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The relationship between coopetition strategies and company performance under different levels of competitive intensity, market dynamism, and technological turbulence☆

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ABSTRACT

While coopetition (cooperation among competitors) is expected to increase company performance, environmental factors could de-stabilise such consequences. Specifically, volatile external forces might impose challenges surrounding how firms collaborate with their industry rivals, leading to negative impacts on their performance. As such, under the wider elements of resource-based theory (considering the macro-level environment and relational issues), our study evaluates the connection between coopetition strategies and company performance under different levels of competitive intensity, market dynamism, and technological turbulence. We acquired survey responses from 262 firms throughout the United States (operating across multiple sectors). After addressing several robustness checks, we employed an ordinary least squares regression analysis to test the components of our conceptual framework. Our results highlighted that although coopetition strategies drove company performance, this link was positively moderated by competitive intensity and technological turbulence, but was not influenced by market dynamism. Thus, we have provided stronger (i.e., counter-intuitive) evidence on how different macro-level environmental forces variably affect the performance outcomes of these business-to-business (B2B) marketing networks. Likewise, we have offered improved insights on the broader themes of the resource-based view, whereby, some decision-makers cooperate with their competitors to operate successfully in unpredictable market settings.

1. Introduction

> "It is of interest to explore whether the competitive business environment has any impact on the performance outcomes of coopetition activities" (Crick, 2019, p. 523).

Over the last twenty-five years, there has been a steady growth of research pertaining to coopetition strategies (e.g., Bengtsson & Kock, 1999; Czakon, Mucha-Kus, & Soltysik, 2016; Felzensztein, Gimmon, & Deans, 2018; Meena, Shir, & Sushil, 2023; Park, Srivastava, & Gnyawali, 2014; Rusko, 2011). Coopetition is the interplay between cooperation and competition, in which organisations collaborate with their industry rivals for mutually-beneficial outcomes, such as obtaining new assets and discovering improved ways to drive customer satisfaction (Bengtsson & Raza-Ullah, 2016; Crick & Crick, 2023; Gnyawali & Park, 2009; Pattinson, Nicholson, & Lindgreen, 2018). Coopetition has been defined as "a paradoxical relationship between two or more actors, regardless of whether they are involved in horizontal or vertical relationships, simultaneously involved in cooperative and competitive interactions" (Bengtsson & Kock, 2014, p. 180). Considering the intended advantages

☆ Please note that as outlined in the cover letter, Dr. Todd A. Morgan was recently killed (an ongoing investigation). Nonetheless, owing to his contributions to this paper, he remains as a co-author.

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of coopetition, it is not surprising that a growing body of knowledge has indicated that these B2B marketing networks are likely to increase company performance due to underlying mechanisms, such as cost reductions, improved efficiency and productivity, as well as customer value creation[1–12] (Ritala, 2012; Czernek & Czakon, 2016; Crick & Crick, 2022; Crick, 2015; Kraus, Klimas, Gast, & Stephan, 2019; Czakon, Srivastava, Le Roy, & Gnyawali, 2020; Gernsheimer, Kanbach, & Gast, 2021; Bengtsson & Raza-Ullah, 2024).

However, the connection between coopetition strategies and company performance has been explored in relatively basic ways, in which the moderators that can influence the performance outcomes of these B2B marketing activities have scarcely been considered (as noted by Shu, Jin, & Zhou, 2017; Hoffmann, Lavie, Reuer, & Shipilov, 2018). This is critical because various investigations have highlighted some of the "dark-sides" of coopetition, like the tensions (e.g., conflict) that can unfold if firms share assets with rival businesses (see Efrat, Souchon, Hughes, & Cai, 2022; Raza-Ullah, Bengtsson, & Kock, 2014; Tidstrom, 2014). Therefore, these "dark-sides" might be propelled by key (and under-researched) moderating factors, meaning that an overly simplistic understanding of coopetition (i.e., without the consideration of moderators) could lead to B2B marketing scholars not fully-embracing the benefits and drawbacks of these networks. The macro-level environment has been highlighted as a moderator that could impact the performance outcomes of coopetition in different respects (see Crick, 2019). Yet, because the competitive business environment can manifest in several forms (Cadogan, Cui, & Li, 2003; Jaworski & Kohli, 1993; Slater & Narver, 1994), it is of interest to evaluate the complexities of these issues - instead of investigating the macro-level environment superficially. This way, the variability of these environmental conditions can be better-understood – to delve deeper into the situations where coopetition strategies drive (and do not drive) company performance. In other words, by unpacking these environmental factors (as moderators impacting the link between coopetition strategies and company performance), new evidence can emerge on the ways that these B2B marketing activities can be managed in complex market-level settings – to assist firms to boost their performance (building upon Gnyawali & Park, 2009; Le Roy & Czakon, 2016; Crick & Crick, 2021a).

Thus, using the broader facets of resource-based theory (Freeman, Dmytriyev, & Phillips, 2021; Helfat et al., 2023; Nason & Wiklund, 2018; Priem & Butler, 2001), the objective of our article is to evaluate the link between coopetition strategies and company performance under different levels of competitive intensity, market dynamism, and technological turbulence. As covered later (i.e., in more depth), we chose this lens because in a coopetition capacity, the resource-based view examines how firms manage their own resources and capabilities (alongside orchestrating their competitors' assets), as well as how competitive business environments influence organisation-wide behaviours (like coopetition strategies) and how stakeholder relationships (e.g., with industry rivals) are forged in day-to-day and long-term activities (extending Priem & Butler, 2001; Crick & Crick, 2023). Moreover, traditionally, the resource-based view focused on inside-the-firm issues pertaining to the management of resources and capabilities and their link with company performance (Barney, 1991; Morgan, Vorhies, & Mason, 2009; Vorhies & Morgan, 2005). Yet, more recently, environmental forces and relational issues (i.e., outside-the-firm factors) have been incorporated into this perspective (Barney, 2018; Lavie, 2006; Schilke, 2014). This includes coopetition, as a B2B marketing strategy, that explains how organisations join forces with their competitors to increase their performance (see, for example, Crick, 2019; Crick & Crick, 2021b; Chaudhry, Crick, & Crick, 2023). In doing so, resource-based theory has evolved to cover outside-the-firm factors, like B2B marketing networks, such as coopetition[2] (Crick, Crick, & Ferrigno, 2024). In tandem with achieving the study's objective, we offer four contributions to advance the B2B marketing literature:

