A critical exploration of bargaining in Purchasing and Supply Management: a systematic literature review

Abstract

Bargaining with suppliers is a key Purchasing and Supply Management (PSM) activity but there is considerable ambiguity over what bargaining entails and the concept currently lacks a systematic treatment, despite its significant interest to PSM professionals. The literature shows that bargaining can be seen as an adversarial approach to negotiation (in contrast to more integrative/collaborative ones) and also the back-and-forth discussion over price and other variables between buying and supplying organisations to reach an agreement. In addition, many will move between fundamentally distributive and integrative approaches as the discussions play out. A systematic literature review of the Scopus, ProQuest, ScienceDirect, JSTOR and Web of Science databases was undertaken to address this gap, identifying 432 relevant journal papers that were systematically analysed. First, descriptive techniques identified the trajectory of published papers, methods, theories and their industrial context. Second, content analysis identified the key constructs and associated operational measures/variables of bargaining. Third, the constructs have then been ordered temporally and by areas of location (organisational/departmental and individual levels) to generate a model and inform a series of practice-based recommendations at different stages of the bargaining process. The findings will allow future researchers to use the constructs either directly in developing focused hypotheses to test relationships or as a basis for refinement and extension in cumulative theory building and testing. In addition, a series of focused research gaps have been identified, such as addressing the current contradictory findings of the effect of purchasing volume or organisational size on bargaining power.

Keywords: Bargaining, Negotiation, Literature Review.

1 Introduction

1.1 Negotiation

Negotiation is the interpersonal back-and-forth communication that allows two (or more) parties to come to an agreed-upon joint decision when they have oppositional (and sometimes shared) preferences and interests (Fisher et al. 1991; Bazerman and Moore 2008). It is an ubiquitous part of life and individuals engage in these processes regularly in both their private and professional lives (Vetschera 2013).

In a commercial context, Business-to-business (B2B) negotiation is an integral part of business activities (Li et al. 2002) and can be seen as: "…the application of general negotiation principles to business settings, such as buying tangible or intangible goods, or acquiring services" (Li et al. 2002: 24) and is a critically important element in the exchange of goods and services between organisations (Anderson and Narus 1990). The decisions and choices taken in the negotiation process affect organisational outcomes and potentially their overall profitability (Balakrishnan and Eliashberg 1995) through the inter-organisational exchange of resources, such as goods, services, skills and information (Barnum and Wolniansky 1989). In the Purchasing and Supply (PSM) context, individuals, acting as representatives of buying and selling organisations, negotiate to match supply and demand factors and these are often complicated by the need to reflect a range of stakeholders in a single negotiation (Eklinder-Frick & Åge 2017; Lempereur & Pekar 2017). Negotiation skills and competencies are regularly identified as being important and seen as a key driver of organisational competitiveness (Tassabehji & Moorhouse 2008; Bals et al. 2019), in particular, as being a key cost-saving lever (Úbeda et al. 2015).

1.2 Strategies and approaches

Both research and practice have tended to perceive negotiation as being largely based on two broad strategies (Walton & McKersie 1965). First, a distributive strategy that refers to the behaviour negotiators adopt when they try to claim as much value as they can for themselves, which leads to fundamentally win-lose outcomes. It is often this type of negotiation, i.e., "adversarial bargaining [that] most people think of when they think of negotiating: haggling over price, getting to the bottom line when one dollar more for you is one less for me" (Buckley 2001: 181).

Second, an integrative strategy, where more collaborative behaviours are focused on creating joint value leading to win-win outcomes and: "…in bargaining co-operatively, negotiators seek common ground…they communicate a sense of shared interests and values and use reason and logic to seek co-operation. Their goal is to reach a fair and just agreement" (Buckley 2001: 181). Developing these broad strategies, Fisher and Ury (1991) popularised a distinction between interest-based (principled) negotiation, being a more structured integrative approach that relies on identifying the interests of the other party and then generating options to reach a mutually acceptable agreement, and then competitive bargaining, which is essentially the same as adversarial bargaining (Buckley 2001). In B2B negotiations, it is often perceived that negotiators are more satisfied with an integrative strategy (Fleming and Hawes 2017), but it has also been noted that both integrative and distributive tactics may be deployed in the same bargaining situation (Preuss and van der Wijst 2017).

1.3 Process perspective

In common with other PSM activities, negotiation has been distilled into a series of process-based steps (see Vetschera (2013) for a useful summary). These range from relatively simple models showing steps in which a negotiator makes an initial offer and establishing rules when it is 'best' for the other party to accept this offer, what counteroffers should be made and when to quit the negotiation (Lopes and Coelho 2010). Others are more activity-focused, in which: "…at least three steps are traditionally identified...including planning or preparation; negotiation, bargaining or interaction; and striking a deal" (Agndal 2017: 493) and other more complex ones, such as Adair and Brett's (2005) negotiation dance, that encompasses time, culture, and behavioural sequences.

Seeing bargaining as a set of specific activities within a wider negotiation process, we can identify early modelling work that generated two major process approaches (Tutzauer 1992) to explore bargaining. First, those that are static in nature and use only general characteristics, and second, those developed in the 1950s and 1960s using Game Theory that shows the process as being one of an offer-by-offer basis (Harsanyi 1956; Bishop 1964). These models can be simple in nature, in which the discussion, exchange and agreement on bargaining issues, focus on single-issue variables and concessions. Of note is the Nash equilibrium, which: "…is a set of strategies, one for each of the n players of a game, that has the property that each player's choice is his best response to the choices of the n–1 other players" (Holt and Roth 2004: 3999). Examples are Raiffa's model (1982), in which the decisions of one party are based on the other's proposal which may also lead to a change in the offer(s) being made.

Multi-variable/issue situations become considerably more complex, as negotiators may take multidimensional positions by changing how demanding they are across a range of concessions. Later models have explicitly considered these types of negotiations. John and Raith (2001) factor in the possibility of these different issues and Tajima and Fraser (2001) develop a log-rolling approach where two parties mutually determine how to improve both their negotiation positions. Similar approaches can be seen in work such as Ehtamo et al. (2001) which factors in situations where the negotiator's preferences are affected by incomplete information. Despite these models developing the perspective of multi-issue bargaining, they are still somewhat restrictive, i.e., John and Raith (2001) only deal with one issue at a time and Tajima and Fraser (2001) only consider one possible trade-off step.

Classical game-theoretic bargaining models do provide a useful normative perspective on achieving the optimal outcomes for a bargaining situation, but they are only really suitable in defined situations with clear parameters. As such models are not intended to be descriptive representations of actual negotiations, they consequently do not provide full instructions for negotiators to choose which courses of action will lead to the most optimal outcomes (Lau, 2008). Therefore, there still remains the opportunity for research to assist individuals to bargain more effectively (Raiffa 1982) in how they deploy tactics, rather than focusing on (just) the variables themselves, as these may affect the later relationships that are developed with the other party (Kun-Chang and Soon-Jae 2006; Theron et al. 2008).

