

Table 25 - Proximity Dimensions in Different Collaboration Modalities

Collaboration Modality	Evident Proximities	Proximity Roles	Relationship to Geographic Proximity
Contract Brewing	Geographic Proximity	Enables in-person engagement with contract brewing. Permits the development of social proximity before contract brewing.	No relationship evident
	Temporary Geographic Proximity	Enables in-person engagement with contract brewing. Permits the development of social proximity before contract brewing.	No relationship evident

	Social Proximity	Enables trust in the contract brewing arrangement.	Developed on platforms of geographic and temporary geographic proximity.
	Perceived Cognitive Proximity	Enables trust in the contract brewing arrangement.	Developing perceptions of cognition can depend on geographic and temporary geographic proximity.
	Capacity Proximity	Craft brewers must have sufficient capacity to match the production requirements of a contract brewer.	No relationship evident
NZ-Based Collaboration Brewing	Geographic Proximity	Enables in-person engagement with collaboration brewing. Permits the development of social proximity before collaboration brewing. Also promotes serendipitous interaction between potential collaborators.	No relationship evident
	Temporary Geographic Proximity	Enables in-person engagement with collaboration brewing. Permits the development of social proximity before collaboration brewing.	No relationship evident
	Perceived Cognitive Proximity	Enables trust in the collaboration partner. Also represents disparate skills and capabilities	Developing perceptions of cognition can depend on geographic and temporary geographic proximity.
	Social Proximity	Enables trust in the collaboration partner.	Developed on platforms of geographic and temporary geographic proximity.
	Organisational Proximity	Motivates the collaboration due to a shared requirement to be innovative.	No relationship evident
	Capacity Proximity	Craft brewers must have sufficient time and brewing capacity to engage in a collaboration.	No relationship evident
International Collaboration Brewing	Triadic Proximity	Stimulates interaction between geographically distant craft brewers.	A precursor that stimulates temporary geographic proximity.
	Temporary Geographic Proximity	Enables distantly located collaborators to meet in person and conduct a collaboration. It may also facilitate the development of trust and social proximity between brewers.	No relationship evident
	Perceived Cognitive Proximity	Enables trust in a collaboration partner.	Perceptions can be made on platforms of temporary geographic proximity, but it is not required.
	Social Proximity	Social proximity with a mutual partner represents triadic proximity. Direct social proximity between collaborators is not required to initiate a collaboration.	Developed on platforms of temporary geographic proximity.
Inter-Industry Collaboration	Geographic Proximity	Enables awareness of potential inter-industry collaboration partners. Also promotes serendipitous interaction between potential collaborators	No relationship evident
	Organisational Proximity	Reflects similarities between disparate organisational types.	Awareness of organisational proximity facilitated by geographic proximity.

	Cognitive Distance	Reflects disparate skills and capabilities required for a collaboration.	Recognition of disparate skills and capabilities may require geographic proximity.
	Social Proximity	Enables trust in the collaboration partner.	Developed on platforms of geographic proximity.

Collaboration and Craft Brewery Definitions

The commercial imperatives reflected in the cases of collaboration discussed in this chapter weaken the notion that craft brewers are driven solely, or even mostly, by a ‘passion’ for beer in brewing. The ‘passion’ characteristic, it seems, is one of strategic positioning (Porter, 1998b). This perspective also weakens the view of craft brewers as being defined as a community of practice.

Chapter Summary

This chapter has explored the direct and indirect roles of proximity dimensions on inter-firm collaboration between craft breweries in New Zealand. Exploration was framed as a response to the following research question:

2. How are craft brewery collaboration modalities influenced by proximity dimensions in the New Zealand Craft Brewing Industry?

Through my exploratory approach to answering this question the following contributions were made:

- Geographic proximity is logistically favourable to contract brewing arrangements where the contract brewer intends to distribute locally.
- Geographic (including temporary) proximity facilitates the development of perceived cognitive proximity when a brewer's beer is only available locally.
- The identification of capacity proximity as a novel proximity dimension. Capacity proximity refers to the physical production capacity and time being sufficiently available to engage in a collaboration.
- Existing social proximity can enable collaboration brewing across geographic distances.
- Perceived higher cognitive proximity promotes collaboration, as collaborators seek to utilise disparate knowledge.
- Perceptions of cognitive proximity can act as a source of trust and can circumvent any need for social proximity.
- Micro-institutional values of a craft brewer can prohibit a collaboration.

- Organisational proximity, represented by the shared need to be innovative, rationalises collaboration. This is because collaboration produces new products, and collaborations represent learning opportunities.
- The role of triadic proximity is to stimulate in-person interaction and collaborations between geographically distant craft brewers.
- International collaborations are motivated by knowledge-sharing and attaining legitimacy in overseas beer markets.
- Inter-industry collaborations appear dependent on geographic proximity because this promotes serendipitous interactions and exposure to other types of firms.
- Inter-industry collaborations are motivated by attaining legitimacy in disparate markets.

I did not comment on challenges to my horizon throughout this chapter. This is because my prejudices and preconceptions were barely challenged. This is not because participants' insights were consistent with my existing views. Instead, it was because these insights relate to the back end of craft brewery collaboration, of which I had no prior experience. That said, I had previously considered craft brewers to be inherently collaborative, but now recognise craft brewers are discerning and exclusive in collaboration partner selection. I continue now to Chapter Seven, where I draw this thesis to a close.