1. We address the multi-faceted (as opposed to uni-dimensional) nature of the macro-level environment by noting how different external forces could variably impact the performance outcomes of coopetition (developing Luo, Rindfleisch, & Tse, 2007; Ritala, 2012; Crick, 2019; Telg, Lokshin, & Letterie, 2023). In doing so, we demonstrate how there could be situations (determined by complex market settings) where coopetition strategies do not necessarily lead to higher-levels of company performance – highlighting restrictions to the intended merits of these B2B marketing networks.
2. We embrace the intricacies of the link between coopetition strategies and company performance to show that there could be factors that help (or hinder) the outcomes of these B2B marketing ventures (following Le Roy & Czakon, 2016; Shu et al., 2017; Hoffmann et al., 2018; Czakon et al., 2020; Meena et al., 2023). We do this by emphasising that collaborating with industry rivals is not a simple process, meaning that there are likely to be factors that might be the

[1] Although coopetition is a B2B marketing strategy, it can influence organisations selling goods and services directly to customers within business-to-consumer (B2C) marketing exchanges and interactions (see Bahar, Nenonen, & Starr Jr., 2022; Crick & Crick, 2020; Meena et al., 2023; Ritala, Golnam, & Wegmann, 2014). By way of example, firms might collaborate with their competitors by borrowing tools or asking for informal advice to operate in ways that creates enduring value for customers (see Chaudhry et al., 2023; Felzensztein et al., 2018; Felzensztein & Deans, 2013; Geldes et al., 2015). For clarity, our investigation is positioned as a B2B marketing study – encapsulating how firms collaborate with their industry rivals under different environmental conditions (namely, competitive intensity, market dynamism, and technological turbulence) (building upon Ritala, 2012; Park et al., 2014; Crick, 2019; Telg et al., 2023). Additionally, our article does not concentrate on other marketing strategies (e.g., a market orientation), but rather, covers coopetition as an established notion within the B2B marketing discipline (Bengtsson & Kock, 2000; Crick et al., 2023; Gnyawali & Park, 2009; Klimas & Czakon, 2018; Ricciardi et al., 2022; Rouyre, Fernandez, & Estrada, 2024). Further, there are various definitions and conceptualisations (let alone measures) of the coopetition construct (e.g., Bouncken et al., 2015; Gnyawali & Ryan-Charleton, 2018). Yet, the definition offered by Bengtsson and Kock (2014) is arguably the main viewpoint within the B2B marketing field. We thank the anonymous reviewers for requesting more depth on this matter.

[2] An extension (now, a separate theoretical lens) to the resource-based view is resource-advantage theory (Hunt & Morgan, 1995). This lens focuses on firm-wide resources and capabilities being used to assist organisations to develop, and sustain, a superior position in their markets, coupled with managing dynamic industry-level conditions, such as competitive rivalry (Hunt & Morgan, 1996; Varadarajan, 2020). Networks (including those among competing firms, like strategic alliances) have featured within the broader themes of resource-advantage theory (see, for example, Hunt, 1997; Hughes & Morgan, 2007; Wittmann, Hunt, & Arnett, 2009). Nonetheless, the resource-based view (not least of which its wider aspects) is aptly connected to the coopetition literature (as per Ritala, 2012; Crick & Crick, 2020; Corbo et al., 2023; Meena et al., 2023). This is because the broader facets of this theoretical lens cover how companies harness their resources and capabilities, manage complex market-level settings, and forge networks with certain stakeholder groups (Freeman et al., 2021; Priem & Butler, 2001; Schilke, 2014). Therefore, we employed this established perspective to unpack the relationship between coopetition strategies and company performance. Here, coopetition is a construct that must be explained by a relevant commercial theory to conceptualise its properties, as well as its potential antecedents and/or consequences (following Bouncken et al., 2015; Crick & Crick, 2019). Accordingly, the resource-based view is well-suited to the coopetition construct, together with its drivers and outcomes. In our investigation, this perspective helped us to examine the link between coopetition strategies and company performance under the moderating roles of competitive intensity, market dynamism, and technological turbulence. We express appreciation to the anonymous reviewers for requesting extra details on why the resource-based view was chosen as the lens to guide our study's conceptualisations.

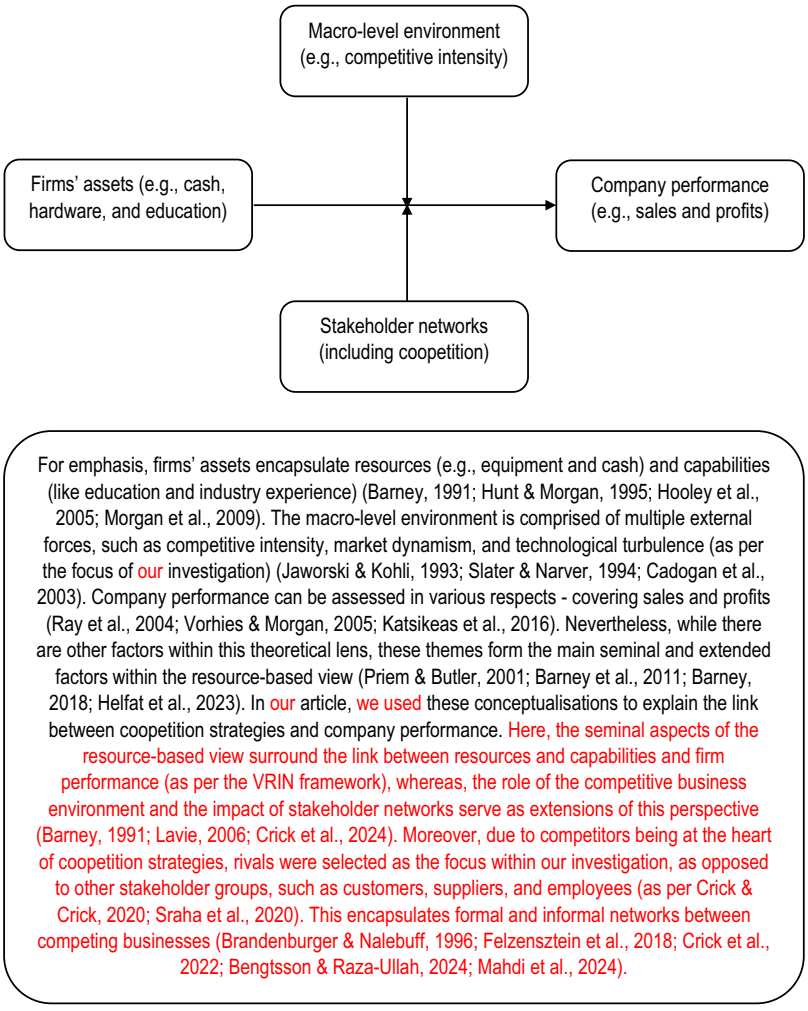


Fig. 1. A depiction of the wider themes of the resource-based view.

difference between success and failure within these B2B marketing alliances.

