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Strength in Numbers: Collaborative Procurement and Competitiveness of Craft Breweries

ABSTRACT

Purpose – This article investigates collaborative procurement as a sourcing strategy amongst competing small enterprises in an effort to reduce their material supply costs through increased efficiencies, bargaining power and economies of scale.

Design/methodology/approach – A case study approach is applied to a network of breweries that are regionally clustered. Interview data from producers, suppliers and industry experts is inductively interpreted to understand the viability, organisational impact and benefits/limitations of joint procurement activities.

Findings – The craft brewing industry follows a market place strategy of differentiation to achieve competitive advantage. This has supply chain implications that promote raw material diversity, which is in conflict with standardisation – a necessary factor for collective buying. Competition impacts information sharing and governance mechanism, while the structural factors of size asymmetry along and across the supply chain influence returns. These issues impact the potential economic benefits of collaborative procurement.

Originality– Previous studies of collaborative procurement have been in the public sector amongst large organisations. This work focuses on coopetition in the context of small businesses to identify the viability and cost-benefit of this strategy.

Research limitations/implications – Research propositions have been developed in a specific industry but are generalisable to other companies with a differentiation strategy, especially in the consumer packaged goods sector.

Practical implications – Enabling conditions and constraints are captured in a framework and capability matrix, which can be used by practitioners to assess industry and product feasibility for collaborative procurement.

KEYWORDS

Horizontal collaboration; coopetition; purchasing; supply chain; network.

1. Introduction

The importance of the craft brewing industry can be understood through its distinct ability to create diverse economic and social value. Direct economic outputs are captured at the local level and additional benefits are manifested through local identity, enhanced social employment, community development, and generating specialist tourism (Wilson *et al.*, 2022). Craft beer is produced by small, independent breweries in lower volumes, typically focusing on experimentation and variety. These breweries are often micro (<10 employees) or small firms (10-49 employees) seeking to compete against multinational players. The current craft brewing segment is growing and this is attributed to the shifting taste of millennials, whom prefer artisan beers over mass-produced styles (Nilsson *et al.*, 2018). As a result, craft breweries have been able to gain a competitive advantage by developing a niche market through taste and style diversity, superior product quality and agility to create new beers (Shilton, 2016).

In the UK, the economic and social value associated with craft brewing is especially important as it influences the Food & Beverage industry contributions to manufacturing output and exports (Betts and Mason, 2022). This has led to regional development and levelling-up initiatives through industry clusters that aim to stimulate growth. These types of interventions are necessary because craft breweries face significant challenges, such as: limited distribution network access, recruitment and retention of skilled staff, high costs, negligible marketing influence, and reduced services for rural based businesses (Wilson *et al.*, 2022).

These challenges have been identified in other studies and the industry has had to find innovative solutions (Alonso *et al.*, 2018; Lotfi *et al.*, 2022). This has led to widespread horizontal collaboration amongst breweries, which may also incorporate consultants, suppliers, government bodies, and academic institutions through the formation of formal or informal networks (Cunningham and Barclay, 2020). Collaborative practices seem to develop organically in these interwoven communities of craft brewers, where the focus is the development and flourishing of the community, along with their individual growth (Garavaglia and Borgoni, 2022). Ramjaun *et al.* (2022) investigated horizontal supply chain initiatives employed by several brewery networks and discussed the issues surrounding each activity. They found that group procurement was a collective priority but had mixed results.

Collaborative procurement (CP) is defined as: '*horizontal cooperation between independent organisations that pool their purchases to achieve various benefits*' (Tella and Virolainen, 2005). Benefits extend beyond efficiencies associated with bulk buying and centralisation (Essig, 2000). Resource constrained small and medium-sized enterprises (SMEs) can engage in information sharing through collective action. Innovative, cost-reduction

strategies can be derived from the supply chain through inventory pooling, consolidated transportation, and lateral transshipments (Ghaderi *et al.*, 2012; Rego *et al.*, 2014). In this study, we use the term SME interchangeably with micro and small craft breweries to align with the literature.

Despite the potential benefits, there are research gaps for CP amongst SMEs (Schotanus and Telgen, 2007; Oesterbeck, 2015). CP is explored in the public sector but the specific impact of competition on the scheme's viability is unclear (Walker *et al.*, 2013). Insufficient empirical evidence means that rich, descriptive insights are needed to understand firm and supply chain level cost-benefits to aid strategic decision-making (Schotanus *et al.*, 2011). Sector specific attributes are not well understood, which leads to limited generalisability (Danson *et al.* 2015). Finally, CP is not restricted to buyers and the supplier's perspective needs to be considered (Nollet *et al.*, 2017).

This research amongst Welsh craft breweries is motivated by the challenges they face in terms of their smallness and lack of power with respect to procurement. CP has the potential to reduce material costs and enhance competitiveness against large firms as strength in numbers increases the power and influence of micro and small enterprises. However, this depends on small enterprises being more competitive in their negotiations along the supply chain. It is also necessary for the competing firms to cohere to achieve mutual benefits. Many aspects of collaboration are available for study, but procurement was identified as a priority by the breweries themselves and is our focus. Despite their motivation, CP is a complex undertaking and many factors could impact a successful outcome. For this reason, the following research question is posed – *In the context of micro and small enterprises, under what conditions is collaborative procurement viable?*

To answer the research question, we apply a case study approach in the context of craft breweries that are seeking collaboration in their procurement activities. Data is collected from producers, suppliers and industry experts to contextualise focal firms within their supply chain and industry structure. This work contributes to the field of CP by focusing on SMEs operating in the private sector. First, horizontal and vertical supply chain asymmetries influence realisable CP cost reduction. Second, firm-level competitive advantage derived through product differentiation curtails CP opportunities. Third, competition necessitates formal mechanisms and third-party governance which increase CP costs.

The paper is structured as follows: section 2 presents a review of the literature on CP. The case study research methodology is outlined in section 3. The findings are presented in section 4 and discussed in section 5. The theoretical contributions, managerial implications and direction for future study are highlighted in section 6.

2. Literature Review

This section focuses on the needs and motivation of SMEs, and in particular craft brewers, to join CP initiatives and the potential benefits and challenges faced by the industry in this process. The overview highlights research gaps and the need to understand the viability of CP in the Welsh brewing industry.

2.1 CP in the context of SMEs

SMEs typically have constrained resources, limited external relationships, and insufficient legitimacy (van Rijnsoever *et al.*, 2017). They are motivated towards horizontal collaboration to exploit complementary core competencies, access joint resources, share costs and information, and mitigate risks (Vlachos and Gutnik, 2016). They have unique challenges, e.g., higher R&D costs and risk exposure to technological development (Del Giudice *et al.*, 2019). They suffer knowledge deficiencies, finance and resource paucity, restricted access to information or advice, and reduced opportunities to foster business partnerships (van Rijnsoever *et al.*, 2017; Zahoor *et al.*, 2020). Their reliance on external sources drives SMEs to collaborate to develop technology (Del Giudice *et al.*, 2019; Zahoor *et al.*, 2020), reduce costs through bulk purchases and establish customer relationships in international markets (Zaridis *et al.*, 2020).