Chapter Seven: Conclusions

“I don't think I've drunk enough beer to understand that.”

– Terry Pratchett

Introduction

In this thesis, I have presented an exploratory account of the roles of proximity in inter-firm knowledge-sharing and collaboration between craft breweries in Aotearoa New Zealand. In this chapter, I present the contributions to knowledge that have emerged from this exploratory account. I present my contributions to knowledge in the domains of proximity, diffusion, and craft brewery collaboration. I then discuss the contributions to knowledge that arose from my examination of definitions of *craft brewery* and *innovation* from the New Zealand craft brewing context. Next, I discuss the practical and policy implications of this research and draw the chapter to an end by recognising the limitations of this thesis and identifying avenues for future research.

Proximity and Craft Brewery Knowledge-Sharing

In Chapter Five, I aimed to understand the roles of proximity in craft brewery knowledge-sharing, and the interrelations between different proximity dimensions. In doing so, I responded to sentiment from proximity scholarship (Balland et al., 2015) that point to the value of an exploratory approach to proximity research. An exploratory approach seemed necessary because the positivistic methodological approaches of proximity scholarship provide a ‘static’ account of proximity (Balland et al., 2015), void of understanding of how proximity dimensions interrelate and change over time. Despite my research also reflecting a ‘snapshot in time’, there is a temporal dimension to exploratory and qualitative work, in which participants draw on prior experiences (Polkinghorne, 2005; Wheeldon, 2011) and forecast hypothetical situations. On reflection, alternative methodologies, grounded in positivism, could also achieve temporal insights through a survey design that asks participants to reflect on prior experiences. Nevertheless, using my adopted exploratory approach I examined an established view in proximity scholarship that geographic proximity is neither ‘necessary, nor sufficient’ for learning (Boschma, 2005, p. 63).

In my view, the most significant contribution to knowledge to arise from this examination was the identification of two novel proximity dimensions. Triadic proximity was the first of these new dimensions. Triadic proximity is a precursor that exists when two craft brewers, who have never met, share a mutual third-party connection. Triadic proximity stimulates temporary geographic proximity, as the mutual third party facilitates in-person interactions between geographically distant brewers. These in-person interactions provide the opportunity for triadically proximate brewers to develop social proximity. This contribution represents a re-imagining of triadic closure (Ter Wal, 2013), and allows triadic relationships to be integrated into the existing proximity framework. The second novel dimension, adversarial

proximity, was identified via my examination of the similarity logic domain of organisational proximity. Adversarial proximity refers to the presence of a mutual market opponent. The mutual opponent of craft breweries in New Zealand is corporate breweries. The presence of corporate breweries induces craft brewery cooperation and knowledge-sharing, as craft brewers seek to collectively grow the craft share of the beer market. Additional contributions to knowledge were made by exploring established proximity domains.

Concerning the direct roles of geographic proximity, my findings are consistent with extant scholarship (Balland et al., 2022; Boschma, 2005). Geographic proximity is not independently sufficient for any form of learning to occur. At the least, geographic proximity must be coupled with cognitive proximity, to ensure craft brewers can recognise and utilise available knowledge. I also find that knowledge-sharing opportunities between geographically proximate craft brewers are enhanced by the presence of social proximity. Again, this is consistent with proximity scholarship (Balland et al., 2022; Boschma, 2005; Giuliani et al., 2019). Social proximity enhances learning opportunities because it enables in-person discourse between craft brewers and the exchange of tacit knowledge. My research also finds that social proximity can circumvent any need for geographic proximity in knowledge-sharing between craft brewers. But the initiation of social proximity is dependent on forms of geographic proximity.

Permanent geographic proximity facilitates serendipitous in-person interactions between craft brewers. Through in-person interactions, craft brewers may develop social proximity with one another. This converges with proximity scholarship (Balland et al., 2022) that posits geographic proximity is ‘most likely’ a facilitator of other proximity dimensions. I also find that temporary geographic proximity (temporary agglomerations) between craft brewers can facilitate the initiation of social proximity. This is compatible with the French school of proximity (Rallet & Torre, 1999; Torre, 2008). It is significant because it demonstrates how social proximity can be ignited between geographically distant craft brewers. Moreover, all accounts of social proximity detected in this thesis were the result of an in-person interaction either on a platform of permanent or temporary geographic proximity. Thereby indicating the cruciality of these proximities in initiating social proximity. Via one degree of separation, either type of geographic proximity can be considered ‘necessary’ (Boschma, 2005) for knowledge-sharing. This is because the social proximity they enable is critical for craft brewery knowledge-sharing.

Craft brewers noted that they shared knowledge with fellow craft brewers with whom they are socially proximate. I found that social proximity was especially useful in facilitating knowledge-sharing between geographically distant craft brewers. Specifically, distantly located, socially proximate, craft brewers routinely shared codified knowledge via digital channels. However, tacit was also shared as social proximity prompted craft brewers to visit one another and engage with one another at industry events. This reflects social proximity engendering instances of temporary geographic proximity. This dynamic is not accounted for in proximity scholarship. Therefore, this finding represents a contribution to that vein

of thought. Further contributions were made when attempting to understand how social proximity was formed and sustained.