1.4 How has bargaining been defined and categorised?

There is a wide range of negotiation research in many other fields, such as labour relations and politics (see Agndal et al. (2017) for a useful literature review in the B2B field) and in PSM on the wider context of negotiation. However, given the importance of bargaining evident in the strategies/approaches to and the processes of negotiation, this specific aspect of negotiation has received far less academic intention and clarity on what actually happens during B2B negotiations remains scarce (Fells et al. 2015; Geiger 2017). As seen in the above discussions, there is conceptual and definitional ambiguity about the bargaining concept and the terms 'bargaining' and 'negotiation' are often used interchangeably (Warntjen 2011; Steinel and Harinck 2020).

What can be distilled from the extant literature, is that bargaining, as being synonymous with 'haggling', can be seen as a specific type and approach to negotiation in which two parties dispute an issue (often price) with the goal of coming to an end agreement. This adversarial approach is mainly contrasted with more integrative and collaborative ones as proposed by Walton and McKersie (1965) and Fisher and Ury (1991). Second, bargaining may also be seen as those discussions in which parties attempt to reach an agreement over a narrower range of variables/requirements (often price) and is contrasted with those negotiations that are more complex with multiple issues (Rubin and Brown 1976). Third, bargaining can be seen as a specific stage in the negotiation process consisting of activities such as opening and evaluating options and reflecting the back-and-forth discussions between two or more parties as they strive to reach an agreement.

Although bargaining is most closely associated with competitive/adversarial approaches and despite Fisher and Ury's (1991) assertion that principle, interest-based, cooperative approaches are the best choice, it is clear that individuals and organisations do not necessarily follow just one and may change during negotiations with suppliers. However, it is clear that some form of back and forward discussions are needed, even when they are seen as being more integrative in nature. Further, individuals and organisations may adopt both integrative and distributive approaches depending on what the negotiation situation requires. Haggling has been covered extensively in the consumer-focused literature but is seen as a 'dark art' of B2B negotiations and considered somewhat unsavoury, although it has been noted that: "…once the end game is reached, an adversarial strategy is usually required to achieve the best result and an attempt to avoid conflict at this point will often lead to a less than optimal result" (Buckley 2001: 183). We suggest that the prevalence and possibly the importance of bargaining, as the 'haggling' and discussion activity in the middle of the negotiation process is more prevalent in what Fisher and Ury (1991) term competitive bargaining, there will nonetheless be similar activities sometimes deployed in principled negotiations. In addition, purchasing portfolio approaches, for example, Kraljic's matrix, identify categories of spend that necessitate more adversarial approaches to supply management and how suppliers in these categories are negotiated with. Therefore, this research will be useful for a range of negotiation scenarios.

This paper aims to provide greater clarity through the identification of robust constructs and variables/measures that will generate a fuller understanding of what is meant by bargaining and complements the extant B2B negotiation literature. The contribution of this paper is to synthesise the extant literature by first describing its current state and then making an explicit theoretical contribution by establishing a set of constructs and measures/variables that are then developing a model which orders these temporally and where they are most often located, i.e., at the levels of the organisational/departmental, individual and a mix of the two. This will complement existing work, such as Agndal et al. (2017) which looks at the wider negotiation context, those that focus on other parts of the negotiation process, e.g. Peterson and Lucas (2001) which looks at the preparation phase in business negotiation and those from a seller's perspective (e.g., Simintiras and Thomas 1998) which, whilst useful, will naturally promote ways in which selling organisations can increase their bargaining power or bargain more efficiently. Looking further ahead, the potential for increased usage of Artificial Intelligence (AI) in the bargaining process (Gottge et al. 2020) suggests a clearer understanding of bargaining is needed to help establish parameters and rules for such systems.

This rationale has been used to establish three focused research questions and follows the approach of Ali et al. (2017) in which a literature review was used to integrate the constructs in a concept mapping framework for supply chain resilience:

RQ1. What are the theoretical and methodological trends in PSM bargaining research?
RQ2. What are the constructs and measures/variables used to define bargaining?
RQ3. How do the bargaining constructs interrelate to improve conceptual clarity and generate practice recommendations?

The paper is structured as follows. First, the methodology sets out the parameters of the systematic literature review and the process of identification and analysis are explained. Second, the findings and discussion section is divided into two parts. The first adopts a descriptive approach to address RQ1 by identifying how the extant literature has theoretically and methodologically approached the field and the industrial contexts in which the research has been conducted. Then an analytical approach to the development of the constructs and measures/variables (RQ2) and their amalgamation into a temporally and location-orientated model (RQ3). Finally, the gaps identified are distilled into relevant and focused areas for future research and the limitations of this research are highlighted.

2 Methodology

The methodology of this paper follows the often-used approach of Denyer and Tranfield (2009) and one that is used in similar systematic literature reviews in the field (e.g., Ali et al. 2017;

Chicksand et al. 2012; Walker et al. 2015), with the first four steps shown in this methodology section and step 5 appearing in the findings and discussion sections.

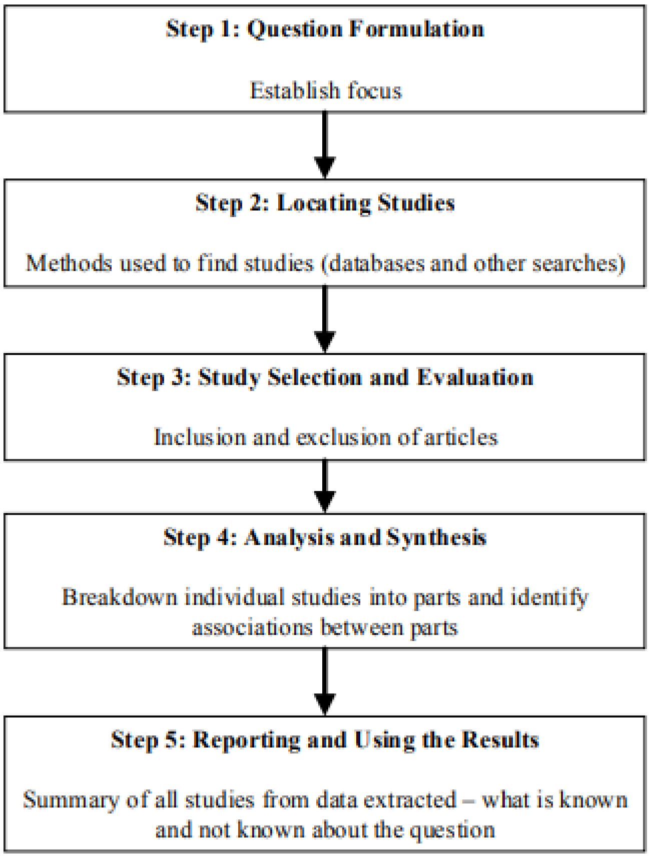

Fig. 1 Steps for Conducting a Systematic Literature Review (Denyer and Tranfield, 2009)