To enable successful collaboration amongst SMEs, their inter-organisational arrangements should be legitimised to build trust and establish norms (Kumar *et al.*, 2022). Two governance modes are typically considered as a foundation for SME collaborations; *contractual* (legally binding agreements) and *relational* (based on social and cooperative norms) (Bicen *et al.*, 2021). The decision on which governance structure to pursue depends on a mix of tangible and intangible factors, including financial estimates or initial investment costs, along with perceptions of reputation enhancement or future expectations for relational development (Mesquita and Lazzarini, 2008). This decision is important in the context of CP because vertical supply chain commitments with suppliers are typically governed by contracts (Pazirandeh and Herlin, 2014).

In the literature, limited CP studies focus on SMEs and most research is based on large (public sector) organisations. This would suggest that competition is an issue for CP but its impact has not been explored (Walker *et al.*, 2013). Essig (2000) conducted research across sectors to understand the underlying principles and found that CP leads to: economies of scale, increased purchasing power, staff efficiencies, and lower transaction costs. However,

these mechanisms still require elucidation for SMEs. Furthermore, CP amongst SMEs should facilitate additional benefits of inter-organisational networking, shared learning and enhanced group expertise (Bakker *et al.*, 2008; Nollet *et al.*, 2017).

CP allows SMEs to improve their bargaining power for materials and services through order consolidation and economies of scale, which has implications for all supply chain actors (Zhou and Xie, 2014). For this reason, it is necessary to understand the supplier perspective because CP directly affects them. Consolidated procurement may support an efficient supplier ordering process, reducing the number of transactions among actors (Granot and Sošić, 2005). While the CP group leverages bargaining power for their own benefit, it can reduce supplier profits. Furthermore, a major precondition for implementing CP amongst SMEs is having a relatively high number of participants to ensure economies of scale to entice supplier engagement (Ramjaun *et al.*, 2022). Overall, there is limited research on supplier influence in the context of CP.

The limited empirical research amongst small private businesses suggests that CP leads to professionalisation of competencies, mutual learning, and improved supplier service (Oesterbeck, 2015; Yu, 2014). However, these studies were undertaken in the context of retailers, rather than food and beverage (F&B) producers. F&B producers adopt business models around a value proposition based on their product, production processes and routes to market, all of which are linked to upstream procurement activities. The literature has distinct knowledge gaps, specifically for CP amongst multiple, competing SMEs. Studies mention the benefits of CP and that it occurs but there is an insufficient depth of investigation and analysis to guide practice, particularly accounting for supplier interactions.

2.2 Collaboration, competition and CP in the craft brewing industry

The craft beer sector in Scotland (Cunningham and Barclay, 2020) and the USA (Said, 2019) organically fosters localised collaboration through a mutual desire to develop the sector. This is in response to mainstream competition, whereby large players have the distinct advantage of market access and economies of scale, thus creating a hostile environment and threatening the existence of craft breweries (Flanagan *et al.*, 2018; Kraus *et al.*, 2019). Collaboration between craft brewers in Scotland is driven by community embeddedness and collective responsibility for market development (Cunningham and Barclay, 2020). Similarly, the craft brewers in Seattle collaborate with each other, despite competing actively for consumers, because they believe “a rising tide lifts all boats” (Said, 2019). Collaboration can be as simple as two breweries informally sharing resources or lead to wider industry benefits such as

enhanced product quality, knowledge enhancement of firm-level practices and strategic industry knowledge, as found by Alonso *et al.* (2018).

Collaboration in the craft brewing sector is prolific and breweries that are on the outskirts of urban areas will often group together (Nilsson *et al.*, 2018). This colocation prerogative is in part motivated by a joint effort to compete against large, dominant players, which is facilitated by close spatial proximity. The advantages of networking and collaborative activities allow craft breweries to overcome their resource limitations and band against a 'common enemy' (Cunningham and Barclay, 2020; Danson *et al.*, 2015; Said, 2019). Colocation also drives economic benefits at a firm-level because of increased tourist foot traffic (Nilsson *et al.*, 2018). Despite inter-firm rivalry, breweries perceive the benefits of horizontal collaboration outweigh the negative impact of increased competition (Alonso *et al.*, 2018).

Horizontal collaboration amongst competitors is also referred to as 'coopetition', whereby a *'firm simultaneously is involved in both cooperative and competitive interactions with the same competitor at the same product area'* (Bengtsson and Kock 2000). Coopeting firms produce and market the same products, cooperating for value creation while competing for value distribution (Brandenburger and Nalebuff 1996). Coopetition in the context of CP can facilitate consolidated purchasing to reduce supply costs, meanwhile, firms compete in terms of production and marketing (Flanagan *et al.*, 2018; Kraus *et al.*, 2019; McGrath *et al.*, 2019). Coopetition among firms can create barriers because a greater degree of trust and commitment is required in the face of opportunism, compared with non-competitors whose primary concern is competence (Nollet *et al.*, 2017; Schotanus *et al.*, 2010). There are specific CP challenges that relate to sharing sensitive information and concerns that could be used opportunistically by rival firms (Granot and Sošić, 2005; Pazirandeh and Herlin, 2014).

Within the craft brewing sector, there is evidence of CP that is governed either informally or contractually. The social context of the industry facilitates a high degree of horizontal collaboration that includes the collective purchasing of supplies (Dodd *et al.*, 2021). This can be as simple as borrowing materials from each other at a merely tactical level (McGrath *et al.*, 2019). Flanagan *et al.* (2018) observed brewers placing consolidated orders with suppliers to take advantage of bulk discounts or acquiring expensive equipment which could be shared amongst the contributors to increase utilisation. The authors found that such behaviour can occur even when participants are competitors. On a more formal note, Lotfi *et al.*, (2022) identified an established brewery acting as a procurement hub for smaller beer producers, while a UK brewery cross-case analysis by Ramjaun *et al.* (2022) found a cooperative that was established to meet suppliers' minimum order quantities. Kraus *et al.* (2019) identified pooling demand to increase bargaining power as one of the main CP objectives, and Prim *et*

al. (2021) observed that CP could lead to significant reductions in logistics costs. The studies showcase the principle of strength in numbers amongst SMEs for a variety of collaborative initiatives, but CP was not the primary focus and lacks analytical depth. Knowledge is lacking for CP with no understanding of the enabling conditions and best practice for management or policy makers. Our study intends to address this research gap by determining the feasibility of CP amongst micro and small breweries operating within the Welsh brewing sector.

3. Methodology

We adopt a case study methodology to explore CP as a sourcing strategy to enable economic benefits for the Welsh craft brewing industry, and investigate supply chain participants and additional network members. For the purpose of theory development, data from in-depth interviews is supplemented with company and secondary data to support contextualised research (Ketokivi and Choi, 2014). This approach was followed because inter-organisational CP is a complex phenomenon, occurring within the context of limited existent knowledge (Baxter and Jack, 2008; Eisenhardt and Graebner, 2007). To extract these complexities, data was collected from relevant participants and aggregated at the CP initiative level (launched by the Welsh Drinks Cluster). This ensured a holistic understanding of the horizontal and vertical supply network interactions. The unit of analysis is set at the firm level such that the data analysis addresses the impact of CP on the individual breweries. The case study methodology addresses the research questions by capturing rich, descriptive insights into diverse topics that arise during the interview and analysis process in their real-life context (Meredith, 1998).