I presented the contribution that the initiation of social proximity occurs on platforms of geographic, and temporary geographic, proximity, supporting proximity scholarship (Balland et al., 2022). In addition to this, I found initiating social proximity on geographic proximities is contingent upon craft brewers sharing micro-institutional proximity. The French proximity school (Rallet & Torre, 1999) recognises geographic proximity does not always lead to social proximity but does not elucidate the factors that determine social proximity. This perspective appears to have been neglected by contemporary proximity thinking (Balland et al., 2022), where it is assumed that geographic proximity leads to social proximity. Therefore, my finding that micro-institutional proximity determines if geographically (including temporary) proximate craft brewers become socially proximate, represents an original contribution to knowledge. This contribution is significant because proximity scholarship (Boschma, 2005) has sought to envelop micro-institutional proximity within the broader territory of social proximity. Essentially disregarding its role. Likewise, contributions to knowledge resulted from examining the disregarded similarity logic component of organisational proximity.

“Purely for analytical purposes” (Boschma, 2005, p. 65), proximity scholarship has disregarded the similarity logic dimension of organisational proximity. By examining this neglected dimension of organisational proximity, I found craft brewers belong to a professional community, resembling a community of practice (Wenger & Snyder, 2000). Belonging to the same community means that craft brewers face similar challenges. Namely, the challenge of appearing innovative. Innovativeness reflects how craft brewers define themselves, and what consumers expect from a craft brewery. Remaining innovative requires access to knowledge (Quintane et al., 2011), and interfacing with craft brewers permits access to knowledge requirements. Therefore, craft brewers in New Zealand are motivated to engage in knowledge-sharing. This contribution to knowledge reframes organisational proximity as a stimulator of knowledge-sharing, rather than an enabler. The final contribution to emerge in this territory stems from my imagining of cognitive proximity as a matter of perception.

Proximity scholarship (Balland et al., 2015; Balland et al., 2022; Boschma, 2005) considers cognitive proximity a surrogate for absorptive capacity (Cohen & Levinthal, 1990). In empirical work, it is often represented by metrics, such as indexing the technological endowments of firms (Garcia et al., 2018). I contribute to this territory, finding that cognitive proximity is also a matter of individual perception. This contribution to knowledge recognised that craft brewers’ sought to extrapolate knowledge from brewers whom they perceived to be cognitively higher. This is because craft brewers wish to enhance their brewing knowledge, with the perceived higher knowledge of others. Simultaneously, craft brewers did not seek knowledge from brewers whom they perceive to be cognitively lower, but this perception is flexible. A craft brewer may be perceived cognitively lower in one regard, but cognitively higher in another. Craft brewer perceptions of cognitive proximity are informed by their impressions of craft beer in the

marketplace. This means that a perception of a brewer's cognitive proximity can be developed from wherever the beer is available. However, when craft breweries exclusively distribute their beer locally, developing a perception of cognitive proximity is reliant on geographic, or temporary proximity. Further contributions to proximity scholarship were made through my examination of cases of craft brewery collaboration.

Proximity in Craft Brewery Collaborations

In Chapter Six I intended to demonstrate, through the use of a series of cases, the roles of proximity dimensions on different modalities of craft brewery collaboration. Extant literature has applied a proximity lens to collaboration (Balland et al., 2013; Cassi & Plunket, 2014). These studies reflect the 'static' positivistic approaches of extant proximity scholarship (Balland et al., 2015). To my knowledge, this research represents the first exploratory, qualitative examination of collaboration through a proximity lens. This approach is also novel, as it sought to encapsulate multiple collaboration modalities in the same industry – something I have not detected in extant proximity scholarship. Specifically, I examined contract brewing, New Zealand-based collaboration brewing, international collaboration, and inter-industry collaboration through a proximity lens. The originality in my approach led to a series of contributions to knowledge.

In contract brewing arrangements, I found permanent geographic proximity nor social proximity were especially important collaboration enablers. This counters scholarship (Cassi & Plunket, 2014) that argues social proximity is essential for collaborating. But is reconcilable with the view geographic proximity is 'unnecessary' for collaboration (Balland et al., 2022). I found that enabling contract brewing arrangements relies principally on two factors. The first is perceived cognitive proximity. Craft brewers seek to contract with a brewer perceived to have high levels of brewing knowledge. This is to ensure the beer is of the quality and specifications of the contract brewer. However, access to the brewer's beer is required to develop this perception. The second factor enabling contract brewing is capacity proximity. Capacity proximity represents a novel contribution to proximity scholarship. It denotes a situation where the craft brewer has the time and physical brewing space to produce the type and volume of beer required by the contract brewer. Capacity proximity was a prominent determinant of contract brewing and collaboration brewing. Craft brewers expressed a willingness to collaborate but were deterred by a lack of time and physical brewing capacity. While being wary of generalisation, it seems likely that capacity proximity will be reflected in other industry settings. Therefore, I argue that capacity proximity should be integrated into the proximity framework (Boschma, 2005), and considered in future collaboration studies that apply a proximity lens.

Unlike contract brewing, I found social proximity is important for collaboration brewing in New Zealand. Social proximity is characterised by trust-based relationships (Boschma, 2005), and participants' expressed a reluctance to collaborate with a brewer they did not trust. I also found social proximity enables collaboration between geographically distant craft brewers. But geography remains important in enabling

the initiation of social proximity. Similar to knowledge-sharing relationships, perceptions of cognitive proximity influence collaboration partner selection.