2.1 Step 1 – Focus

This integrative review aims to assess, critique, and synthesise the literature to, first, provide a descriptive commentary on the extant PSM perspective on bargaining (RQ1) and then second by building theory through the clear development of constructs and measures (RQ2) that are integrated into a temporally and location orientated ordered model (RQ3). Following the robust approach outlined in guidance from Post et al. (2020), it generates construct clarity in the form of precise definitions to help future researchers develop the measures and measurements of constructs (Byrne et al. 2016), as this is at the core of theory building (Venkatraman 1989). A fuller understanding of these mechanisms helps to open up the 'black box' and reveal the social 'cogs and wheels' (Hedstrom and Wennberg 2017) in the inherently social processes of bargaining.

2.2 Steps 2 and 3 – Locating studies and study selection and evaluation

To capture a wide spread of literature, multiple databases were used: Scopus, ScienceDirect, Proquest, JSTOR and Web of Science to minimise bias and cover a broad range of sources (Ali et al. 2017). Our search terms were informed by those of Bendersky and McGinn (2010: 784), who use "negotiat*" "bargain," or "conflict", but we have extended these to cover a wider range and the following were used in the abstracts of peer-reviewed English language papers: 'bargaining', 'negotiation conflict', 'negotiation dispute', 'negotiation agreement', negotiation offer', 'negotiation discussion', 'competitive negotiation', adversarial negotiation', 'contract theory' in conjunction with 'purchas*' or 'procur*' and (where the database allowed) NOT 'consumer' to give the necessary B2B focus. The number of papers identified from each database is shown in Table 1.

Table 1 Number of papers per database identified using search terms

Database	**Number of papers**
Scopus	401
ProQuest	1141
ScienceDirect	327
JSTOR	94
Web of Science	833
Total	**2796**

This initial search identified 2796 papers and a thorough review of these was undertaken to, first, remove any duplicates (i.e., appearing in more than one database) and second, to reject any papers that were not sufficiently focused on the object of this research, e.g., PSM bargaining and these criteria are shown in Table 2. To support the development of our exclusion criteria, we drew on Eliashberg et al.'s (1995) divisions of marketing bargaining literature (i.e., business marketing, political, labour/management, legal and intra-personal) and Bendersky and McGinn (2010) (i.e., dealing with international treaties or family conflict), with the addition of consumer-focused negotiation and those that have been used in strictly educational contexts. Unlike Bendersky and McGinn (2010), however, we retained papers that dealt with computer-based negotiations, as this is an increasing area of importance in the field with the development of AI technologies and those that contained a group dynamic, reflecting the wide practice of team negotiating.

Table 2 Exclusion criteria (with examples)

Exclusion criteria	**Example**
Consumer (rather than B2B) focused	Hayunga and Munneke (2021) – consumer real estate market Knuth et al. (2021) - intrinsic consumer attributes on decision consistency in houseplant purchasing Brucks and Schurr (1990) – consumers reduce information search when they have the option of bargaining
Political/inter-governmental negotiations	Biermann and Weiss (2021) – the EU's intergovernmental negotiation Doyle (2017) - governmental negotiations for Trident missiles
Marketing perspective	Angelmar and Stern (1986)
Employee-employer relations	Sánchez-Mira et al. (2021) - collective bargaining and employment conditions in the Spanish long-term care sector
Intra-organisational negotiation	Wu and Lu (2018) – transfer pricing between procurement centres and other divisions
Intra-household negotiation	Huang et al. (2021) - married couples expected equal division of housing property upon divorce
Focusing on another stage in the negotiation process	Lin & Lin (2021) - the criteria for supplier selection Thompson and Zumeta (1981) - negotiations between stakeholders for budget allocations
Referring to a "bargain"	Comiskey et al. (2010) - in the specific financial context of bargain-purchase (negative goodwill), e.g., or the legal sense, e.g., Eisenberg (2003)
Bargaining only referred to a recommendation from the findings or in the introduction but is not a core focus of the paper	Liu et al. (2017) and Zhu et al. (2019) - governments should consider using their bargaining power to reduce prices, abolish taxes on essential medicines Standing et al. (2010) - large supplier base is seen as an advantage by some since it improves the bargaining position of the buyer Levaggi (1999) – bargaining is a possible activity outcome if other procurement methods are not successful
No details of the paper could be obtained due to the age of the paper	Vaitsos (1970) Albertson (1989)
Teaching focused	Ahmad (2015) - develop a two-party, single-issue, distributive negotiation case exercise Graham (1984) - describes a business negotiation simulation involving the purchase of capital equipment
Intra public-private partnerships	Sarmento and Renneboog (2021) - bargaining power of private firms/corporate consortiums to extract additional rents to compensate for underbidding at the initial bidding rounds
Corporate acquisitions	Patschureck et al. (2015) - contractual measures to reduce acquisition risk for buyers in corporate acquisitions

2.3 Step 4 – Analysis and Synthesis

After this review, 432 papers were taken forward for a more detailed analysis and to undergo full document screening. Although a direct comparison between the number of papers used by literature reviews is not wholly meaningful, as they have different purposes and search parameters, the number for this paper is in excess of other literature reviews in both the PSM and negotiation fields. For example, Johnsen et al. (2016) used 144 papers to analyse the character and significance of Nordic PSM research, Hoejmose and Adrien-Kirby (2012) used 188 papers to look at socially and environmentally responsible procurement, Eliashberg et al. (1995) used 293 papers to establish generalisations in business marketing negotiations and Bendersky and McGinn (2010) used 225 papers to explore phenomenological assumptions and knowledge dissemination in negotiation research. In addition, as noted by Subramanian and Gunasekaran (2015), using a previous medical study from Guo et al. (2014), a sample size of 100 has less than a 5% margin of error at a 95% confidence interval and this is above that figure.