3.1 Industry overview & case selection

The UK craft brewing sector has grown rapidly over the previous 20 years because of Small Brewers Relief that halves the Beer Duty rate for production levels <5,000 hectolitres, (880,000 pints). Tax relief incentivises entrepreneurship and industry growth but also restricts further expansion. Moreover, the brewing process is readily scalable, and the end-product (beer) can be produced predominately from domestic ingredients (barley and hops). These conditions have created an industry dynamic where breweries exist on a scale from a few staff members through to multi-national operations. There are over 80 craft breweries in Wales, collectively producing 23 million pints of beer per annum while a single AB InBev multinational facility (in Wales) has the capacity to produce 1 billion pints.

The excessive competitive advantage associated with large scale production facilities is detrimental to small firms. In response, the Welsh Government created F&B clusters to help

independent Welsh businesses achieve growth as part of levelling-up and rural development. A Welsh Drinks Cluster initiative was launched in 2017 to drive industry collaboration and connectivity. Our case study is focused on the Welsh brewing sector with beer producers and their suppliers. The initiative provided a context to investigate CP due to the cooperative nature of the industry, accessibility to business owners, and their motivation to employ strategies that reduce material costs (Flanagan *et al.*, 2018). CP was identified as a priority by the breweries themselves during cluster development groups conducted by other researchers prior to this work. The brewing supply chain is relatively simple, which allowed individual material inputs to be investigated at a granular level (Gobbi and Hsuan, 2015).

We attempted to profile every brewery in Wales from government agencies, business forums, company websites, social media, popular press, and brewer referrals. The craft brewers know their local competitors and often engage on a personal and professional level. Over a multi-year project span, new members were added as they emerged. In 2020, an initial attempt was made to contact all breweries by email and telephone to introduce the CP project and arrange further correspondence. From these contributors, 20 breweries were interviewed, as presented in Table 1. The selection criteria were based on previous communications and size distribution to ensure the sector was sufficiently represented. Interviewees ranged from fledgling start-ups to established breweries with retail outlets. A brewery producing 5000 hl is likely to employ >10 employees with a turnover in the region of £1 million based on beer production sales. Annual beer production data allows comparison between breweries that typically have additional revenue streams through pub and estate management, whereby direct comparison of employees and turnover can be misleading.

Table 1. Interviewee schedule. Primary data collected from breweries, material suppliers and industry consultants.

Breweries			
Identifier	Enterprise Size	Annual Production (hl)¹	Interviewee
B1	Micro	1000-2500	Brewery owner
B2	Micro	<1000	Brewery owner
B3	Small	7500-10000	General Manager
B4	Micro	<1000	Brewery owner
B5	Micro	<1000	Brewery owner
B6	Micro	1000-2500	Brewery owner
B7	Small	2500-5000	Brewery owner
B8	Micro	1000-2500	Brewery owner
B9	Micro	<1000	Brewery owner
B10	Small	5000-7500	Brewery owner
B11	Small	5000-7500	Brewery owner
B12	Micro	1000-2500	Brewery owner
B13	Micro	<1000	Brewery owner
B14	Micro	<1000	Brewery owner
B15	Micro	<1000	Brewery owner
B16	Micro	<1000	Brewery owner
B17	Micro	1000-2500	Brewery owner
B18	Small	2500-5000	Brewery owner
B19	Micro	1000-2500	Brewery owner
B20	Micro	<1000	Brewery owner
Suppliers and Consultants			
S1		Malt supplier – craft sales manager	
S2		Hop supplier – UK head of sales	
S3		Mixed materials supplier – general manager	
C1		F&B Industry consultant	
C2		F&B Industry consultant	

Table Notes:

¹In terms of dedicated brewing operations staff:

<1000 hl will typically have <5 employees

<2500 hl will typically have <10 employees

>5000 hl will typically have >10 employees

3.2 Data collection

Primary data was collected from 20 breweries, 3 major suppliers and 3 industry consultants through interviews, email/telephone correspondence and company documentation between September 2020 and May 2021. The semi-structured interview protocol was flexible enough to address breweries of different sizes and other supply chain network actors. Initial questions addressed company demographics, production volumes, and supply ordering processes.

These were followed by questions to understand attitudes towards CP and conditions for establishing a group.

We interviewed the person responsible for procurement, which was predominately brewery owners that also managed other functions. Following an agreement with specific breweries, the maltster (S1) provided their order book to verify the variety, volume, and price breaks of supplied materials. An independent, expert perspective was provided by industry consultants working with all actors along the brewing supply chain. Interviews lasted 30-90 minutes and were conducted online via Zoom. Regular correspondence was established with several breweries that later provided additional industry information such as operational costs and marketing strategy. All interviews were transcribed and field notes were created. The interview protocol was updated and clarified with each replication as suggested by Glasser and Strauss (1967).

To improve validity, secondary data was collected from company documents (e.g., purchase orders and websites). The authors supplemented the primary data (semi-structured interviews) with archival data provided by the interviewees, including company accounts, purchasing expenditure and production costs; company websites and social media; Welsh Government publications; attendance and minutes from monthly Special Interest Group meetings hosted by brewery consultants; popular press; industry reports on Welsh brewery collaborative product development; and analysis of circular economy strategies. On completion of the data collection, all the breweries and industry consultants were invited to attend a data analysis and findings feedback session. Finally, a 5000-word report was provided to all participants for comments and verification.

3.3 Data analysis

First, each transcript was coded manually and separately by two authors based on a priori concepts from the interview protocol and emergent concepts to develop basic categories of analysis, as suggested by Bingham and Witkowsky (2021). The literature identified some basic theoretical constructs such as size asymmetry and governance, which were helpful for the coding process. However, these constructs have not been contextualised for the craft brewery sector thus our approach was predominantly inductive in nature. The authors assigned codes to data, denoting different themes of meaning and structure. Second, the authors came to a consensus on first order coding terms. For coding, we used NVivo Software for a consistent process and the recording of reflections (Miles *et al.*, 2020). In the second stage, we examined the relationships between categories and through axial coding, connected common themes

together through an iterative process to identify the main categories (2nd order coding). The coding structure is presented in Table 2.

Table 2. Coding dictionary.

2nd Order Code	1st Order Code	Definition
Scale Asymmetry	Horizontal Scale Differences	The differences in scale between competitors ¹
	Vertical Scale Differences	The differences in scale between supply chain tiers ²
Differentiation	Differentiation + Brand	The difficulty of maintaining brand identity through packaging standardisation
	Differentiation + Product Ingredient	The difficulty of maintaining a unique product through standardised ingredients
Supply Chain Governance	Organisational Structure	The structure defines how activities are delegated toward achieving the organisation's goals
	Formal Mechanisms	The formal rules, contracts, and standards needed for CP
	Informal Mechanisms	The informal social rules and social bonds needed for CP
Cost Analysis	Discount + Complexity	The trade-off between increased complexity of CP and potential cost savings
	Discount + Supplier Loyalty	The trade-off between being loyal to an existing supplier and potential CP cost savings
	Discount + Time	The trade-off between additional time for CP and potential cost savings

Table Notes:

¹This difference impacts the costs of adopting CP in terms of changes to scheduling, logistics, storage, and infrastructure.

²This difference sets the minimum order quantities and pricing tiers for material cost and delivery.