When seeking a collaboration partner, I found that participants' sought to collaborate with brewers they perceived to be cognitively higher, in some dimension. This perception reflects a view that a collaboration partner should bring something distinct to the arrangement. Without a distinct contribution, a craft brewer will find it difficult to engage in a collaboration. This contribution supports extant scholarship (Balland et al., 2022), that argues cognitive distance enables collaboration. But expands on this, finding that distance is qualified by a perception of higher cognition. This supports my earlier argument that perception represents an important dimension of cognitive proximity. I provide further support to proximity scholarship regarding the relationship between geographic and cognitive proximities.

Balland et al. (2022) argue that geographic proximity may lead to cognitive proximity. Supporting this, I found that collaboration brewing between geographically proximate craft brewers enables mutual learning. By the end of the collaboration, craft brewers reduced disparities in their knowledge bases. Thereby increasing their cognitive proximity. This supports my view that in-person engagement in collaboration brewing is a format favourable to learning. The subsequent contribution highlights motivators for craft brewery collaboration.

Similar to knowledge-sharing, I found that the shared need to be innovative motivated collaboration brewing. Collaboration brewing is a vehicle for producing new beers, and new beers represent innovation to the craft beer consumer. This reinforces my earlier argument, that the previously neglected similarity logic dimension of organisational proximity can elucidate rationalisations for collaboration and knowledge-sharing. I also found that collaborations on the international level are enabled by a different arrangement of proximities.

Serendipitous interactions between craft brewers are unlikely to occur between craft brewers operating in different national settings. I found that serendipity is replaced by triadic proximity, which stimulates in-person interactions between geographically distant craft brewers. During in-person interactions, craft brewers have the opportunity to develop direct social proximity, thereby closing the triad (Ter Wal, 2013). Moreover, triadic proximity is represented by a mutual third party. The mutual third identifies the value in the collaboration and communicates it to the craft brewers. Therefore, the actions of the mutual third can forgo craft brewer perceptions of cognitive proximity. Meaning triadic proximity is substitutable for perceived cognitive proximity.

In international collaborations, I also found favourable perceptions of cognitive proximity can represent trust in a collaboration partner. This supports craft brewing (Lotfi et al., 2021) and trust (Mayer et al., 1995) scholarship that argues perceived reputation and capabilities act as a source of trust in a collaboration, and contributes to proximity scholarship (Balland et al., 2022), which focuses solely on social proximity as a source of trust in inter-firm relationships. With sufficient trust stemming from

perceived cognitive proximity, I found the need for social proximity and temporary geographic proximity can be mitigated in international collaborations. I now proceed to discuss contributions related to my examination of inter-industry collaborations.

Each account of inter-industry collaboration detected in my research was a consequence of a serendipitous interaction on a platform of permanent geographic proximity. This detection supports proximity scholarship (Boschma, 2005) that argues geographic proximity can substitute organisational proximity. Even so, accounts of inter-industry collaboration I examined also reflected a degree of organisational proximity, in the similarity logic dimension. Specifically, inter-industry collaborations were with firms operating in other areas of *craft* business. Such as wine, soft drinks, and confectionery. These collaborations were motivated by attaining legitimacy (Suchman, 1995) in similar but distinct markets. Suggesting the similarity logic organisational proximity can catalyse inter-industry collaboration. This finding has gone undetected in proximity scholarship (Balland et al., 2022), as it has for ‘analytical purposes’, neglected the similarity logic dimension of organisational proximity. Finally, I also find that inter-industry collaboration can be engendered by cognitive distance. Collaboration is sought across industry boundaries to access disparate knowledge and technological capabilities of other firms. This is reconcilable with proximity scholarship (Balland et al., 2022) which argues cognitive distance promotes inter-firm knowledge-sharing and collaboration. The contributions made to proximity scholarship have broader application to the domain of diffusion theory.

Diffusion Theory

Diffusion theory was utilised in this research as a theoretical basis for understanding the geography of innovation and proximity scholarship. When discussing the role of geography in the diffusion of innovation, I noted an enduring gap in knowledge concerned with separating spatial factors of diffusion from social factors. Specifically, scholarship (Lengyel et al., 2020) posits the challenge of distinguishing between the geographic from the social influences on diffusion, because social systems are frequently geographically embedded (Singh, 2005). My research expands understanding in this domain, finding that craft brewing knowledge diffuses through geographically distant social systems, supported by temporary agglomerations of craft brewers.

I found that New Zealand craft brewers diffuse knowledge across geographic distances, both in New Zealand and overseas. Diffusion of knowledge across such distances is enabled by temporary agglomerations, that involve craft brewers travelling to beer vents and other breweries. These temporary agglomerations permit in-person knowledge exchange between otherwise geographically disparate craft brewers. This suggests knowledge diffusion is not subject to geographic boundaries when economic actors (craft brewers) are geographically mobile. In sum, this suggests that knowledge is diffused primarily due to social factors, rather than geographic ones. But only when social factors are supported by temporary agglomerations. For diffusion scholarship (Lengyel et al., 2020) this indicates any correlation between geography and diffusion may be spurious. Having concluded my primary contributions, I continue by

discussing the contributions that emerged by exploring two key terms in this thesis: *craft brewery* and *innovation*.