3. We investigate the potential "dark-sides" of the coopetition construct - through the circumstances where collaborating with industry rivals could be harmful for companies (in line with Raza-Ullah et al., 2014; Czakon & Czernek, 2016; Bouncken, Fredrich, Ritala, & Kraus, 2018; Crick, 2020; Crick & Crick, 2021c; Manzhynski & Biedenbach, 2023). We anticipate that the different dimensions of the macro-level environment are negative issues that could yield such problems. Should these downsides exist, more evidence will emerge on how they manifest within such B2B marketing activities – due to the competitive business environment not being assessed in a superficial manner.
4. We examine the extended dimensions of the resource-based view via demonstrating that while firms' assets might influence market-level successes (i.e., the seminal elements of resource-based theory), there are additional considerations that might be at play, like role of B2B marketing networks with key stakeholders (e.g., competitors) and macro-level environmental forces (see Barney, 2018; Corbo et al., 2023; Freeman et al., 2021; Priem & Butler, 2001; Quach, Thaichon, Lee, Weaven, & Palmatier, 2020). Here, we develop work pertaining to the use of resource-based theory within the B2B marketing domain – regarding how this perspective can be utilised to explain the management of coopetition strategies within complex market settings.

Moving forward, the remaining sections of our paper are structured as follows. First, we review the pertinent literature driving the conceptual framework (this includes more coverage on why the resource-based view was used as the underpinning theoretical lens). Second, our research design is explained. Third, our pertinent results are displayed. Fourth, we discuss our findings, with key advancements to the B2B marketing community (i.e., involving coopetition research), coupled with how such results supplement resource-based theory. Fifth, we offer some practitioner implications. Sixth, we specify a range of limitations and future B2B marketing research directions. Seventh, our article is concluded.

2. Theoretical background and hypotheses

2.1. The seminal themes of the resource-based view

As mentioned earlier, we utilised resource-based theory to examine the connection between coopetition strategies and company performance under different levels of competitive intensity, market dynamism, and technological turbulence. However, before we explain the link between the resource-based view and coopetition, the seminal aspects of this lens are discussed. Specifically, and historically, the resource-based view concentrated on how businesses can manage their resources and capabilities to elevate their market-level successes (Hoskisson, Wan, Yiu, & Hitt, 1999; Hunt & Morgan, 1995; Karami, Crick, &

Crick, 2023). Resources refer to tangible assets, such as cash and hardware, whereas, capabilities pertain to intangible assets, like sector-wide experience and education (Hooley, Greenley, Cadogan, & Fahy, 2005; Morgan et al., 2009; Crick, 2018). The seminal themes of this lens were grounded in the value, rarity, inimitability, and non-substitutability (VRIN) framework, which denoted that firms can boost their performance (e.g., sales and profits) through harnessing their resources and capabilities (Barney, 1991). Via the VRIN framework, this theoretical lens highlighted that decision-makers should implement strategies with well-managed assets to secure sustainable competitive advantages – namely, higher-degrees of long-term performance over industry rivals that withstand external forces (see Barney, Ketchen Jr., & Wright, 2011).

The VRIN framework demonstrates that organisations possess valuable resources and capabilities when they can create enduring value for their customers (Bowman & Ambrosini, 2007). Rare assets are those that are not frequently accessible within a given market by competitors (Johnson, Whittington, & Scholes, 2011). Inimitable resources and capabilities are those that industry rivals cannot easily copy or obtain (Newbert, 2007). Non-substitutability concerns resources and capabilities that are based on the risk of other (equivalent) assets being used instead of them within day-to-day and long-term activities (Peteraf & Bergen, 2003). Collectively, the elements of the VRIN framework form the seminal foundations of resource-based theory.[3] Over time, the resource-based view has covered some new assumptions about how companies compete within their markets – beyond the VRIN framework (Barney, 2001; Helfat et al., 2023; Nason & Wiklund, 2018). This included that company performance can be conceptualised, operationalised, and tested in various ways – not just through sustainable competitive advantages (Hamzah, Crick, Crick, Ali, & Yunus, 2023; Katsikeas, Morgan, Leonidou, & Hult, 2016; Ray, Barney, & Muhanna, 2004; Vorhies & Morgan, 2005). Consequently, our investigation concentrates on traditional company performance, namely, financial metrics – as a likely outcome of coopetition strategies (consistent with Ritala, 2012). Here, superior financial performance could be influenced by these B2B marketing activities (Crick & Crick, 2021b).

2.2. The macro-level environment under the resource-based view

Following on, there have been various changes made to the resource-based view over the last thirty-five years (as noted by Barney, 2001; Barney et al., 2011; Day, 2014; Helfat et al., 2023). One of these changes involves covering the role of the macro-level environment. That is, this theoretical lens has shown that if decision-makers are "strategically flexible" (i.e., reacting to changes within their sectors), they might be able to withstand the volatile nature of their markets, like adapting to customers' wants and needs (Combe, Rudd, Leeflang, & Greenley, 2012; Priem & Butler, 2001; Venkatraman & Prescott, 1990). Accordingly, the resource-based view has signified that the macro-level environment can help (or hinder) business' successes (Schilke, 2014). Yet, the macro-level environment is a multi-faceted notion, as opposed to being a unidimensional construct (Johnson et al., 2011). In our study, we explored three distinct environmental conditions, namely, competitive intensity, market dynamism, and technological turbulence (in line with Jaworski & Kohli, 1993; Slater & Narver, 1994; Cadogan et al., 2003). We identified them as contingencies (i.e., moderators) that might influence the performance consequences of coopetition strategies.[4] Indeed, there is mixed evidence surrounding the extent to which environmental forces influence company performance (e.g., Ozturan, Ozsomer, & Pieters, 2014; Zahoor, Golgeci, Haapanen, Ali, & Arslan, 2022). Hence, our investigation focuses on the above-mentioned environmental constructs to explore their potentially harmful effects on coopetition strategies, but noting that there could be merits that are associated with these macro-level forces if positive moderation effects occur (responding to Ritala, 2012; Crick, 2019). In turn, we anticipate that improved evidence will emerge on the benefits and drawbacks of the macro-level environment (especially the variability of such outside-the-firm forces) when businesses collaborate with their competitors. Nonetheless, these environmental themes mirror the extensions made to the resource-based view, with respect of the external forces that can impact organisational activities and behaviours (as per Priem & Butler, 2001; Cadogan, Kuivalainen, & Sundqvist, 2009; Schilke, 2014).