Throughout the coding and analysis process, tactics advocated by Yin (2011) were employed to ensure validity and reliability. Construct validity was maintained through protocol development so that collected data addressed the research questions. The researchers have several years of sector experience and one team member is an expert and former brewery manager. The interview protocol was piloted with a brewery and feedback was used to improve question clarity. Data was collected from buyers, suppliers, and industry experts to capture different perspectives of buying transactions, particularly from the collaborative group, to enhance objectivity. Interview data was triangulated with company documents and website information. The case context, case selection and data collection processes are detailed and the number of contributing firms, along with their diversity, are representative of the Welsh brewing industry. To ensure reliability, a case study database was created that contained the

interview transcripts, secondary data, and correspondence. The analysis report and group feedback session for checking validity are mentioned above.

4. Findings

The study identified scale asymmetry, differentiation and governance as conditional dimensions that influence CP viability. These factors influence the practicalities of implementation and the potential economic benefits of CP. The economic benefits are the **reduction in the total cost of procurement** available to the breweries participating in a group scheme when compared with their individual buying schedule. This includes costs associated with purchased goods prices, transportation to production facilities, storage of inventory, administration/management, and capital expenditure if required.

4.1 Scale asymmetry

There were significant horizontal and vertical scale differences amongst the supply network participants that influenced the effectiveness of a CP strategy. **Vertical asymmetry** refers to the differences in scale between buyer–supplier, which can be substantial in the brewing industry. There are five large malt suppliers in the UK that all produce a similar annual tonnage (250,000 tonnes), dwarfing the collective requirements of the Welsh craft breweries (2,000 tonnes). Conversely, a single multinational brewing operation in Wales has the capacity to consume 85,000 tonnes. Disparity on this scale diminished the buying power of the Welsh craft breweries such that the malt supplier could dictate terms. The environment of highly concentrated suppliers is the legacy of a supply chain that is geared towards national breweries and international drinks producers. Similarly, bottle suppliers are very large companies: *“For a few brewers to get together and say, ‘We’ll bring all our business to you’, they sort of look at you and go, ‘And?’ When they’re selling a million a day to [buyer] and you say, ‘We can send our 5000 a week’”* (Brewery B1).

From the suppliers’ perspective, they were reticent to sell to a procurement collective because of perceived complications. They expressed concerns regarding material traceability, guaranteed payment and group stability. *“From a quality perspective and traceability, it worries me, it’s managing it, and invoicing and quality control of it all. It’s a bag of worms”* (Supplier S1). The supplier wanted to maintain control of the supply chain, procurement process and current profit margin. Size asymmetry along the supply chain meant that the breweries needed the supplier’s endorsement to implement CP which was unlikely unless suppliers received

benefits. *"If the suppliers don't see a commercial benefit, they're not going to be interested"* (Consultant C2).

Horizontal asymmetry refers to the size/sales volume difference between firms operating at the same supply chain tier, i.e., the collaborating breweries. Although the UK brewing industry has progressively consolidated, the number of craft breweries has increased significantly over recent decades because of low barriers to entry and favourable taxation, leading to more diverse Welsh brewery market in terms of sizes, growth and maturity. Within the craft segment, size asymmetry is represented from small, family-run enterprises to established breweries with retail properties. Malt consumption is a convenient measure of size asymmetry because it is used proportionally in beer production. Craft breweries in Wales purchase less than 10 tonnes of malt through to 150 tonnes per annum. This size differential has a significant effect on their operations and price discounts. The smaller breweries order small quantities regularly and cannot accommodate bulk deliveries. According to Supplier S1: *"A lot of these breweries aren't able to take an artic[ulated lorry] or have forklift trucks."* Brewing is a batch process and consolidated orders would require the alignment of production schedules. *'I'm ordering brew to brew, so I'm ordering small quantities because I haven't got a lot of storage space. Even though I'd be saving money, logistically there's no way I could physically hold the stock'* (Brewery B16).

Small batch ordering creates material price disparities between the craft breweries. Larger breweries benefit from pricing tiers and delivery schedules that match the suppliers' preferences, giving them a competitive advantage. Switching to a collaborative model levels the playing field amongst buying members, with the smaller players realising more significant price reductions. This could lead to larger breweries losing some of their advantage. However, this factor is balanced by the larger breweries being able to exert more control over supply chain decisions:

"From any of the big guys, a willingness to share their discount, such that they might get a tiny bit more, as long as the smaller breweries around them were willing to have the same supplier" (Brewery B9).

Scale asymmetry exists in production, which is tied to the volume of beer produced per batch. This impedes capital equipment CP because of different vessel sizes, which are often bespoke manufactured. *"It just depends on the equipment. When we had our new brewery put in we specifically had it designed because we needed that flexibility"* (Brewery B10). For consumables, the malt supplier provided small discounts based on volume, but more significant price breaks connected to their delivery and packaging format. Full pallets of a single ingredient by-passed multiple picking and packing operations that add cost. Drink

containers (bottles, cans, etc.) are also bulky items and opportunities for cost reductions are partially obtained from full truck deliveries, again benefiting larger orders. Hops are ordered in smaller quantities and require refrigeration to maintain shelf life which affects bulk ordering by some smaller firms. Labels are highly customised for brand identity making CP unfeasible.

4.2 Differentiation

The respondents recognised that large drinks producers are a target for taking market share, but they were perceived as unassailable. This meant that the craft breweries had to compete against both the multinationals and one another using their main strategy of differentiation:

“It’s hard to compete with the big guys, even though that’s where the market share is... they have non-competitive activities... which keep the little guys out. So it forces us to compete with each other” (Brewery B15).

However, differentiation runs counter to material standardisation so breweries need to find sufficient common items or services to purchase together to enable CP. In the craft brewing industry, differentiation is driven by product ingredients and brand identity. Certain **ingredients** can be used to create unique products for market differentiation. Thus, CP should allow a wide variety of ingredient choices without affecting service or product quality. The overriding brewery response to CP was that it should have no impact on their end-product: *“The finished product has obviously got to not change its flavour profile and not be diminished in its quality”* (Brewery B10).

For efficient CP, some breweries would need to change their supplier and/or raw materials. There was a general willingness to change supplier if discounts were significant and the same materials were available. *“I think we’d be happy to change supplier, but it would be subject to the brewers saying that they’re happy with quality and the choice available”* (Brewery B2). However, they were unwilling to compromise on material substitution that would impact their product. Breweries regarded flavour profile as a critical product feature and essential to their unique selling proposition. *“I’m not specifically tied to [supplier], but I do insist on using proper German malts just to try to match the flavour profile of a real German lager”* (Brewery B5). Also, referring to a specific ingredient: *“We’ve used it since we started, so if something was built up to go and work with [X supplier] or somebody else, our beer would taste totally different”* (Brewery B8). Others saw potential for the CP of ingredients *“because we’ve changed them three times now and we’ve seen no deterioration in quality”* (Brewery B12).

External features, such as packaging appearance, are sensitive to unique selling propositions, as they promote **brand identity** :

"I try to differentiate my brewery by being a bit more upmarket, using high quality labels, gold foil and things that make it look like a premium product. That's the main obstacle... buying the same stuff... it diminishes the brand identity" (Brewery B5).

Many breweries identified packaging materials as an opportunity for CP. They could be purchased as standardised items but then differentiated based on the level of customisation required:

'Caps, possibly as long as they're not printed, then boxes, but anything that makes it bespoke, you're going to struggle... there's going to be no bulk purchasing of labels because they're all unique" (Brewery B12).