Defining Terms

In Chapter Two, I discussed definitions of the terms *craft brewery* and *innovation*. I intended to provide clarity and context to the research setting. At the conclusion of that chapter, I argued that it was inappropriate to transplant existing definitions from other settings into this thesis. Instead, I adopted a data-driven approach to defining these terms. Participants were asked to provide their definitions. I analysed responses and presented a discussion in Chapter Five. Here, I present the contributions to knowledge made in that discussion.

Craft Brewery

I detected convergence between definitions provided by my participants and the USA definition ("What is a Craft Brewery," 2021). For example, participants considered a craft brewery to be innovative, independent, and small – relative to corporately-owned breweries. I also found that participants considered craft breweries to be community-oriented, again following their USA counterparts. The contrast was evident where participants identified with environmentalism and alluded to craft breweries belonging to a professional community, or community of practice (Wenger & Snyder, 2000). I detected further contrast with the USA definition with two additional defining characteristics, *flavour* and *passion*.

Participants referred to taste and flavour, when denoting the disparate character of beer produced by craft and corporate breweries. I found that the flavour-based distinction was not premised on superiority, but on the strength of flavour. Specifically, because craft brewers make liberal use of brewing ingredients, especially hops, they typically produce a stronger tasting beer. This contribution is interesting because it suggests that it may be possible to squarely define a craft brewery based on the flavour profiles of the beer it produces. Though, this distinction would be rendered obsolete if corporate brewers began producing similarly strong-tasting beer. Defining a craft brewer with *passion* is also interesting but does not withstand much scrutiny.

Participants distinguished their breweries from corporate breweries based on *passion*. The passion narrative reflected a view that craft brewers prioritised their passion for beer and brewing over the profitability of their breweries. It is a romantic notion, that I was willing to believe before this research. Although, I found this view to be discredited when participants indicated that they produce beer styles they are dispassionate about, namely hazy IPAs because the market demands them. The precariousness of the passion over profits narrative indicates there is a mythic image of a craft brewery, particularly from the consumer perspective. Specifically, consumers may view a craft brewery more favourably if they are convinced it does not hold profitability in high regard. I continue by discussing contributions arising from *innovation* definitions.

Innovation

A dedicated discussion of innovation definitions was a necessary step in this thesis for three reasons. First, innovation represented a defining characteristic of craft breweries in other settings. Second, *innovation* is central to core concepts in this thesis: knowledge-sharing and collaboration. Third, innovation scholarship presents a series of competing and incongruent definitions of the term. The discussion of extant innovation definitions I presented in Chapter Three was characterised by two arguments. One was that innovations are not required to be entirely new. Instead, newness is subjectively determined by the innovating firm. The other argument is that innovations are not defined by their ability to engender positive outcomes. Meaning innovations that produce negative results may still be considered innovative. Insights from my participants represented counter perspectives.

Participants discussed new products as a proxy for innovation. I found that the parameters of newness were distinct. Instead of newness being subjectively determined by the innovating firm, participants noted newness depended on the industry and geography. This means imitating innovations from within the New Zealand craft brewing industry is not innovative. But imitating innovations from different industries, or overseas craft brewing industries would represent something new, and is therefore innovative. I also found that the threshold for *new* is low, with participants accepting slight adjustments to an existing product can represent a new product. Contradictions to the view that innovations need not engender positive outcomes were also detected when participants discussed process innovation.

Participants' identification of new processes as a form of innovation is consistent with established proximity scholarship (Schumpeter, 1934, 1942). Though, participants noted process innovations are defined by their ability to bring about cost savings or improved beer quality. This finding supports Mars (2013), which argues innovations with negative outcomes should not be defined as such. This view was further supported by participants who indicated that innovation is a consequence of problem-solving. The significance of this finding is that it points towards a divide between industry and traditional academic thinking on how innovation is defined. Suggesting scholars may benefit from understanding how innovation is defined in research contexts when conducting innovation studies. Further contributions to defining innovation were made when discussing marketing and market structures.

Participants advised of innovation in the form of marketing. In craft brewing, marketing innovation is embodied by artful product packaging and consumer experiences at a bar or brewery. I found the purpose of these innovations was to capture market share and to communicate the individuality of the brewery to the consumer. Communicating individuality is crucial because craft beer consumers expect non-uniformity from craft breweries (Bastian et al., 1999). Paradoxically, I found efforts to communicate individuality leads to a degree of uniformity, as craft brewers aim to express individuality in similar ways. This contribution alludes to a notion that the craft brewing industry is an institution oriented toward consumer expectation.

Participants recognised market structure as a form of innovation. It was qualified by a focus on craft brewery collaboration. Specifically, forms of collaboration that enable a unified competitive front against corporate breweries. This contribution supports my earlier argument that the presence of a mutual industry adversary encourages craft brewery cooperation. I continue my discussion by considering the practical and policy implications of my research.

Practical and Policy Implications

For craft brewery managers, I have developed a series of recommendations for participation in inter-firm knowledge-sharing and collaboration. Firstly, practitioners may consider engagement with other craft brewery managers. This involves interfacing with local breweries and travelling to distantly located ones. These interactions are demonstrably crucial for the development of social relationships that punctuate knowledge-sharing and collaboration. For this reason, I strongly recommend attendance at industry events, such as *Beervana*. Such events provide an opportunity for in-person interaction with different craft brewers from around New Zealand at once. Managers of smaller craft brewing operations may be reluctant to attend these events as a commercial entity due to costly participation fees. To those managers, I recommend attending these events in the capacity of a customer. This significantly reduces the cost of participation yet presents similar opportunities for interacting with other craft brewers. Furthermore, these events provide an opportunity to sample different beer products from around New Zealand.