This data was analysed in a focused manner to address the three research questions and was stored in an Excel spreadsheet to allow for an iterative approach to be adopted. First, and to address RQ1, descriptive characteristics were captured to identify the growth in the number of papers, whether there was an explicit use of theory, the methods used and if there was a focus on a specific industry. These were then counted and this analysis, as well as some explanatory commentary, is provided in the next section. Second (RQ2), for the theoretical development of this aspect of the research, an iterative open coding approach to the analysis was adopted in which the data and the construct and measures/variables were developed. This process involved three main steps. First, identifying the key focus of a particular paper allowed the researchers to either extract the main construct being used or, if not explicitly shown, to develop a meaningful one from the findings. Second, these were grouped into categories according to their core characteristics. Finally, relevant measures/variables were either identified or developed that can be used to empirically evaluate the constructs. To ensure there was both consistency and repeatability the process followed required careful data specification and categorisation. Data was collected and stored in an Excel spreadsheet and an example excerpt is shown below for process purposed, with a more detailed analysis in the findings section.

Table 3 Key data groups

Authors	Year	Theory used	Method	Industry	Construct	Measure/ Variable
Xu et al.	2016	N	Modelling	Energy	Size	Group buying leads to better cost outcomes
Abbott and Reichman	2020	N	Secondary	Healthcare	Size	Centralised coordination by regional supply centres should assist in overcoming difficulties individual countries may encounter in addressing administrative and technical issues in procuring supplies, as well as creating improved bargaining leverage with potential suppliers.
Herweg and Schmidt	2017	N	Modelling	Not specified	Information	Early exchange of information is important to avoid costly renegotiation
Enow and Kamala	2016	N	Survey	SMEs	Tactics	Buying on credit (as opposed to cash) may reduce bargaining power

The final part of this research (RQ3) involved a thematically-based analysis. Thematic analysis helps to identify and organise data sets to find patterns of meaning (Braun and Clarke, 2012). This method was employed to develop a temporally and location-orientated model of bargaining by integrating the constructs and further improving conceptual clarity (Ali et al. 2017). Braun & Clarke's six-phase approach was used: in which the researchers familiarise themselves with the data, generate initial codes, search for and then review potential themes, before defining and naming them and finally producing an output (Braun & Clarke, 2012).

Reflecting Braun and Clarke's (2012) stance on inter-coder reliability as: "…not being an appropriate criterion for judging qualitative work and that quantitative measures of ICR are epistemologically problematic" (O'Connor and Joffe 2023: 4), we focused on achieving a more qualitatively consistent and transparent approach, rather than one which looks to quantitatively measure reliability. We drew on Cofie et al. (2022) and O'Connor and Joffe (2020), by having two independent coders, who both have experience in coding qualitative data following the same inductive approach and focused on the shared meaning of codes etc. and who regularly met to ensure a consistent consensus and agree upon any discrepancies in interpretation.

3 Findings and Discussion

The findings and discussion section is divided into three parts that address the three research questions. First, a descriptive analysis shows the trajectory of PSM bargaining research and identifies the types of research methods and theories used and the industries within which the research takes place (RQ1). This is primarily used to show the state of the research field and also to highlight some potential research opportunities. Second, the thematically based analysis distils the main constructs and measures/variables used in PSM bargaining (RQ2) before, third, a temporally and location-orientated ordered model is developed showing the interrelationships between the different constructs (RQ3).

3.1 Trends of PSM bargaining research

An important aspect of literature reviews is to generate an understanding of the trajectory (i.e., the number of papers published over time) to establish the levels of interest in the field of research. As the search terms were not restricted to a specific time period, this allows for a full understanding of how the field has developed over time, which can be seen in Figure 2. As the data collection was done during the early part of 2023, these papers have not been included in the chart and a paper in 1964 has also been excluded, although these sets of papers were included in the other analyses of the paper.

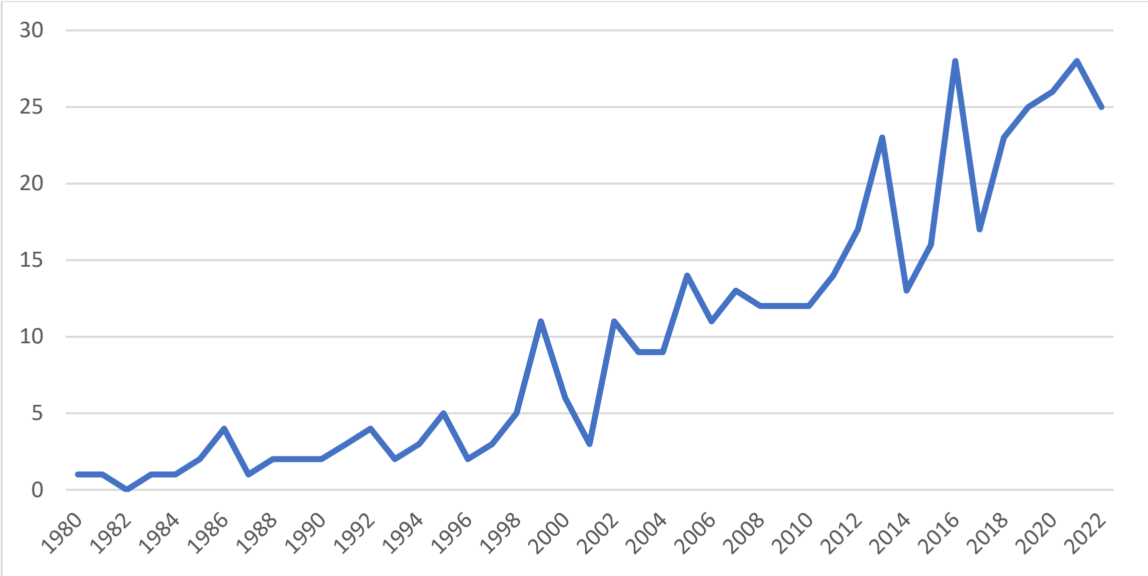

Fig. 2 PSM bargaining publications over time

Apart from a drop in the early 2000s and 2014 and 2017 (although only small numbers of papers are involved), the publication trend shows a clear upward trajectory of research in the field and therefore supports the rationale for this paper's purpose of synthesising and clarifying the constructs and variables/measures that have been used in the PSM bargaining literature as it grows and develops.

Often, key research gaps are established by looking at the methodological approaches adopted in a field, and these are shown in Figure 3.