Some resources do not impact less sensitive on product differentiation in the market, such as utilities. *"I would say power and water, because we're now allowed to change water supplier, even though it's the same water that comes through" (Brewery B1).* Similarly, there are alternative options of purchasing energy in the UK. *"there's so many platforms out there to procure energy jointly now that it doesn't need to be industry specific" (Brewery B3).*

4.3 Governance

The respondents needed a supply chain governance system that addressed both the structures and rules, along with the mechanisms (formal and informal) that enable collaboration. The **organisational structure** defines how activities could be delegated to achieve the group's goals. Several organisational forms were identified but there was a strong preference for a 3rd party governance structure. *"For it to be truly effective, you're going to need to have an independent hub... that is somewhat blind to the other brewers" (Brewery12).* Placing orders for purchasing certain materials through a 3rd party addressed the concern of sharing proprietary information amongst competitors.

Trust issues could also arise from the new operational procedures, such as bulk delivery to a centralised location. *"If it's going to be delivered to their place, you need to know that it's [going to] be looked after for a start" (Brewery B20).* All collaborative organisational forms place limitations on supply chain decision-making and the extent of member influence. The breweries preferred supply chain autonomy that provided choice, flexibility and agility, which is difficult to achieve with a group.

Formal governance mechanisms cover the rules, contracts and standards to enable CP transactions, but they create potential issues. Brewer B15 sees challenges in aligning orders: *"Having to agree on certain dates and times, not just to place the order, to get the information*

to place the order.” Contracts were deemed necessary for the functioning of a CP scheme: ‘If it was to work where there was a joint purchasing agreement... but the maltster had guaranteed sales’ (Brewer B12). These contractual concerns were reflected by suppliers: ‘If you had 10 breweries and for whatever reason, one of those breweries fell out of the relationship, the contract would have to be structured so that everyone else picks up the tab’ (Supplier S3). However, some brewers were concerned about these types of formal arrangements: ‘They’d want to make sure they get the malt, but they wouldn’t put themselves into a legally binding contract’ (Brewery B6).

Social bonds reflect positive emotions between members and act as an **informal governance mechanism**. Breweries were willing to engage with each other to attain CP benefits, despite competing in the marketplace. *“We all get on pretty well in the industry, which is a good thing. There’s a lot of trust between brewers... If I think of something like collaborative purchasing I’d be open to working with anybody” (Brewery B10). Although, there were relational issues with specific brewers: “a lot of people won’t work with [X] because I think [name] was just trying to make too much money” (Brewery B8). One brewer acknowledged the increased effort of collaboration but felt that the total cost savings and improved industry relations were a benefit:*

‘It wasn’t like we want to do this because it’s going to save us money because it’s going to be more effort than just doing it yourself, it’s good to have good relations. So that’s part of the motivation’ (Brewery B2).

Overall, for the highly independent craft brewing industries, governance structures and formal mechanisms created undesirable changes to their autonomy. Also, the competitive dynamic between participating firms meant that an independent party was needed for most CP activities. However, many breweries felt a high level of trust within their community, which could potentially be harnessed to mitigate competitive concerns.

4.4 Cost Analysis

There was not a specific, unanimous cost savings required to switch to a CP model but each brewery made a value judgement based on how these changes would impact their operations. Switching to CP is not a routine administrative task but needs modification of contracts, ordering, delivery, storage, and payment protocols. Total cost savings can be eroded by indirect costs generated by the new procurement model. Price discounts from

pooled orders need to compensate for the impact of increased complexity, shifting from a trusted supplier and time requirements, which in turn need to be quantified.

The breweries had dyadic relationships with their suppliers and CP was perceived to add coordination **complexity**. Brewery B7 was *“not particularly keen to be involved in collaboration... due to the complexity of logistics”*. CP adds an additional layer to the buying process and restricts purchasing choices. Complexity is one of the factors that should be weighed against the total cost savings. *“I would take a 1% saving if it didn’t add to any complexity and if it was, then we need to try and cost it somehow”* (Brewery B12).

The suppliers had no tolerance for increased complexity. Supplier S1 stated that *“from our point of view, it just needs to simplify the supply chain. Something like this can’t make life harder for us.”* To avoid increased complexity, the CP governance mechanism from the breweries side would have to buffer the supplier:

‘Should Brewery A need more malt than his 50 [tonnes], you need a mechanism for how they get more because they’ve finished their part of the contract up. Does Brewery B sell them some or transfer some to their contract? What if Brewery D wants to leave because he’s got a better deal somewhere else? Does everyone else pick up the deal?’ (Supplier S3).

Supplier switching costs impacted some breweries due to supplier loyalty based on established relationships with good product and service quality. Brewery B3 tried other suppliers but was not satisfied: *“We went away from this supplier on price, but then we came back to him on quality really and quality of service as much as product.”* However, other brewers were willing to change suppliers for the right price:

‘I definitely wouldn’t change my supplier if I was happy with that supplier for what could be a very marginal increase in discount. But if the price was significantly lower through a large scale purchase, I might compromise on it’ (Brewer B9).

Similarly, Brewery B4 had an open mind about CP but recognised that it would be *“added stress, every time I need to order having to then double check with another brewery.”*

Finally, **“time is money”** and there is a cost associated with it. Due to their small scale and limited resources, breweries have minimal time to invest in evaluating new procurement opportunities or adding additional responsibilities to their management activities. However, many felt that CP makes sense for the right savings with minimal effort. *“If it’s going to save me money and it’s not going to be that time consuming, then yes I would be [interested]”* (Brewery B6). Brewer B15 voiced the expectation that any coordination time for CP requires

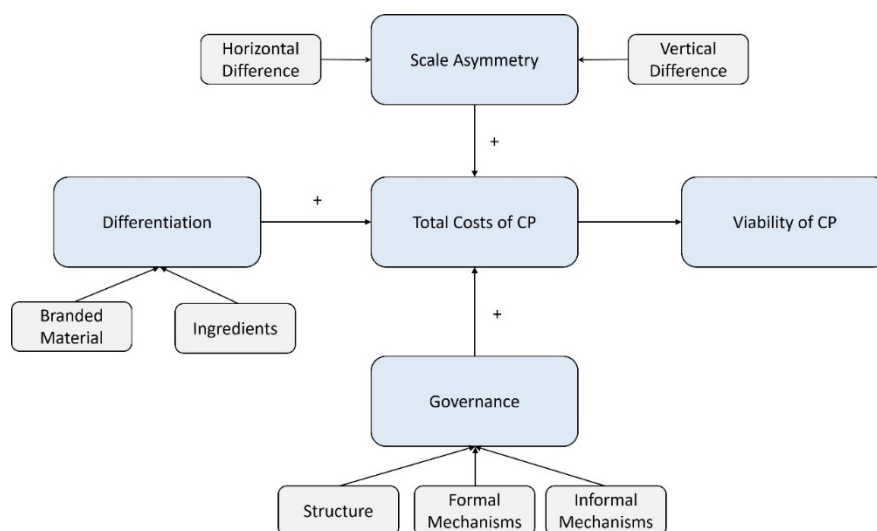
remuneration: *“I think the person or the brewery that coordinates it should get an additional slice of that saving.”*

Overall, the breweries were willing to participate in CP if the total cost savings outweighed the increased complexity and time expended to initiate and manage the process. Although, they expressed non-negotiable points. Shared equipment was perceived as problematic: *“If we’re sharing this device there’s going to be a lot more trips back and forth to pick up the device because we want to use it”* (Brewer B2). A joint storage facility was posed as a potential alternative but complications arose with location, stock management and certification because a bonded warehouse (tax and duty liabilities) would be necessary for finished goods. These “hidden costs” must be offset by the discount given by suppliers for ordering in bulk. In such a concentrated industry, powerful suppliers manage these discounts and they were based on operational costs such that if CP improved their efficiencies, the cost savings could then be shared with the breweries: *“The main benefits from a supply chain point of view are [going to] come from picking and logistics saving”* (Supplier S1).