The craft brewery manager needs to sample beer from different breweries. Sampling offers insight into the brewing capabilities of certain brewers. This insight can be invaluable in making determinations as to which breweries the craft brewery manager may wish to learn from or collaborate with. If seeking a collaboration, the craft brewery manager must consider the specific contributions they can make to such an arrangement. This is necessary because participation in collaboration is contingent upon breweries bringing disparate knowledge or capabilities to the arrangement. Once engaged in a collaboration, including contract brewing arrangements, I recommend that the craft brewery manager intend in-person.

The craft brewery manager may consider conducting a collaboration remotely to overcome time limitations. However, in-person attendance during collaboration and contract brewing offers opportunities for learning for the parties involved. These learning opportunities may be especially meritorious for craft brewery managers new to the industry. To facilitate in-person attendance, I recommend that craft brewery managers consider geographic proximity when seeking a collaboration partner. That is not to suggest a potential collaborator must be in close physical proximity, but that it is reasonably accessible to the craft brewery manager. I now discuss the implications of this thesis on New Zealand policy.

This thesis has policy implications relating to New Zealand's historic efforts to engender the geographic clustering of firms. A policy area that has seen little success. Given its examination of the horizontal portion of a cluster, my thesis cannot make policy recommendations for wholistic cluster development,

in the Porterian sense of ‘cluster’, but can make suggestions for encouraging interaction, knowledge-sharing, and collaboration, between organisations in the horizontal strata of a cluster.

Contributions of this thesis indicate that, from an inter-firm knowledge-sharing and collaboration perspective, pursuing a strategy of physical clustering of firms is not necessary. Alternatively, encouraging high levels of interaction, particularly in-person interaction, is sufficient for establishing a basis for knowledge-sharing and collaboration. In sum, the objective of policy in this area should be to promote in-person interaction between firms. I identify two mechanisms for achieving this.

Firstly, financial support for travel would likely promote in-person interaction between distantly located business owners. Business owners may travel to specific business sites; attend trade shows; or conferences. Such instances of travel are shown to permit learning opportunities in the immediate term, but also facilitate the development of relationships that can sustain knowledge-sharing and collaboration between distantly located partners. Likewise, the promotion of events in New Zealand that encourage attendance from industry actors may also induce similar learning and relationship-building opportunities.

An additional policy recommendation was identified during the course of this thesis. Although, it’s implications exist beyond the scope of the theoretical contributions I have offered. The policy in question is that of excise tax relief for small brewers. In short, excise tax is levied against the volume of beer, or other alcohol, produced in New Zealand. Tax relief would most likely be volumes-based. For example, the first 1,000 litres of beer produced may be tax exempt. The exemption would apply to breweries of all kinds, but disproportionately favour those with low annual production volumes. From my conversations with craft breweries, this policy would reduce cash flow pressures, enable expansion, or investment in new technologies. Looking to the UK, a similar policy, referred to as Small Brewers Relief (SBR) has been in operation since the early 2000’s, and is frequently cited as the catalyst for the UK’s burgeoning craft beer scene (Calder, 2022).

Limitations

The exploratory account of proximity in craft brewery knowledge-sharing and collaboration I present can serve as a basis for further work in other industry and national contexts. However, since research participants were solely sourced from the craft brewing industry of New Zealand, I make no claims of generalisability regarding the findings I present in this thesis. Although, it should be noted that generalisability was never an aim of this research. Further limitations of this research emerge from my use of productive hermeneutics.

Productive hermeneutics places my horizon at the heart of data analysis. The interpretations I provided in this thesis are supported by my prior experiences and knowledge of the research setting. This means another researcher may interpret the empirical material collected for this research differently from myself. This limits generalisability – but again, this was not an aim of my research. Understanding that other researchers may interpret my empirical material differently, I provided data to support my interpretations.

My goal was not to convince the reader my interpretations were ‘correct’ but to demonstrate how they had been reached. Moreover, I relayed an account of my horizon related to craft brewing in Chapter Three. I did this to provide transparency of the knowledge and experiences that informed my interpretations.

Consideration was also given to the limitations emerging from my use of a first-person narrative as a linguistic tool. On reflection, I consider the use of a first-person writing style to be the most appropriate given my methodological considerations. If I were to repeat the research, I would adopt this linguistic style again. That said, I also realise that this style is not utilised in all domains of academic literature, including the domain to which I sought to make the most significant contributions to knowledge – proximity scholarship. For some audiences, therefore, my use of the style may lead to a lack of clarity or confusion. With specific reference to my interpretations, I note that my linguistic approach may have inadvertently positioned me as a ‘proxy’ for the typical craft beer consumer – which was not my intention. Reorienting my writing to a third-person style, more consistent with existentialism, would have perhaps limited this vein of confusion, but also created others. Specifically, the use of a third person may have created an aura of objectivity, which would have been inconsistent with my chosen methodological approach.