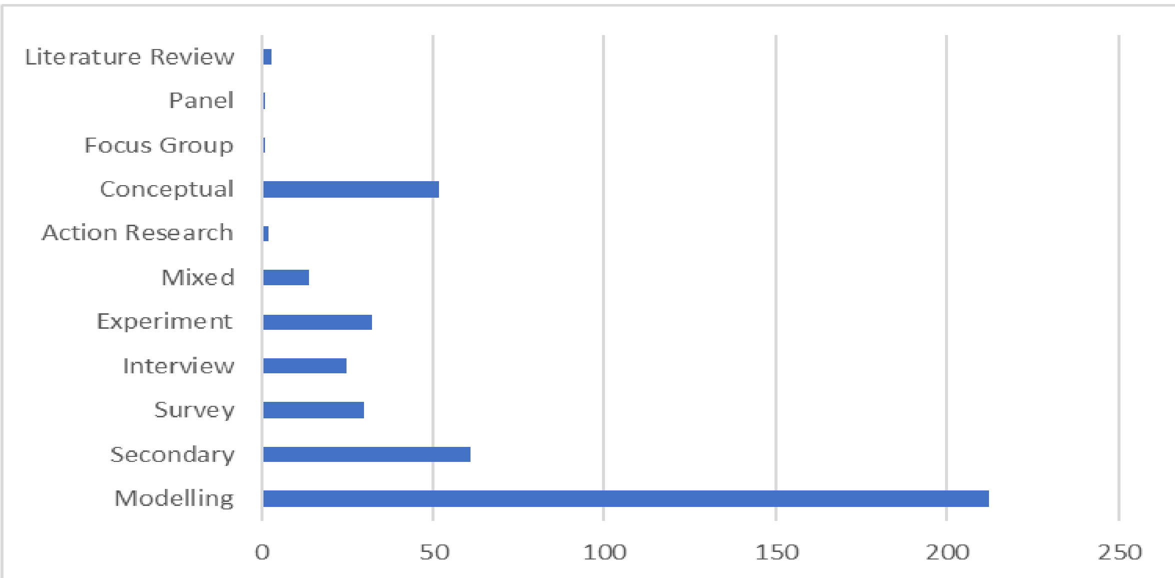

Fig. 3 Methods adopted in PSM bargaining research

The very high use of modelling is, of course, reflective of the challenges in obtaining empirical data from B2B bargaining but does not necessarily allow for the full complexities and richness of real business negotiations, which may involve multiple negotiators and a significant number of variables. Such research may lack the consideration of necessary social factors and possibly irrational behaviours that individuals may engage in when bargaining for goods and services. Similarly, fast-changing macro-environmental contextual factors undoubtedly influence bargaining activities and the complexities of these may be difficult to represent in modelling research. This finding suggests that more empirical research is needed to meet practitioner requirements which may not be fully fulfilled by modelling research that tends to take an idealised and normative approach.

There has been considerable previous work reflecting on the use of theory more generally in logistics, purchasing and supply chain management (see for example Chicksand et al. 2012 and Spina et al. 2016) and operations management (Walker et al. 2015). Although these studies vary in terms of defining what constitutes a theory and the exact proportions of theoretically-bases studies versus non-theoretical studies, they all agree that the minority of papers published demonstrate research which is explicitly grounded in theory. This shows that these disciplines are academically immature with little evidence of a single dominant paradigm emerging (Chicksand et al. 2012) or a strong theoretical base (Walker et al. 2015). However, Spina et al.'s 2016 study argues that the use of External Grand Theories (EGT) is on the rise, with Transaction Cost Economics (TCE) and Resource Based View (RBV) being the dominant ones. Walker et al. (2015) concur, that in the operations management field, theory development is also emerging, with RBV also being the most commonly adopted, followed by TCE and game theory.

In our study, focusing specifically on the bargaining literature, it was interesting to see a similar pattern emerge. Although many papers refer to theory in a context-setting manner, less than 13% of the papers analysed were grounded in theory. When theory was used the most prevalent were Game, Contract, Transaction Cost, Prospect and Principal Agent theories, as well as the usage of the Nash Bargaining Framework. Pfeffer argued that theoretical diversity is not useful and leads to 'a weed patch rather than a well-tended garden' (1993: 197). It is evident that there is one Grand Theory, namely Game Theory, that has the potential to be the dominant theoretical paradigm for negotiation research, as highlighted previously by Spina et al. it is not surprising that ‘Game Theory plays an important role in the study of negotiation’ (2016: 12). Some would argue that this is encouraging and could lead to a more mature discipline in the field of negotiation. However, as previously highlighted within the literature review, the study of negotiations goes beyond the simplistic binary world of win-lose where, arguably, Game Theory can most easily be applied. It may therefore be necessary for studies of complex multi-party or multi-factor negotiations to draw upon other theories such as Social Exchange Theory or the RBV.

Finally, the industries that were the contextual or empirical (where relevant) basis for the papers reviewed were analysed. A significant number of papers used modelling methods, many of which did not relate to a specific industry (42%), however, the main ones identified were: health (14%), construction (9%), agriculture/farming (5%), retail (4%), transport (4%). This shows that there is scope for a wide variety of industries to be focused on, which would bring in a wider range of contextual factors and also generate more focused and industry-specific practice-based recommendations.

3.2 Construct and measures/variables analysis

To address RQ2, using the findings from the content analysis and following the approach of Post et al., 2020, a PSM-focused set of bargaining constructs were developed along with corresponding measures/variables to define the attributes associated with the constructs in a measurable form shown in Table 4. To translate the construct from the abstract to the concrete, measures/variables are needed to allow for the precise measurement of the characteristics of a construct. This means that they can either be quantitatively measured, e.g., by a scale of purchasing volume or explored qualitatively, e.g., the nature and component parts such as how purchasing volume can be increased through centralisation of the PSM function.

Table 4 Constructs, their associated measures/variables and the literature sources

Construct	**Measure/variable**	**Source Examples**	**Definition and notes**

Purchasing volume	Amount of spend	Xu et al. (2016) Iwanaga et al. (2021) Niu et al. (2016) Stenger (2000) Li (2012) Chaves et al. (2015) He and Ioerger (2005) Den Ambtman et al. (2020)	The effect of growing the purchasing spend, through centralisation, bundling of requirements or consortia buying activities
Prior interactions	Amount of contact prior to the current instance of bargaining	Sabasi et al. (2013) Ody-Brasier and Freek (2014)	Those who do not engage in prior trading may be at a bargaining disadvantage
Information	Amount of information available	Trejos (1999) Bingham (1989) Gerding and La Poutré (2016) Ostwald (1987) Pauly and Burns (2008) Aligheri (1994)	Uninformed buyers may pay more in the bargaining process
	Timing of information availability	Lewis (1998) Barrow (1998)	Advance knowledge of information may place the buyer in a strong bargaining position
	Level of quality and certainty of information	Lewis and Sappington (1991) Shupp et al. (2013) Moon and Kwon (2011) Trejos (1999)	Incomplete information may affect the bargaining process and outcomes
	Level of asymmetry of information between bargaining parties	Nasser and Turcic (2019) Park et al. (2019) Bingham (1989) Cachon and Zhang (2006) Chang (2002)	Distance between the information known by the buyer and supplier may lead to inefficient results and a win-lose scenario
	Level of information transparency	Gehrig et al. (2016) Gerding and La Poutré (2006)	When responders can observe whether proposers have acquired information or visibility of other negotiating parties, acceptance rates are higher
Bargaining power	Level of influence one party has over the other to	Dan et al. (2018) Farrell and Fearon (2005) Hwang et al. (2018)	Greater levels of bargaining power may ensure greater concessions (pre-