5. Framework & Discussion

The aim of this study was to understand the conditions that promote CP as an economically favourable sourcing strategy for small enterprises, contextualised within the Welsh craft brewing sector. Our findings revealed three major factors that influence the perceived benefits for the supply network and the resulting framework is shown in Figure 1.

Figure 1. A framework for determining collaborative procurement (CP) viability amongst competing firms. Inter-organisational scale asymmetry, marketplace differentiation strategy and group governance all influence scheme profitability.



Scale asymmetries between supply chain players, differentiation in a competitive market and governance issues all contribute to the rising costs of a CP initiative. Our results show how these mechanisms can be leveraged and limited in the context of small breweries.

5.1 Scale asymmetry and total cost savings

Our results show significant vertical and horizontal supply chain size asymmetry, which creates barriers to the adoption of CP in the craft brewing industry. According to Resource Dependence Theory (RDT), organisations are linked through interdependent relationships, which are needed to gain access to critical resources for their operations (Pfeffer and Salancik, 2003). For the breweries, the asymmetrical nature of the supply chain leads to a power–resource dynamic in favour of the suppliers such that they can control the entire procurement process (Wontner *et al.*, 2020). The mechanism of combined purchasing power (Essig, 2000) amongst the breweries was insufficient to negotiate more favourable terms despite the threat of finding an alternative supplier. The findings agree with Nyaga *et al.* (2013) that powerful entities control the relationship and resist adapting their behaviour for the weaker partner. However, even powerful suppliers (i.e., maltsters) are willing to collaborate with a buying group if they can share the benefits through supply chain efficiency savings. Keskinocak and Savaşaneril (2008) found it necessary to ‘determine the conditions that make collaboration profitable for the supplier’ but rather than ‘selling a large quantity to a single buyer, the supplier prefers to sell to multiple buyers in smaller quantities.’ Our findings confirm their model, which leads to the first proposition:

P1a: For SMEs, increasing vertical scale asymmetries along the supply chain leads to decreasing total cost savings associated with CP.

A less studied phenomenon is horizontal scale asymmetry, which created an interesting trade-off between potential cost savings and inter-organisational influence. Cygler (2018) points out the benefits of coopetition but notes the downside of loss of control, which falls on the weaker parties (Michalski *et al.*, 2019; Gnyawali and Park 2009; Nyaga *et al.*, 2013). Each brewery had individual contracts with their suppliers, which led to complications when negotiating a collective price. As a result of horizontal asymmetry, the smaller firms stand to gain superior material cost reductions. Meanwhile, larger firms tend to achieve marginal economic benefits but have an increased influence on the procurement process (Flanagan *et al.*, 2018; Keskinocak and Savaşaneril, 2008). The power dynamics at work in vertical relationships are also evident amongst the breweries, according to Chen and Roma (2011), this disparity can bring unfairness to the coalition because of an unequal distribution of benefits, costs, and risks. However, the success of SME collaboration with larger producers within the brewery

community (e.g., Brewdog in Scotland or Sierra Nevada in the USA) raises shared optimism and the possibility for craft breweries to work collaboratively with large players for market development (Cunningham and Barclay, 2020; Shilton, 2016).

Ironically for the Welsh breweries, the primary driver for horizontal collaboration was vertical asymmetry but horizontal asymmetry limited its efficacy. Despite these issues, brewers are motivated towards CP (Yu, 2014) but there needs to be goal congruence amongst participants prior to collaboration with vertical supply chain partners (Ramjaun *et al.*, 2022). In the interests of maintaining certain aspects of autonomy, our research participants are open to exploring alternative collaboration opportunities, including: shared logistics (Prim *et al.*, 2021), joint sales (Kraus *et al.*, 2019), joint festival participation (Lotfi *et al.*, 2021), and joint retail outlets. Another key initiative for craft breweries is knowledge sharing, which can lead to efficiency savings through new product development, process improvement and market insights (Kraus *et al.*, 2019; McGrath *et al.*, 2019; Prim *et al.*, 2021). Such collaboration can be accelerated if the cluster becomes more homogeneous (Dorn *et al.*, 2016) and autonomy is not compromised (Cragg *et al.*, 2020; Provan *et al.*, 2007). The literature suggests that CP tends to be more successful when SMEs share similarities in terms of market base and efficiencies (Yan *et al.*, 2017; Zhou and Xie, 2014). If the craft breweries segment can find enough participants of the same size they can counter the asymmetry issues.

P1b: For SMEs, firm size homogeneity amongst participating buyers will reduce horizontal asymmetries and increase CP total cost savings.

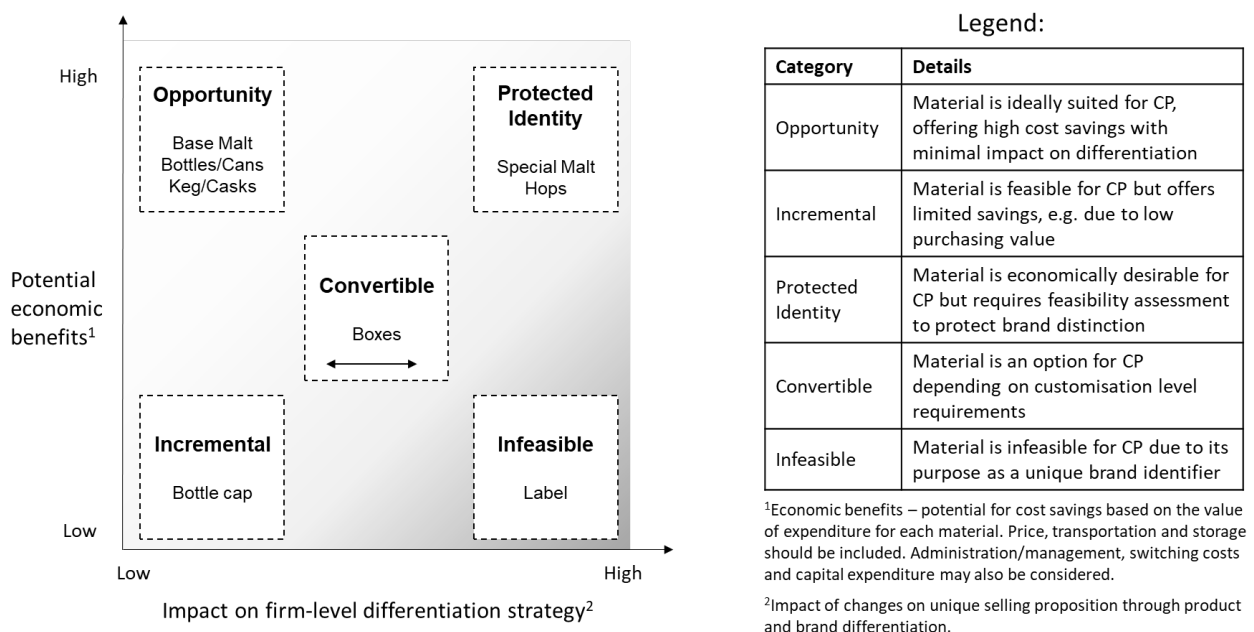
5.2 Differentiation and total cost savings