Limitations also emerge with regards to my data collection techniques. I sought to understand the role of proximity dimensions in different geographic settings. Specifically, regions where craft breweries are densely located, loosely located, and located in isolation. My research, therefore, sought a breadth of understanding. Seeking a breadth of understanding was valuable in applying an exploratory, qualitative lens to an established field of scholarship, but depth of knowledge may have suffered at times as a result. Future research can be used, however, to deepen understanding of the novel insights I have presented in this thesis. Situating this research in a single national context was also limiting.

Craft brewing is a global phenomenon. Incorporating insights from craft brewing industries from other nations would have enriched the findings of this thesis. Unfortunately, extending this research internationally was impractical given the time and budgetary constraints of a PhD, and made virtually impossible by COVID-19-related travel restrictions. This research is also limited by the perspectives of single participants in accounts of collaboration.

In Chapter Six, I presented nine cases of craft brewery collaboration. Yet, both sides of the collaboration were accounted for in only two of those cases. Examining accounts of both sides of a collaboration in the remaining seven cases would have likely expanded my interpretations and provided an opportunity for verifying and triangulating participant remarks. Such an approach would have required a snowballing sampling technique (Goodman, 1961), that involved identifying potential participants during the analysis of participant interviews. On reflection, I may have been able to accommodate such an approach, if it were not for the limited research funds I had available, and the intermittent travel bans imposed in New Zealand. Though, it is an avenue I wish to pursue in my future work. Collecting consumer perspectives may also have enhanced this research.

When discussing definitions of a *craft brewery*, I posited the identity of craft breweries is tied to consumer legitimacy. It would have been interesting to incorporate consumer perspectives into this discussion. However, consumer perspectives were not deemed appropriate for responding to my main research questions, as I expected them to have little credible insight into the management and function of a craft brewery.

Finally, despite my best efforts, this research may have been limited by my inexperience in conducting semi-structured interviews. I posit that if I were to reconduct this research as a more experienced interviewer, I would have been more effective in probing responses and obtaining overall greater insight from my participants. Alas, the PhD is a learning process, and I am a better interviewer now as a result of the work conducted for this thesis. I conclude this chapter and the thesis by discussing avenues for future research.

Future Research

I agree with Balland et al. (2015) that longitudinal data will expand understanding of how proximities influence one another and change over time. Proximity scholars strive for quantitative longitudinal data. This likely represents an interesting avenue. However, in addition, I propose longitudinal qualitative work through an interpretive lens. Practically this would involve incrementally interviewing craft brewers over an extended period and discussing their interactions with other brewers. This approach means that participants would not be expected to recall interactions dating back numerous years, as was the case with this research. In all, this should lend support to the accuracy of participant accounts. Moreover, longitudinal data may result in the identification of novel proximity dimensions, support the existence of dimensions I identified in this research, or refute them. I identified three new dimensions of proximity in this research. These are entirely new concepts. Any further work dedicated to their understanding would represent an interesting domain of future work.

Utilising a single-case study approach (Yin, 2011) represents another avenue for further work in this domain. Collecting data from numerous sources within a single craft brewery would permit triangulation and may result in a deeper understanding of the roles of proximity in inter-firm knowledge-sharing and collaboration. Moreover, orienting future work within the single brewery context provides an opportunity for the application of theoretical lenses, such as the resource-based view of the firm (Barney, 1991). The resource-based view may reorient proximity as a resource complementing brewery capabilities towards the formation of a competitive advantage. This approach would require the selection of a craft brewery large enough to host numerous data sources.

Reconducting this research in another industry and/or national context would indicate if the findings of this thesis can be explained by the idiosyncrasies of the research setting. That said, the research setting of this thesis represents an avenue for future research.

Definitions of *craft brewery* discussed in this thesis can be used to inform future work situated in craft brewing industries of other nations. I do not endorse transplanting definitions from this thesis into another context. But I envisage they may be used to provide contrast with different settings. In the same way, craft brewery definitions presented here may be used to contrast *craft* definitions in other craft sectors. This is timely as research into craft industries appears to be becoming a popular domain of study (Bell et al., 2019; Bell & Vachhani, 2020). Ideally, contrasting will lead to an enriched understanding of how these sectors are defined. Definitions of *innovation* present a similar opportunity for further research.

Innovation perspectives discussed in this thesis may be used to inform future research concerned with innovation in craft brewing, in other national settings, and in other craft industries. Again, I do not endorse transplanting definitions from this setting into other contexts. Instead, I suggest they are used to contrast with different settings. I also suggest future work in the domain of organisational institutionalism.

Throughout the thesis, but particularly in Chapter Four, I suggested craft breweries may represent a community of practice and/or an institution. An in-depth examination of this was not achievable within the scope of my thesis. Therefore, I posit that a study of craft brewing through the lens of organisational institutionalism (Selznick, 1957) may represent an interesting avenue for further research. To my knowledge, no such work exists in the craft brewing space or the wider *craft* domain. Finally, a deeper examination of the history of beer and brewing in Aotearoa New Zealand represents an interesting domain of future scholarship.

I presented a brief account of beer and brewing history in the Prologue of the thesis. This was written using secondary sources. Taking a historical approach, using document analysis, for example, would likely expand understanding of this interesting, and under-researched, territory of New Zealand history.

Final Conclusion

My research aimed to provide an exploratory look at the roles of proximity in knowledge-sharing and collaboration between craft breweries in New Zealand. In doing so, my research identified a series of novel proximity dimensions and offered reinterpretations of existing ones.