2.3. The stakeholder dimensions of the resource-based view

The resource-based view has evolved in other capacities, such as through noting the vitality of inter-firm relationships – which covers businesses cooperating with their competitors within coopetition alliances (Corbo et al., 2023; Crick, Karami, & Crick, 2021; Lavie, 2006). In doing so, the resource-based view has been infused with stakeholder theory to cover the importance of businesses managing networks with

[3] Some studies have focused on the value, rarity, inimitability, and organisation (VRIO) framework to evaluate the core elements of the resource-based view (see, for example, Kozlenkova, Samaha, & Palmatier, 2014; Worm, Bharadwaj, Ulaga, & Reinartz, 2017). However, the VRIN framework is a more popular (and established) tool that is employed to assess the properties of resource-based theory than the VRIO framework (Johnson et al., 2011). Hence, our investigation concentrated on the VRIN framework, as the seminal roots of this theoretical lens – before more recent conceptualisations of resource-based theory were discussed. We acknowledge the anonymous reviewers for seeking more information on the foundational conceptualisations of the resource-based view – and their connections to themes of our article.

[4] We chose competitive intensity, market dynamism, and technological turbulence as three sub-sets of the macro-level environment because they comprise the main external forces (including conceptualisations that connect with the resource-based view) that might influence the successes and failures of organisations when implementing certain activities and strategies – including coopetition (in line with Jaworski & Kohli, 1993; Slater & Narver, 1994; Cadogan et al., 2003; Ritala, 2012; Crick & Crick, 2021a). Hence, our article follows this logic, with respect of how these environmental forces could influence the link between coopetition strategies and company performance. We acknowledge that there are other aspects of the macro-level environment that could be at play, such as issues pertaining to the COVID-19 pandemic (see, for example, Crick & Crick, 2020; Crick et al., 2023). Yet, consistent with earlier research (not least of which work that surrounds resource-based theory), our paper focuses on competitive intensity, market dynamism, and technological turbulence (following Jaworski & Kohli, 1993; Slater & Narver, 1994; Cadogan et al., 2003). Since these three macro-level environmental forces account for the main dimensions of the competitive business environment, we argue that no major oversights have occurred in this capacity. Further, we recognise that Gnyawali and Park (2009) recommended that research should be conducted on the industry-level factors that surround coopetition strategies. However, seemingly, they focused on mediators, rather than moderators. To that end, our article concentrates on macro-level environmental forces as moderators in the link between coopetition strategies and company performance (responding to Shu et al., 2017; Hoffmann et al., 2018; Crick, 2019). In essence, our conceptualisations, measures, and empirical insights develop Gnyawali & Park's (2009) study – by providing more recent assertions on the macro-level forces that affect the performance consequences of coopetition strategies. We are grateful to the anonymous reviewers for asking for additional details on this issue.

certain key stakeholder groups to ascertain performance-enhancing resources and capabilities[5] (Freeman et al., 2021). Here, resource-based theory has acknowledged that organisations often need to form networks with key stakeholders (individuals and/or groups that affect, or are affected by, organisations) to achieve their day-to-day and long-term goals (Barney, 2018; Sraha, Sharma, Crick, & Crick, 2020). In other words, decision-makers might have limited resources and capabilities, which in turn, reduces their successes, as they may not be able to reach their target markets, alongside achieving other firm-wide objectives (Granata, Lasch, Le Roy, & Dana, 2018). Instead of operating under an individualistic business model (in essence, coordinating the facets of the VRIN framework by harnessing companies' own assets), organisations have scope to network with their key stakeholders to acquire new resources, capabilities, and opportunities that can assist them to achieve their goals[6] (Mu, 2015; Mu, Bao, Sekhon, Qi, & Love, 2018). These conceptualisations link with the notion of coopetition, in which collaborating with competing firms can be a successful B2B marketing strategy, as these inter-firm networks might facilitate the above-described beneficial outcomes (Crick & Crick, 2023; Kraus et al., 2019; Le Roy & Czakon, 2016).

Thus, our paper uses the wider themes of this lens (not just the VRIN framework – and other seminal considerations) to examine the complexities of the link between coopetition strategies and company performance – focusing on the elements of the macro-level environment as moderating factors (consistent with Priem & Butler, 2001; Schilke, 2014; Crick, 2019). Additionally, for emphasis, we recognise that stakeholders include various groups (e.g., firms, consumers, governments, suppliers, and so on) (Barney, 2018; Freeman et al., 2021; Kull, Mena, & Korschun, 2016; McGahan, 2021). With respect of coopetition strategies, we refined the stakeholder-oriented themes of the resource-based view to rival businesses joining forces – as the most critical stakeholder group pertaining to coopetition (as per Crick & Crick, 2020). At any rate, the wider aspects of resource-based theory were helpful for exploring the link between coopetition strategies and company performance. Fig. 1 displays the core (and extended) aspects of the resource-based view – to underpin the conceptualisations surrounding the relationship between coopetition strategies and company performance under different levels of competitive intensity, market dynamism, and technological turbulence (reinforced by Bengtsson & Kock, 2000; Ritala, 2012; Park et al., 2014; Felzensztein et al., 2018; Gernsheimer et al., 2021; Crick, Karami, & Crick, 2022; Telg et al., 2023). We employed these conceptualisations to underpin our investigation's hypotheses and control variables.