One of the most interesting findings from this study was the impact of coopetition on supply chain decision-making and the conundrum that it presents for CP opportunities when brand differentiation is perceived as paramount. Essig (2000) recognises economies of scale as a mechanism for cost savings, but this requires a move towards material standardisation to be truly effective (Hirschinger, 2016; Rego *et al.*, 2014). This is a viable option (and may even be mandated) for non-competing or public sector organisations (Gobbi and Hsuan, 2015). However, it is problematic for small breweries because they are unable to adopt a cost leadership position or expand into multiple arenas as their overarching business strategy is based on marketplace differentiation (Porter, 2004, p.37). With this insight, it is not surprising that the breweries were unanimously resistant to changes that affect their unique product identity because it would erode their competitiveness against large drinks producers and other craft breweries (Donadini and Porretta, 2017). In our case, upstream supply chain decisions

can have a critical impact on downstream activities, especially marketing value creation as recognised by Kozlenkova *et al.* (2015).

Despite these complications, differentiation is not an all-or-nothing approach because each input can be judged on its own potential for CP. Our capability matrix (Figure 2) builds on the Kraljic Purchasing Portfolio Matrix (KPPM) approach, which classifies purchased items on criteria such as profitability against supply complexity (Kraljic,1983). However using our matrix, any firm pursuing a CP strategy can plot their inputs within the quadrants and swiftly ascertain their eligibility and impact. Here, we classify items into five categories: *Opportunity*, *Protected Identity*, *Incremental*, *Infeasible*, and *Convertible* – based on their CP economic potential and ability to maintain market differentiation. The matrix is particularly applicable for firms that are engaged in coopetition, i.e., cooperating for value creation while competing for value distribution (Brandenburger and Nalebuff, 1996). The capability matrix manages the differentiation issue so that smaller firms can still benefit from CP efficiency gains.

Figure 2. A capability matrix to identify materials suitable for collaborative procurement (CP). Brewing materials are categorised according to their potential for cost savings and impact on marketplace product differentiation.



The matrix highlights *opportunities* for standardisable material inputs that have little impact on differentiation (e.g. cans) and are purchased in sufficient volumes/value. *Convertible* materials (e.g. boxes) may also be suitable, as company branding can be applied in-house as part of a postponement strategy. This leads to the following proposition:

P2a: For SMEs competing with a product differentiation strategy, inputs with a low product differentiation impact and high potential economic benefits are opportunities for CP.

Conversely, inputs that require *protected identity* are unsuitable for CP (e.g. flavour hops) as they engender differentiation from competitors, although they may offer substantial savings. Similarly, low expenditure items are not an appropriate focus because they only offer *incremental* rewards or are *infeasible* due to their purpose as unique identification (e.g. labels). This is unfortunate but Wales is a relatively small country with clusters of craft breweries in urban and touristic areas such that differentiation is necessary to stand out amongst their peers (Nilsson *et al.*, 2018; Wilson *et al.*, 2022).

P2b: For SMEs competing with a product differentiation strategy, inputs with protected identity or low potential economic benefits are not appropriate for CP.

To overcome these issues, savings may be realised through economies of scope or shared transportation (Ghaderi *et al.*, 2012; Schotanus *et al.*, 2011). Another solution is the manipulation of the production processes with adjustments (time, temperature, quantity of ingredients) to create unique product flavours, colours, and aromas from identical materials within certain limits (Prim *et al.*, 2021). This strategy has been employed in Peru's brewery sector where unique product flavours create a cost-effective competitive advantage (Duarte Alonso *et al.*, 2020). Additionally, Flanagan *et al.* (2018) reported coopetition amongst small U.S. breweries that practice CP, inbound logistics, joint process improvement, and problem solving. Thus, new opportunities for CP are available through services such as utilities or business support services like accounting and information technology.

P2c: For SMEs competing with a product differentiation strategy, inputs that can be differentiated via production processes, as well as services, are opportunities for CP.

5.3 Governance cost

A new organisational structure is required to administer CP and the different types exist on a spectrum between a formalised, third party to manage the operation versus an informal, brewery-led initiative (Bakker *et al.* 2008). Our results show that supply network members are

concerned with CP management costs, particularly a third-party governance structure that may be necessary amongst coopeting firms. This format can address confidential order information and secure storage concerns but is relatively expensive as an independent organisation brings together the buyers and manages their collective contracts (Kumar *et al.*, 2022). Alternatives include cooperatives or piggyback ordering whereby order information is directly shared between firms (Schotanus and Telgen 2007). These may be applicable with the use of digital technologies to collate orders without revealing confidential information. Third party aggregators are not the most cost-effective solution because the breweries cannot use their own staff or utilise group resources, which can occur with other structures. This is problematic because centralisation is a key mechanism for CP efficiency savings (Essig, 2000; Hirschinger, 2016).

In addition, third party structures require formal mechanisms (contracts). Considering CP from a transaction cost perspective, Vining and Globerman (1999) found that costs are incurred due to bargaining and opportunism avoidance. There is a clear economic motivation for the breweries to adopt an 'internal' structure and negate contractual expenses (Bicen *et al.*, 2021). However, these attempts may be thwarted by a powerful supplier demanding formal mechanisms, as seen in this study. Suppliers require guaranteed sales and payment, as well as order alignment between buyers (Pazirandeh and Herlin, 2014). This necessitates formal contracts between buyers and the supplier, who may also demand formal contracts amongst the buying group to ensure payment and stable supply. Thus, the resulting transaction costs apply to both vertical and new horizontal supply chain contracts as suggested by Schotanus *et al.* (2010). Cooperation and coordination of independent breweries are now required for the bundling of volumes, information, and resources (Nollet and Beaulieu 2005; Schotanus and Telgen 2007), and to ensure an acceptable allocation of benefits (Keskinocak and Savaşaneril 2008).

P3a: For SMEs engaged in coopetition, the potential economic benefits of a centralised CP system are reduced by the adoption of an independent, 3rd party governance structure.

To increase total cost savings, the breweries need to leverage CP centralisation through an alternative structure and consider its operation through informal means. The literature advocates relational governance, as a non-contractual mechanism that allows small companies to build trust, manage exchanges, and reduce the cost associated with coordinating and managing complex contracts (Prim *et al.*, 2021; Provan *et al.*, 2007). The brewery respondents spoke of a general feeling of trust amongst one another, with minor exceptions. This aligns with the Relational View of interorganisational competitive advantage,

whereby working together collaboratively, the firms can develop relation-specific assets, knowledge-sharing routines, and complementary resources/capabilities (Dyer and Singh, 1998; Lotfi *et al.* 2022; Walker *et al.*, 2013). An initial formal governance structure can enable trust building amongst brewery cluster members; however, it was not reported in our study because smallness creates a barrier to producing expensive legal contracts (Cragg *et al.*, 2020).