“Now’s the day, and now’s the hour”

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Appendices

Appendix A: Participant Consent Form

Examining Emergent Innovation in NZs Craft Brewing Industry

PARTICIPANT CONSENT FORM - INDIVIDUAL

I have read, or have had read to me in my first language, and I understand the Information Sheet attached as Appendix I. I have had the details of the study explained to me, any questions I had have been answered to my satisfaction, and I understand that I may ask further questions at any time. I have been given sufficient time to consider whether to participate in this study and I understand participation is voluntary and that I may withdraw from the study at any time.

1. I agree to the interview being sound recorded.
2. I agree to participate in this study under the conditions set out in the Information Sheet.

Declaration by Participant:

I _____ hereby consent to take part in this study.

Signature: _____ **Date:** _____

Appendix B: Participant Information Sheet



MASSEY UNIVERSITY

Participant Information Sheet

Study Title: An Examination of the Emergent Innovation Activity in the New Zealand CraftBrewing Industry

Location: Massey University, Albany Campus, Auckland

Lead: Jamie O'Hare Contact: j.ohare@massey.ac.nz

An Invitation

I am a PhD student at Massey University, Auckland. I am inviting you to participate in my research titled: *An Examination of the Emergent Innovation Activity in the New Zealand Craft Brewing Industry*.

Research Purpose

The purpose of this research is to understand the role of craft breweries in the New Zealand business environment.

How were you chosen for this research?

Your brewery fits the criteria of a craft brewery.

If you are happy to participate

If you agree to participate in this research, please confirm via e-mail to johare@massey.ac.nz. I am hoping to commence my fieldwork as soon as possible, and so a prompt reply is appreciated.

Your Involvement

I will require you to participate in a one-on-one interview with myself. The interview will last for no more than 60 minutes. Where possible I would like to conduct this interview at your brewery. The interview will be audio recorded and subsequently transcribed.

Confidential Involvement

Audio recordings and transcriptions will be entirely confidential, and any reference made to you or the brewery in my writings will be completely anonymous.

Your Rights

If you decide to participate, you have the right to withdraw from the study at any point; ask any questions about the study at any time during participation; or decline to answer any particular question.

How will your data be stored?

Raw data will be digitally secured and password protected.

Who else is involved?

This is an independent research project, conducted by myself. I am operating under the supervision of Dr Andrew Cardow and Dr Jason Cordier of Massey University, whose roles are advisory.

If you have concerns

If at any time throughout the research you have any questions or concerns please feel free to email me directly at johare@massey.ac.nz, or my supervisors: a.cardow@massey.ac.nz or j.cordier@massey.ac.nz.

All the best,

Jamie O'Hare

Appendix C: Low Risk Ethics Notification

humanethics@massey.ac.nz <humanethics@massey.ac.nz>
To: Jamie.OHare.1@uni.massey.ac.nz, A.Cardow@massey.ac.nz
Cc: humanethics@massey.ac.nz

Mon, Feb 24, 2020 at 10:18 AM

HoU Review Group

Ethics Notification Number: 4000022214

Title: An Examination of Emergent Innovation in the New Zealand Craft Brewing Industry

Thank you for your notification which you have assessed as Low Risk.

Your project has been recorded in our system which is reported in the Annual Report of the Massey University Human Ethics Committee.

The low risk notification for this project is valid for a maximum of three years.

Please note that travel undertaken by students must be approved by the supervisor and the relevant Pro Vice-Chancellor and be in accordance with the Policy and Procedures for Course-Related Student Travel Overseas. In addition, the supervisor must advise the University's Insurance Officer.

A reminder to include the following statement on all public documents:

"This project has been evaluated by peer review and judged to be low risk. Consequently it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named in this document are responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you want to raise with someone other than the researcher(s), please contact Professor Craig Johnson, Director (Research Ethics), email humanethics@massey.ac.nz."

Please note that if a sponsoring organisation, funding authority or a journal in which you wish to publish require evidence of committee approval (with an approval number), you will have to complete the application form again answering yes to the publication question to provide more information to go before one of the University's Human Ethics Committees. You should also note that such an approval can only be provided prior to the commencement of the research.

You are reminded that staff researchers and supervisors are fully responsible for ensuring that the information in the low risk notification has met the requirements and guidelines for submission of a low risk notification.

If you wish to print an official copy of this letter, please login to the RIMS system, and under the Reporting section, View Reports you will find a link to run the LR Report.

Yours sincerely

Professor Craig Johnson
Chair, Human Ethics Chairs' Committee and
Director (Research Ethics)

Appendix D: Interview Question Template

Q1. Tell me about how you got into brewing and became the manager of this brewery?

Purpose: establish some informality, and to enable collection of demographic data without direct questioning.

Q2. How would you define what a craft brewery is?

Potential follow ups:

What makes you different from a brewery like Lion or DB?

What need do craft breweries fulfil in the beer market?

Q3. What does *innovation* mean to you?

Potential follow ups:

What makes innovation important to a craft brewery?

Tell me about a recent innovation at the brewery?

Q4. What sources of knowledge do you use?

Why are those sources important to you?

What alternative sources do you use?

How important are other breweries as a source of knowledge?

Q5. What matters when deciding to collaborate with another brewery or firm?

Tell me about a recent collaboration?

Why did you agree to collaborate with XXX?

Reflecting on that collaboration, what might you have done differently?