2.4. The relationship between coopetition strategies and company performance

Linking with the wider elements of the resource-based view, coopetition involves companies collaborating with their competitors to ascertain new assets and opportunities[7] (Crick & Crick, 2021b; Czakon, Fernandez, & Mina, 2014; Gernsheimer et al., 2021; Mahdi, Crick, Crick, Lamine, & Spence, 2024). This typically involves decision-makers sharing resources and capabilities with their industry rivals in formal and/or informal capacities to succeed to a larger extent than if they operated without such forms of support from their competitors (Bengtsson & Raza-Ullah, 2024; Brandenburger & Nalebuff, 1996; Crick et al., 2022; Felzensztein et al., 2018). Bengtsson and Kock (2000) were the main pioneers to formally conceptualise the coopetition construct. These authors described coopetition as being situations where organisations work with their competitors in a variety of circumstances. Critically, despite these being new (at the time) conceptualisations, Bengtsson and Kock (2000) study was somewhat limited, as it restricted coopetition strategies to occurring between two rival firms. Later, they extended the parameters of these B2B marketing activities to involve the equivalent networks, but between numerous industry rivals (see Bengtsson & Kock, 2014). This expanded view, and a more realistic approach, of coopetition has been adopted in most subsequent B2B marketing research, encapsulating studies that connect with resource-based theory (e.g., Bouncken, Clauss, & Fredrich, 2016; Czakon et al., 2020; Czernek & Czakon, 2016; Gnyawali & Ryan-Charleton, 2018; Meena et al., 2023; Raza-Ullah et al., 2014; Yami & Nemeh, 2014).

Taking a closer look at the merits of coopetition strategies, it has been well-documented that if businesses work with their industry rivals,

[5] Stakeholder theory concentrates on the inter-connected relationships between organisations and their stakeholders, whereby, decision-makers must aim to create enduring value for all stakeholders that they affect – or are affected by (Freeman, 1999; McGahan, 2021; Parmar et al., 2010). That said, stakeholder theory highlights how firms must focus on their most critical stakeholders within their industries (Friedman & Miles, 2002). Hence, it stands to reason that when integrating the resource-based view and stakeholder theory, the most important stakeholders within coopetition strategies are competitors (following Crick & Crick, 2020; Corbo et al., 2023; Meena et al., 2023). Thus, it is seemingly acceptable to emphasise competitor networks (i.e., coopetition) under the stakeholder-oriented extensions of resource-based theory. In other words, our investigation does not utilise stakeholder theory, but instead, the broader aspects of the resource-based view – which encapsulates a stakeholder perspective (building upon Lavie, 2006; Barney, 2018; Freeman et al., 2021; McGahan, 2021). Such conceptualisations explain why we did not explore issues, like power influence, urgency, and legitimacy of demands, as these notions are linked to the central themes of stakeholder theory – not the resource-based view (as per Miles, 2017). We acknowledge the anonymous reviewers for requesting more details on the stakeholder-oriented themes of resource-based theory.

[6] Certain B2B marketing scholars have discussed the "outside-in marketing" perspective under the wider themes of the resource-based view (see, for example, Day, 2014; Mu, 2015; Musarra & Morgan, 2020; Rust, 2020). This strand of literature focuses on external factors that can positively or negatively impact company performance, such as environmental forces and inter-organisational networks (Mu et al., 2018; Quach et al., 2020). Indeed, coopetition has been related to the "outside-in marketing" perspective, in terms of how cooperating with competitors can help businesses to thrive within their markets (Crick et al., 2022; Crick & Crick, 2021d). Our article does not explicitly focus on the "outside-in marketing" perspective, but instead, concentrates on the core extensions of the resource-based view (Barney, 2018; Freeman et al., 2021; Lavie, 2006; Priem & Butler, 2001). This encapsulates the role that stakeholders might play in shaping company performance. Here, collaborating with competitors could be a performance-enhancing B2B marketing strategy under different macro-level environmental forces (responding to Crick, 2019). We express their appreciation to the anonymous reviewers for offering their thoughts on how the stakeholder themes of resource-based theory relate to coopetition strategies.

[7] There are different stances and schools-of-thoughts regarding the coopetition construct throughout the B2B marketing field. On the one hand, coopetition could be viewed as an organisation-wide mind-set, in which all members of staff within a given company possess values, attitudes, and beliefs about the importance of cooperating with competitors (Brandenburger & Nalebuff, 1996). On the other hand, and the more popular line-of-thinking, coopetition is a set of firm-level behaviours that involve businesses collaborating with their industry rivals for mutually-beneficial outcomes, such as increased company performance (Bengtsson & Kock, 2014; Bouncken et al., 2015; Crick & Crick, 2019; Czakon & Czernek, 2016; Gernsheimer et al., 2021; Klimas et al., 2022; Meena et al., 2023). Nevertheless, some work has connected these schools-of-thought, with respect of examining the link between coopetition-oriented mind-sets and behavioural forms of coopetition (see Gnyawali & Park, 2011; Crick, 2021; Mahdi et al., 2024). To that end, our investigation focuses on the latter (i.e., behavioural) perspective of coopetition under the wider elements of the resource-based view (following Ritala, 2012; Crick, 2019; Corbo et al., 2023). We express gratitude to the anonymous reviewers for requesting more information on this issue.

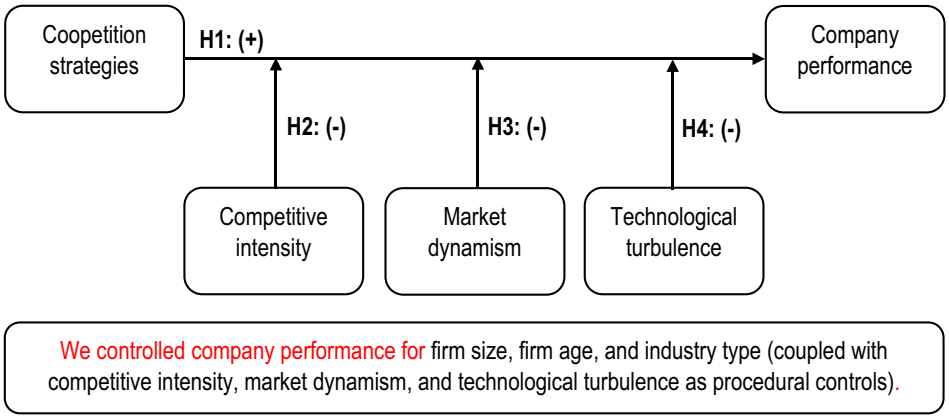


Fig. 2. Conceptual framework.