	generate concessions		contract) or (post) contract performance from the other party
External Environment	Level of competitiveness of the market	Dusing et al. (2005) Selvam (2020) Matsushima and Yoshida (2018)	Availability of suitable supply alternatives and the economic characteristics of the product being bargained over
	Level of legislation/government involvement	Degrassat-Thas et al. (2012) Rodwin (2021)	Legislation may impact a buyer's ability to bargain effectively
Negotiation requirements/ variables	Risk	Liang et al. (2019) Jackson et al. (2023)	Financial risk premium, exchange rate volatility
	Price	Wickelgren (2007) Gavurova and Kubak (2021) Leu et al. (2015) Yang et al. (2007)	Economic characteristics of the product, such as price and income elasticity
	Interrelationships between different requirements	Wang et al. (2021) Kanniainen and Lehtonen (2019) Kolomvatsos et al. (2016) Lee and Kwon (2006)	Ability to bundle requirements may result in better bargaining outcomes
Tactics	Level of completeness and design of contracts/specifications	Cardenas et al. (2017) An and Tang (2019) Kim (2021)	Having specific clauses or having an incomplete contract may increase post-contract bargaining power
	Pricing approach	Lipman et al. (2013)Hass et al. (2013)Varble (1980)	Adopting different approaches to pricing requirements (e.g., cost plus, fixed-price or lease v. buy) may affect bargaining outcomes
	Number of suppliers bargaining with	Cho et al. (2014) Deck and Thomas (2020) Stenbacka and Tombak (2000) McClaren (1999) Nakkas and Xu (2019) Bichler and Kalagnanam (2006) Lin and Chuang (2020)	Single or multiple sourcing strategies may affect bargaining outcomes

	Type of contact in the bargaining process	Huh and Park (2010) Kjerstad (2005) Hoezen (2013) Shachat and Tan (2015)	Use of technology (e.g., online auction) may affect bargaining outcomes
	Timing of offers in the bargaining process	Bayat et al. (2020) Shupp et al. (2013) Li and Gupta (2011) Perdue (1992) Cakravastia and Nakamura (2002)	The benefits of being the first proposer and possibly of imposing time pressures on the other party
	Order in which suppliers are bargained with	Marx and Shaffer (2011) Zwick and Lee (1999)	Selection of the order by which suppliers are bargained with
	Number of people in one party's bargaining team	Min et al. (1995)	The size of a negotiating team may influence bargaining outcomes
	Level of effort expended in the bargaining process	Franco-Watkins et al. (2013) Rooks et al. (2000)	Perception (i.e., being seen) of expending effort in bargaining may affect outcomes
	Level of ability to identify the other party's motives	Malhotra and Bazerman (2007) Ness and Haugland (2005)	Understanding the other side's motives and goals is the first principle of investigative negotiation. The second is to figure out what constraints the other party faces
	Strength of alternatives	Ansar (2013) Wang and Zionts (2008)	Buyers can exert symmetric bargaining power against sellers provided the firm has competitive alternatives available
Individual characteristics	Level of trustworthiness of the bargaining party	Dyer and Chu (2003) Dion and Banting (1988)	Least-trusted buyer spent significantly more of its face-to-face interaction time with suppliers on bargaining leading to higher transaction costs. Openness and honesty, as opposed to success at the exploitation of the seller, support the collaborative viewpoint

	Level of risk appetite	Shalvi et al. (2013) Hanany and Gerchak (2008) Hoezen et al. (2012) Oliveira et al. (2016) Zusman and Etgar (1981) Guell (1997)	Prevention-oriented people (rather than promotion-orientated ones) may exit the bargaining process when lower monetary compensation becomes available
	Age of the bargaining participant	Tiessen and Funk (1993)	The age of those involved in the bargaining process may affect outcomes
	Gender of the bargaining participant	Min et al. (1995) Bear and Babcock (2012) Faes et al. (2010)	The gender of those involved in the bargaining process may affect outcomes
	Cultural characteristics of the bargaining participant	Bachkirov et al. (2016)	Certain tactics (e.g., aggressive bargaining may be less used in some countries/regions than in others, who may prefer a problem-solving approach
	Fair approach	Kadefors (2005) Pavlov et al. (2022) Atkin and Rinehart (2006)	There is a strong preference for fairness (and a lack of coercion) in human interaction so people who experience unfairness tend to react with anger, resentment and loss of motivation
	Language used	Lai et al. (2010)	Language familiarity plays a critical role in inducing persuasion behaviour in negotiations
	Skill level of the bargaining participants	Anglemar and Stern (1978) Green et al. (1984) Lawther (2006) Blau et al. (2015) Chalkley and McVicar (2008)	Range and quality of skills in the individual and the wider negotiation team. Social and technical sophistication of the buyer/team can increase bargaining power and can often negotiate intangibles such as extended

			service, longer warranties, and quicker delivery and affect the
Outcomes (requirements)	Level of success of the bargaining activity to meet the buying organisation's requirements	Yan and Wang (2010) Summers and Wilson (2003)	How the bargaining process has been enacted to meet the buying organisation's initial (or evolving) requirements/variables
Outcomes (process)	How much time is spent on the bargaining process	Dyer and Chu (2003) Leu et al. (2015)	The transaction costs that may arise due to inefficiencies or time taken in the bargaining process
Outcomes (relationship)	Level of impact on the ensuing relationship	Gourlay (1992) Foroughi et al. (1995)	Post-bargaining relationships may be affected by the nature of the bargaining taken to either agree a contract or post-contract activities

Although the intention of this paper is not to quantitatively analyse the importance of the different constructs in terms of the number of papers or the effect they may have on each other (see further research discussion below), there are of course some areas that have been more heavily researched than others. A feature of the construct clarity approach is also to show how empirical results differ across main measurement types and this is particularly evident in the research on the impact of size on bargaining outcomes, which presents counterintuitive findings on the role of size/volume. Some research shows that forming groups increases bargaining power (Iwanaga et al. 2021; Niu et al. (2016), consortium and group buying leads to better bargaining power (Chae et al. (2006) and negotiating outcomes (Sampriti et al., 2022). However, it has also been shown that the scale of public hospitals does not positively correlate with bargaining power (Stenger 2000), whereas the management responsibility for economic efficiency does (Noto et al. 2017). In addition, suppliers may be wary of reducing prices when selling to purchasing groups and compared to individual purchases, with buyers benefiting: '…from collective bargaining opportunity only if sellers' bargaining power relative to the buyer group is low and/or buyers' preferences toward the sellers are sufficiently differentiated' (Li 2012: 761). In addition, there are some contradictory findings on buyer-supplier contact, specifically, the role of auctions in comparison to face-to-face contact and future research may focus on post-Covid implications of shifts in workplace behaviour and attendance.