The participating breweries in our study were inclined towards social contracts to create an economic exchange system (Provan *et al.*, 2007). However, the downside of social contracts is the onus of managing and collating orders (i.e. doing the leg work), which may fall on one or two breweries and could lead to a breakdown of the alliance (Cygler *et al.*, 2018). This can be countered where differing levels of formality can be exploited. In the case of brewery network social contracts, Ramjaun *et al.* (2022) reported that network rules, regulations and contributions can still be agreed upon and established to minimise 'free rider' opportunistic behaviour. Although non-legally binding, peer pressure and scheme benefits can curtail opportunism. Also, to improve the efficiency of centralisation and utilise social contracts there is an opportunity to integrate CP with other initiatives (Flanagan *et al.*, 2017; Lotfi *et al.*, 2021). This synergistic approach means that the costs associated with a centralised body are now spread across additional activities such as joint marketing and sales. Some of the Welsh breweries had informally collaborated on other initiatives and recognised that CP could foster business relationships and have the potential to boost the whole craft brewing industry (Dodd *et al.*, 2021).

P3b: For SMEs engaged in coopetition, the potential economic benefits of a centralised CP system can be enhanced through informal mechanisms and an internal group governance structure.

P3c: For SMEs engaged in coopetition, the potential economic benefits of a centralised CP system can be enhanced through the simultaneous development of industry-specific capabilities.

6. Conclusion

This study elicits the conditions for enabling CP amongst small, competing breweries in Wales as an economically favourable sourcing strategy. It investigates CP in an unexplored context (craft brewing industry), under the circumstances of coopetition. Research on CP amongst SMEs in the private sector is particularly limited (Oesterbeck, 2015) and our study extends previous work conducted in the non-for-profit sector, where competition is not significant and

cooperation is managed through institutional policy (Walker *et al.*, 2013). We identified three dimensions that influence viability – horizontal and vertical inter-organisational scale asymmetry; a differentiation strategy adopted by the coopeting firms; and governance structure of the new procurement system. Ideally, small enterprises should aim for group homogeneity, standardisable procurement items and establish an internal governance structure in conjunction with other collaborative initiatives.

The first theoretical contribution considers the interaction between horizontal and vertical scale asymmetries and the impact on CP effectiveness. High scale asymmetries tend to increase the total cost of such a scheme (Michalski *et al.* 2018; Gnyawali and Park 2009; Nyaga *et al.* 2013), which is likely to be encountered by most SMEs across the food and beverage industry. Within the Welsh craft brewing sector, horizontal asymmetry can be profound (up to 10-fold production volume/revenue disparity). This is not unusual because it is a scalable industry with low barriers to entry. Excessive asymmetry leads to an unequal distribution of CP benefits and presents the issue of firm-level operational constraints that may prevent participation without prior infrastructural investment. Vertical asymmetry (large supplier, small buyers) provides a motivation for CP amongst SMEs and can be addressed in two ways. If the collective bargaining power of the CP participants is sufficient, they may demand lower prices from their suppliers through aggressive action (Nyaga *et al.* 2013; Fu *et al.* 2020). If this purchase order threshold is not reached, a cooperative (supplier-buyers) approach is required that attains cost reduction through supply chain efficiency savings.

A second contribution is for industries where product differentiation is particularly salient (e.g. consumer packaged goods) because CP is restricted to input materials that do not diminish their value proposition. This is problematic for craft breweries (and similar small producers) because they are competing against large enterprises with low-cost inputs, such that they need to reduce their cost of goods sold but simultaneously rely on a differentiation strategy as their competitive advantage. This presents a conundrum, which can be solved through nuanced analysis of each procured item and its impact on marketplace differentiation and “bottom line”, as preceded by Kraljic (1983).

Third, this work contributes to understanding the governance structure appropriate for managing CP. The participating craft breweries are competing against large producers and each other, such that the coopetition dynamic affects the form of governance. Competition and differentiation may require a more costly structure, such as third-party aggregators and formal mechanisms (contracts). However, this may be countered by enhancing intra-group trust, directing initiatives towards innocuous products and services, and industry-specific capabilities such as knowledge sharing. Previous research has shown the feasibility of

collaborative marketing in the craft brewing sector and synergising collective initiatives may open new opportunities that are impractical at an individual firm-level (Flanagan *et al.*, 2017; Ramjaun *et al.*, 2022).

The research generates relevant managerial implications. Collaborative activities are mechanisms for SMEs to compete in food and beverage supply chains (Zaridis *et al.*, 2020). However, these industries continue to consolidate, leaving a minority of players controlling most of the supply chain tiers. Whilst cooperative structures are common for food producers utilising shared production facilities and/or marketing under one brand, they offer limited feasibility for businesses that rely on product differentiation strategies (Wu and Pullman, 2015). To enable successful collaborative planning, individual producers should procure non-differentiating items/services or protect their identity. Emergent circular packaging strategies would encourage standardised, reusable packaging (bottles and boxes) and other circular activities (logistics, shared facility, cleaning, re-processing, etc.) which are appropriate for CP. Managers could then focus their differentiation strategies on items such as labels and marketing their unique selling proposition. Research shows that millennials prefer craft beer, leading to sector growth and support for agricultural activities (Nilsson *et al.*, 2018; Wilson *et al.*, 2022). In Wales, this could involve local malt and hop producers, making Welsh craft beer a premium product and bringing prosperity to rural Wales (Dwyer, 2018).

The paper provides insights for policymakers concerned about supporting SMEs, particularly in non-urban areas. The F&B industry plays a crucial role in employment and regional economic well-being. Governments are uniquely positioned to influence equitable regional development and enable CP as a viable solution. This can be achieved by supporting an independent third-party aggregator to negate the trust issues generated through competition. Encouraging standardised circular packaging through incentives or regulations reduces differentiation challenges and lowers costs through economies of scale. Investment in sector specific capabilities, such as market research and knowledge sharing forums can aid procurement choices. At the national level, a nuanced anti-trust policy is necessary to prevent industry consolidation and power concentration. Excessive vertical asymmetry leads to increasing horizontal asymmetry, where larger breweries gain disproportionate price discounts from powerful suppliers, leaving most SMEs at a disadvantage.

There are methodological limitations associated with the study. The large (non-craft) breweries that represent more than 50% of the raw material consumption in the Welsh beer sector were not included in the dataset. Although they expressed no interest in CP, they may have had suggestions for alternative joint activities. Similarly, all relevant suppliers could be interviewed to add more depth to a CP feasibility study as well as an understanding their long-

term strategic plans. Logistics service providers were not included in the dataset and could provide a complementary perspective to the buyer-supplier relationship.

Finally, there are opportunities for further research, our study is contextualised within a specific industry and geographical location. Whilst the findings may be relevant to wider consumer-packaged goods sectors, the generalisability into other industries should be tested. Consumer-packaged goods are sensitive to differentiation strategies through signature ingredients and branded packaging. We suggest future research considers CP for SMEs that differentiate in other ways such as service-based industries, manufacturers of durable goods or B2B products. Our study was based in a small country (Wales) which has highly efficient logistics and supplier connectivity, with uniform costs. These environmental conditions mean that in our case, the location proximity factor was less relevant. However, the impact of geographic dispersion for buyers relative to each other and their core suppliers, especially over large distances such as North and South America, needs to be considered. Similarly, producers in this study had relatively small price discounts for volume increases. This could be substantially different for other industries and material categories, especially when transportation is a factor. From a supply chain perspective, what is the impact of localised supply to smooth brewery sourcing inefficiencies and uncertainties? For example, could communal backward integration of malt/bottles production and processing be an avenue for CP? Finally, further research is needed to gain understanding how participants' privacy can be enhanced through other technologically based mechanisms, e.g., blockchain, to mitigate the cost of an independent procurement party.

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