they might overcome some of the challenges that are associated with possessing a limited volume of tangible and intangible assets[8] (Bengtsson & Raza-Ullah, 2016; Bouncken, Gast, Kraus, & Bogers, 2015; Crick & Crick, 2023; Klimas & Czakon, 2018; Ritala, 2012). By way of example, Granata et al. (2018) explored coopetition within the French wine sector. These authors found that by cooperating with certain competitors, firms can establish formal and informal partnerships that can assist them to better-understand the complex nature of their industries, coupled with acquiring superior information into ways to create enduring customer value. This mirrors how in certain regional clusters, coopetition partnerships can attract customers (e.g., tourists), as well as developing efficient supply chains that are advantageous for the organisations involved in these B2B marketing ventures (Chaudhry et al., 2023; Felzensztein, Deans, & Dana, 2019; Geldes, Felzensztein, Turkina, & Durand, 2015). Although some work (not least of which studies that have been underpinned by the resource-based view) surrounds the "dark-sides" of coopetition (Crick, 2020; Raza-Ullah et al., 2014; Tidstrom, 2014), it stands to reason that by joining forces with competing organisations, decision-makers can discover superior ways to operate more efficiently and "effectively" within their industries to deliver enduring value to their customers (among other advantages), meaning that company performance should be increased. Here, coopetition allows firms to operate more successfully than if they were to function under an individualistic business model (Ritala, 2012; Crick, 2021; Crick & Crick, 2023). That is, we argue that:

H1. Coopetition strategies positively impact company performance.

2.5. The environmental moderators impacting the relationship between coopetition strategies and company performance

Following a previous point, the macro-level environment has been incorporated into the resource-based view, in which key external forces (that are usually uncontrollable for organisations) can influence the performance outcomes of certain assets and strategies (Priem & Butler, 2001; Schilke, 2014). The macro-level environment is associated with coopetition activities, as these outside-the-firm issues are likely to help (or hinder) the degree to which cooperating with competitors yields performance-enhancing consequences for businesses (Ritala, 2012; Telg et al., 2023). Put another way, the competitive business environment could add complexities for companies when they join forces with their industry rivals (in line with Crick, 2019; Crick & Crick, 2020). Consistent with the extended themes of the resource-based view, the macro-level environment is a multi-dimensional construct, as there are various external factors that can affect organisations (Cadogan, Sundqvist, Puumalainen, & Salminen, 2012; Johnson et al., 2011; Schilke, 2014). As mentioned earlier, our study focuses on three distinct facets, namely, competitive intensity, market dynamism, and technological turbulence (following Jaworski & Kohli, 1993; Slater & Narver, 1994; Cadogan et al., 2003). In doing so, under the wider elements of resource-based theory, we used these aspects of the macro-level environment to assess the moderators that can impact the link between coopetition strategies and company performance (building upon Ritala, 2012; Corbo et al., 2023).

Competitive intensity is the extent to which organisations behave in a hostile manner towards their industry rivals (Jaworski & Kohli, 1993; Kwiecinski, 2017). Regardless of the amount of "goodwill" between coopetition partners, there will always be rivalrous behaviours underpinning these B2B marketing ventures (Bengtsson & Raza-Ullah, 2016; Luo et al., 2007; Manzhynski & Biedenbach, 2023). That is, competition always exists within coopetition activities – even if it is to a very small

[8] In our investigation, the potential "dark-sides" of coopetition are explored via the environmental moderators that might be at play when firms cooperate with their competitors (consistent with Crick, 2019; Crick & Crick, 2021c). In other words, we argue that the direct association between coopetition strategies and company performance is positive, owing to the merits of these B2B marketing networks (Bengtsson & Kock, 2014; Bouncken, Fredrich, & Kraus, 2020; Klimas & Czakon, 2018; Meena et al., 2023). This means that the coopetition strategies – company performance association is a way to denote the advantages of firms joining forces with their industry rivals (as per Ritala, 2012; Bengtsson & Kock, 2014; Czakon & Czernek-Marszalek, 2021). Yet, it is possible that key moderating factors (here, aspects of the competitive business environment) yield less-than-desirable consequences pertaining to the coopetition construct (following Shu et al., 2017; Hoffmann et al., 2018). Thus, guided by the wider elements of the resource-based view, we expect that the varied roles of competitive intensity, market dynamism, and technological turbulence add more depth on the possible drawbacks of coopetition strategies (responding to Crick, 2019). Indeed, we explore these issues through the role of moderating factors (in line with Shu et al., 2017; Hoffmann et al., 2018; Czakon et al., 2020), as opposed to mediators in the link between coopetition strategies and company performance (see Gnyawali & Park, 2009). Furthermore, we accept that there are different perspectives regarding the nature of the relationship between coopetition strategies and company performance, in terms of there being opposing views on whether such a connection is positive or negative (see, for example, Luo et al., 2007; Ritala, 2012; Crick & Crick, 2024). In our article, we hypothesise a positive link, but as per the above-mentioned issues, we used the facets of the macro-level environment to account for constructs that could lead to this link becoming negative. We offer thanks to the anonymous reviewers for asking for more (i.e., emphasised) information pertaining to the reasonings for assessing environmental factors as moderators (not mediators) in the link between coopetition strategies and company performance (as well as the nature and direction of this relationship).

extent (Mahdi et al., 2024; Mattsson & Tidstrom, 2015). In fact, Bengtsson and Kock (2000) stressed that coopetition is a paradoxical B2B marketing strategy (sometimes called the coopetition paradox), since it is the interplay between cooperation and competition. The coopetition paradox can be de-stabilised by firms being impacted by unexpected forms of competitive rivalry (Ang, 2008). Indeed, the coopetition paradox has been compared to a "yin and yang" concept - an Asian philosophy that denotes that while opposing forces (for emphasis, cooperative and competitive behaviours) might be "complementary", they can be unhinged when these notions are not equally-matched (Dagnino & Mina, 2021; Luo, 2007). In doing so, this rivalrous hostility (yielded through increased forms of competitive intensity) can create unclear boundaries about how (and under what conditions) companies balance collaborative and competitive relations with their industry rivals – and alliance members (Park et al., 2014). Thus, linking with the broader aspects of resource-based theory (e.g., Priem & Butler, 2001), competitive intensity might serve as an external condition that might unbalance the fragile coopetition paradox (i.e., rivalry over-powering any forms of cooperation) and lessen the performance consequences of these B2B marketing strategies (Crick & Crick, 2024). In this sense, coopetition is already a precarious B2B marketing strategy (because it is underpinned by the paradoxical forces of collaboration and competition), but with additional magnitudes of rivalry, the performance benefits of these inter-firm networks are likely to be reduced[9] (Crick, 2022; Raza-Ullah et al., 2014). With this mind, we propose that:

H2. Competitive intensity negatively moderates the relationship between coopetition strategies and company performance.