Of undoubted interest to practitioners, there are a number of activities and tactics that can be deployed in the bargaining process. From a temporal perspective, these activities can be during preparations for the bargaining, such as information gathering (e.g., Pauly and Burns, 2008), sourcing strategies in terms of the numbers of suppliers (e.g., Cho et al. 2014) that can be bargained with and in which order (Marx and Shaffer 2011). These can also be seen during inter-organisational discussions, such as the selection of whether to make the first offer when bargaining (e.g., Bayat et al. 2020), which may put pressure on the other party to respond in a particular way. It was also evident from the literature that bargaining can take place to reach initial contractual agreement and also those that take place post-contract if changes are needed and these may be influenced by how the contract itself has been set up (e.g., Cardenas et al. 2017).

A key finding that provides a more complete representation of the complexities of bargaining that is not present in modelling research, is that the outcomes of the bargaining process can extend beyond the direct satisfaction of the buying organisation's requirements (e.g., Yang and Wang 2010) into process factors such as the transaction costs arising from time taken (Dyer and Chu 2003) and also the impact on factors within the long-term relationship (e.g., Foroughi et al. 1995), such as satisfaction. This fits with a more recent trajectory of PSM literature that looks at the benefits of being a preferred customer (e.g., Pulles et al. 2016) and on supplier satisfaction (e.g., Kelly et al. 2021).

Although a smaller body of relatively dated research in comparison to others, perhaps representative of there being less empirical data, are papers that relate to individual characteristics. Despite a predominately rational economic focus in the extant research, it is clear that individual factors may affect bargaining outcomes, and this is reflective of the socially complex nature of B2B engagement. For example, the impact of age, gender, the level of ability to identify the other party's motives, the language used, fairness, and the skill levels of the bargaining participants have been explored, although future research may analyse these characteristics in more depth, alongside other factors such as personality type etc.

3.3 Temporally and location-orientated model

To site the constructs in a meaningful context and address RQ3, the final analysis section uses the findings from the previous section to develop a temporally and location-orientated PSM bargaining model (shown in Figure 4), which provides a much richer perspective on the different factors that are involved in bargaining. This has been informed by two of the key stages identified in Agndal (2017: 493), which are planning, i.e., what can be done before the back-and-forth discussions, and interaction, i.e., what can be deployed during these discussions. To provide deeper insights, we have also identified those that are within the control of the organisation/department, those of the individual and others that are a mix of the two. Doing this provides more focused practice implications by identifying possible changes that could be made at the organisational or departmental level (i.e., by senior or purchasing/procurement managers) and those that could be implemented by the individuals directly involved in the negotiation processes. It is not the intention of this research to establish causal links between the constructs, as this would require empirical research, but rather as a way of conceptualising the complexity of the analysis into a meaningful form.

For example, prior interactions have been allocated at the mixed level, as there will be instances of previous organisational-level dealings between buyers and suppliers and also (prior) interactions between individuals from the two organisations. Similarly, age and gender are mixed and can be seen at the preparation stage (i.e., by hiring a diverse workforce) and then also how these characteristics could be deployed in the actual bargaining interaction at an individual level. We also note the impact of external environmental factors and the range of outcomes (as per the constructs), but our focus for this analysis is on the different aspects of intra-organisational control that can be exercised by either managers or individuals involved in the bargaining process.

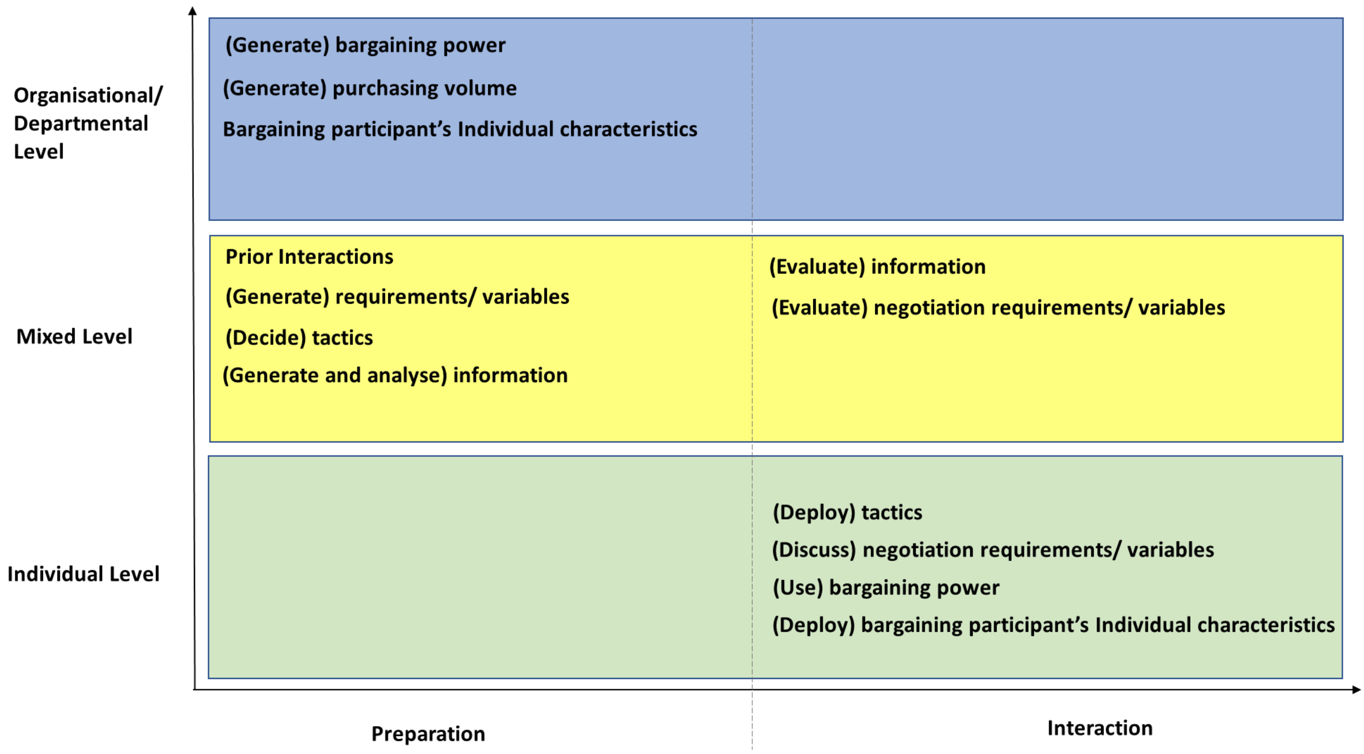

Fig 4. Temporally and location-orientated PSM bargaining model using the constructs

4 Conclusions

4.1 Theoretical implications

As far as we are aware, this is the first literature review that focuses on the PSM perspective of bargaining. The main contribution of this paper is the development of a taxonomy of constructs and clear variables/measures and synthesising these into a temporally and location-orientated model. Developing an initial set of constructs and operational measures, through a robust process, allows future researchers to use them either directly in their research in the form of focused hypotheses or as a basis for refinement and extension in the best tradition of cumulative theory building and testing, as per the approach of Chen and Paulraj (2004).