Market dynamism pertains to the potentially volatile (and rapidly-changing) nature of customers' wants and needs (Slater & Narver, 1994). The last few years have been an extremely unpredictable period for commerce, with the COVID-19 pandemic (and its after-effects) serving as a "grand challenge" that has affected the behaviours of companies and consumers (Hughes, Morgan, Hodgkinson, Kouropalatis, & Lindgreen, 2020; Obal & Gao, 2020; Ritter & Lund Pedersen, 2020; Zahoor et al., 2022). Supplemented by the wider themes of the resource-based view, Crick and Crick (2020) found that many firms (across numerous industries and countries) have pivoted their business models, through coopetition, to cope with this global emergency – in particular, to manage the volatility that is related to the forces of supply and demand. As one example, they found that rival pharmaceutical producers from the United States, Germany, and the People's Republic of China joined forces to manufacture a "safe" vaccine. That said, Crick and Crick (2020) signified that coopetition is not necessarily a solution to overcome the volatility of a rapidly-changing market, as when a sector is especially unpredictable, coopetition activities might not allow certain organisations to "stay afloat" and manage the ever-changing wants and needs of their key customers (building upon Luo et al., 2007; Hoffmann et al., 2018; Telg et al., 2023). Here, market dynamism (such as, but not limited to, the uncertainties that have been experienced by businesses during the COVID-19 pandemic) could weaken relationship between coopetition strategies and company performance. Put another way, despite its merits, market dynamism could still accelerate key challenges when firms collaborate with their industry rivals – leading to reduced company performance (building upon Crick, 2019; Crick, Crick, & Chaudhry, 2023).

To unpack this issue, Luo (2007) argued that the coopetition paradox will change over time, as some situations (linked to the macro-level environment) may require higher-degrees of cooperation versus competition. Luo (2007) added that that there are "dynamic conditions" (factors that are driven by how firms and consumers behave and interact when exchanging goods and services) that determine the extent to which these B2B marketing ventures are likely to yield higher-levels of company performance. Market dynamism could create an unstable macro-level environment, which in turn, facilitates uncertainties surrounding how companies can fulfil the requirements of their target customers (Cadogan et al., 2009; Slater & Narver, 1994). Consistent with the broader elements of the resource-based view, these uncertainties might impose doubts and distractions among coopetition partners about whether they can trust their competitors when they are working hard to monitor their ever-changing industries (extending Telg et al., 2023). Hence, while coopetition can be a performance-enhancing B2B marketing strategy (Gnyawali & Ryan-Charleton, 2018; Meena et al., 2023; Ritala, 2012; Yami & Nemeh, 2014), market dynamism could limit these outcomes from occurring by lessening companies' abilities to deliver enduring value to their end-users (among other consequences due to these market-wide uncertainties) in turbulent environmental climates (building upon Luo, 2007). In essence, as market dynamism increases, coopetition-based tensions (e.g., conflict) are proposed to become stronger, which damages the ways that firms operate – lessening their performance (building upon Raza-Ullah et al., 2014; Bouncken et al., 2018). Therefore, we expect that:

H3. Market dynamism negatively moderates the relationship between coopetition strategies and company performance.

Technological turbulence concerns the magnitude of technology changing within a certain market (Cadogan et al., 2003). Prior B2B marketing research (including work that is grounded in resource-based theory) has demonstrated that "high-tech" companies can successfully develop new goods and services by cooperating with their competitors (e.g., Klimas, Czakon, & Fredrich, 2022; Rusko, 2014). Indeed, there have been various illustrations of coopetition among "high-tech" companies, such as the Sony Corporation and Samsung Electronics working together to produce cell/mobile phones (see Corbo et al., 2023; Gnyawali & Park, 2011). Nonetheless, these "high-tech" markets tend to be extremely competitive (and unpredictable), owing to the rapidly-changing offerings that these organisations supply to their customers (Slater, Hult, & Olson, 2007). As such, to connect with the wider aspects of the resource-based view, while cooperative and competitive behaviours (within coopetition partnerships) might be beneficial between industry rivals, there is likely to be an inflection point when rivalrous forces weaken firms' ability to enhance their performance (Ritala & Hurmelinna-Laukkanen, 2009). This could manifest via technological

[9] The coopetition paradox refers to organisations managing the opposing (yet, "complementary") forces of cooperativeness and competitiveness within coopetition alliances (see, for example, Raza-Ullah et al., 2014; Czakon et al., 2016; Bengtsson & Raza-Ullah, 2024). The coopetition paradox is central to the seminal conceptualisations of the coopetition construct (see Bengtsson & Kock, 2000). Here, it signifies that coopetition strategies can be challenging to manage because they are grounded in opposing forces that should, in theory, not be helpful for firms to implement – as competition should impede cooperation (building upon Czakon et al., 2014; Le Roy & Czakon, 2016). Nonetheless, if the coopetition paradox can be managed carefully, there is evidence to suggest that cooperating with competitors can lead to higher-levels of company performance, coupled with the proposition that well-balanced cooperation and competition should be advantageous (i.e., healthy) for decision-makers (Crick & Crick, 2023; Gnyawali & Park, 2009; Gnyawali & Ryan-Charleton, 2018; Ritala, 2012). Moreover, coopetition (as a B2B marketing construct) contrasts mainstream strategy conceptualisations – not least of which conceptualisations that relate to the resource-based view. Specifically, instead of the conventional theoretical guidance that organisations should operate competitively by leveraging their own resources and capabilities (as per Barney, 1991; Newbert, 2007; Johnson et al., 2011), coopetition fulfils the opposite set of activities, whereby, firms collaborate with their competitors (Bengtsson & Raza-Ullah, 2016; Brandenburger & Nalebuff, 1996; Crick et al., 2023; Hoffmann et al., 2018). Nevertheless, the wider elements of resource-based theory (which includes linkages to coopetition) suggest that higher-levels of coopetition strategies might yield increased company performance, but aspects of the competitive business environment (like competitive intensity) could negatively influence this connection (as per Park et al., 2014; Crick & Crick, 2021c). We acknowledge the comments made by the anonymous reviewers regarding clarifying the role of the coopetition paradox within our investigation.

turbulence amplifying the probable tensions among alliance networks members – and leading to coopetition activities being counter-productive (i.e., weakening the link with company performance) (building upon Telg et al., 2023).