Overall, our research helps our field's understanding of negotiation, and this is reflected in how we have addressed the different categorisations of bargaining. First, is that bargaining, as being synonymous with 'haggling', can be seen as a specific type and approach to negotiation in which two parties dispute the price of a good or service with the goal of coming to an agreement. Second, bargaining may also be seen as those discussions in which parties attempt to reach an agreement over a narrower range of variables/requirements (often price) and is contrasted with those negotiations that are more complex with multiple issues (Rubin and Brown 1976). We have highlighted the range of issues that can be negotiated and some of the factors and characteristics that influence these. Third, bargaining can be seen as a specific stage in the negotiation process consisting of activities such as opening and evaluating options and reflecting the back-and-forth discussions between two or more parties as they strive to reach an agreement. Our model provides a fuller representation of what is involved in this stage, offering a more nuanced picture of the complexity that different levels of the buying organisations and the individuals who work there are involved in at different stages of the negotiation process (specifically preparation and the bargaining interaction)

The findings contribute to the extension of negotiation theory, which has tended to be explicitly developed in other fields (e.g., the negotiations between governments over trade or trade union bargaining), or from non-empirical B2B commercial negotiation sources such as Fisher and Ury (1991) etc. In the PSM field, this area of research has tended to rely on Game Theory, which has assumed the rationality of the bargaining participants with the aim of optimising decision-making. As the real world is fuzzy, vague and indeterminate, modelling research, whilst useful, finds it difficult to consider the full range of factors and variables that influence outcomes (Syll 2018), which is particularly relevant to negotiation-related research.

4.2 Practice implications]

Several implications have been identified for those working in PSM which are reflected in the different areas shown in Figure 4. At an organisational/departmental level, a key way of generating bargaining power is to increase spend volume (Chaves et al. 2017; Den Ambtman et al. 2020), which could be achieved by joining consortia and group buying (Xu et al. 2016, Iwanaga et al. 2021) and also bundling spend requirements (Schoenherr and Mabert 2008). Having suitable supply alternatives (Ansar 2013) has been shown to increase bargaining power, but this will not always be possible depending on the supply market.

At the mixed level, there are a number of ways in which more successful outcomes may be achieved. It has been shown that uninformed buyers pay higher prices than informed ones (Trejos 1999) and information asymmetry can incur information costs (Nasser and Turcic 2019). Securing high-quality information is needed to avoid uncertainty in the negotiation process (Moon and Kwon 2011) and early knowledge of an appropriate range of discounts specifically related to the item under consideration, generates stronger buyer bargaining power (Lewis 1998). Giving adequate time to those involved in the bargaining process and keeping up-to-date records would support this. In addition, a clear strategy over which suppliers to approach and in what order could deliver more successful outcomes. A smaller body of literature explores the nature of the bargaining team, i.e., its size (Min et al. (1995) and individual characteristics such as gender (Faes et al. 2010), age (Tiessen and Funk 1993) and skill levels (Blau et al. 2015).

In addition to an early decision over the supplier bargaining order (Marx and Shaffer 2011), during the interactions between buyers and suppliers, there is a necessary shift in emphasis to the individual and consideration should be given to the timing of the offers (Bayat et al. 2020; Shupp et al. (2013) and the how variables are deployed and concessions given. From a behavioural perspective, the supplier's perceptions of trustworthiness (Dyer and Chu 2003) and how much effort has been expended (Acuff et al. 2013) have been shown to affect bargaining outcomes. In addition, it may be useful for organisations to measure the wider range of bargaining outcomes, for example, the time taken to 'complete' bargaining activities and whether a particular approach or tactics used has had a positive or negative effect on the long-term relationship with the supplier. Understanding these more fully may warrant changes in the overall approach to bargaining and the tactics used.

4.3 Future research and limitations

In addition to the overall theoretical development of the constructs and measures/variables, this research has identified a series of research gaps that provide specific areas of focus that future research could address. Looking in more depth at the contradictory findings on the role that organisational size and purchasing volume have on bargaining power and its impact on bargaining outcomes (e.g., Stenger 2000; Li 2012) suggests this is a fruitful area of future research. Interestingly, there is limited research on the personality of buyers, yet this would seem to be an important facet of bargaining, especially as many of the game-theoretic models used are based on participant rationality which may not be wholly applicable in B2B negotiations, especially those of a more complex, multi-dimensional nature with significant individual involvement.

As the scope of this paper was to focus on the PSM perspective, there is a significant amount of literature that has researched into bargaining in other contexts, such as consumer behaviour, politics, trade unions and there is, therefore, an opportunity for future research to draw on these fields to see if there are insights that could be brought into the PSM field.

From a methodological point of view, the challenges associated with obtaining empirical data directly from negotiations have been noted, but the significant amount of modelling research in the extant literature could be complemented with more interviews and surveys. Developing the field beyond the current over-focus on modelling focus may provide more focused insights for PSM practitioners.

From a practitioner-focused perspective, more research into those areas that are within an individual's control or sphere of influence is needed. For example, timing, tactics etc. may generate more tangible and accessible recommendations for those involved in the day-to-day activities of negotiation who will have limited capacity to influence more macro factors such as market dynamics or organisational size. A clear focus on the benefits of information availability and quality has been seen in the literature, albeit it is recognised that this may be challenging with the time constraints in many bargaining activities. This may have increased relevance if more automated negotiation systems are used, as: "…software agents are often used to capture human negotiators' preferences and these agents can autonomously bargain with the opponents on behalf of their human users" (Lau et al. 2008: 82).

In terms of limitations, despite using a robust methodology to capture all relevant literature, it is possible that some fell outside the search parameters, although the number of papers is in line with other systematic literature reviews in the PSM field.

The authors have no competing interests to declare that are relevant to the content of this article and no funding was received for conducting this study.

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