Specifically, as technological turbulence increases, it is possible that organisations become less innovative, as they struggle to differentiate their offerings from those supplied by their competitors (Ritala & Sainio, 2014). Plus, this technological uncertainty could impede firms' abilities to develop "value-adding" goods and services due to them being pre-occupied with avoiding working with untrustworthy rivals – which may be inevitable when managing these B2B marketing networks (extending Tidstrom, 2014; Wu, 2014; Efrat et al., 2022). Moreover, these tensions could manifest via conflict occurring between competing organisations, in terms of such businesses "fighting" to secure demand from a scarce number of customers (with a specialist knowledge of "high-tech" offerings), developing "first-mover advantages", and losing critical intellectual property through sharing excessive quantities of resources and capabilities within coopetition arrangements that yield trust-related problems (Bouncken et al., 2018; Ritala & Hurmelinna-Laukkanen, 2013). Following the broader elements of the resource-based view, this means that technological turbulence could accelerate the probable "dark-sides" of coopetition strategies (Ang, 2008; Crick, 2020). This might manifest through technological volatility propelling conflict and tension-like behaviours (over and above other aspects of the macro-level environment, namely, competitive intensity and market dynamism) that impede the performance-driving advantages of coopetition strategies (Efrat et al., 2022; Telg et al., 2023). Accordingly, we anticipate that:

H4. Technological turbulence negatively moderates the relationship between coopetition strategies and company performance.

2.6. Conceptual framework

To summarise the previous conceptualisations, under the wider facets of resource-based theory (Barney, 2018; Barney et al., 2011; Freeman et al., 2021; Lavie, 2006; Priem & Butler, 2001), our article's conceptual framework contained the following elements (Fig. 2). First, regarding H1, we expected coopetition strategies to yield a positive association with company performance (as per Ritala, 2012; Bengtsson & Kock, 2014; Bengtsson & Raza-Ullah, 2016; Klimas & Czakon, 2018; Crick & Crick, 2023). Second, turning to the interaction effects (H2, H3, and H4), we anticipated that competitive intensity, market dynamism, and technological turbulence negatively (and respectively) influence the link between coopetition strategies and company performance (linking with Luo, 2007; Park et al., 2014; Rusko, 2014; Crick, 2019; Telg et al., 2023). Third, we controlled the outcome variable (namely, company performance) for firm size, firm age, and industry type. We identified these controls (again, grounded in the broader aspects of the resource-based view) as other factors that could contribute to explaining the variance of company performance (following Zahra, 2003; Morgan et al., 2009; Vorhies, Orr, & Bush, 2011). Fourth, we "ran" procedural notions as controls to test the moderating variables – these were statistical tools, rather than theoretically-driven latent variables (consistent with Cadogan et al., 2003; Crick & Crick, 2021b). Our methodology follows in the next section.

3. Methods

3.1. Target population

An ideal setting for coopetition-based research is an industry (and country) that hosts organisations that collaborate with their competitors to varying degrees (as noted by Crick & Crick, 2020). This does not occur in many locations, but some examples in the wider B2B marketing domain (involving qualitative and/or quantitative methodologies) include wine producers in Chile (Felzensztein & Deans, 2013), craft breweries in the United States (Mathias, Huyghe, Frid, & Galloway, 2018), ethically-owned restaurants in the United Kingdom (Chaudhry et al., 2023), tourism services in Poland (Czakon & Czernek, 2016), sporting clubs in New Zealand (Crick & Crick, 2021a), and "high-tech" firms in Germany (Bouncken & Kraus, 2013). Evidently, most of this earlier work has involved single-industry investigations (with decidedly specific end-users), as opposed to multi-industry samples, where a considerable degree of variation might exist across these settings. For our paper, we conducted a multi-industry evaluation of firms (of different sizes) in the United States. We chose this target population to be as generalisable as possible to be a reflection of different organisations within the United States (linking with Bass & Wind, 1995). This way, we could assess such industry-level variance, together with having empirical results that were potentially transferrable to broader populations.[10] The key informants were senior managers within the targeted organisations, as these individuals are normally assigned the authority and responsibility to commit assets towards cooperating with their industry rivals (i.e., coopetition strategies), as well as being able to answer questions pertaining to their firms' performance (following Fernandez & Chiambaretto, 2016; Granata et al., 2018; Efrat et al., 2022). That is, it is probable that these decision-makers could answer questions about the extent to which they engage in coopetition strategies, have knowledge of their competitive business environments, have insights into their company performance, and so on (as per Ritala, 2012; Crick et al., 2022; Crick & Crick, 2023; Mahdi et al., 2024). As such, we deemed senior managers to be highly-suitable key informants.

3.2. Data collection and sampling

To test the elements of the conceptual framework, we designed an online survey (using Qualtrics). Afterwards, our pre-testing stage took place with notable B2B marketing researchers ($n = 3$) and practitioners ($n = 10$). Here, pre-testing involved us working with these scholarly and practical experts to determine that the measures and general survey design were optimal for the study in question (following Bolton, 1993). Specifically, using de-briefing and protocol pre-testing techniques (i.e., in-person versus virtual approaches), we received first-hand opinions and comments about these aspects of the survey. Protocol-based pre-testing involved us sending the survey to such individuals and obtaining their views on another date, whereas, de-briefing forms of pre-testing surrounded us working through the survey in the presence of the expert scholars and practitioners to acquire in-the-moment feedback (Reynolds, Diamantopoulos, & Schlegelmilch, 1993). This aggregate-level feedback suggested that the survey was clear, coupled with it containing "effective" operationalisations (consistent with Reynolds &

[10] Critically, the United States is a highly-developed country on the world stage – and has been utilised as a national context for numerous pieces of research within the wider marketing field, including, but not limited to, coopetition (see, for example, Jaworski & Kohli, 1993; Moorman, 1995; Vorhies & Morgan, 2005; Vorhies et al., 2011; Crick & Crick, 2023). Hence, it is possible that by choosing the United States, we could make inferences about the eventual results from our investigation applying (in a similar capacity) to comparable countries – such as open economies in the developed world (e.g., the United Kingdom, Canada, Australia, New Zealand, etc.). Nonetheless, this cannot be guaranteed, so future B2B marketing research could explore this matter in the years to come (as covered in due course). As an additional point, the goal of our study was not to contribute to contextual settings (here, contributing to knowledge about different sectors within the United States). Rather, our aim was to advance the B2B marketing literature (with an emphasis on coopetition strategies), encapsulating conceptualisations related to the resource-based view. Thus, our chosen empirical context served this purpose (hence, the focus on generalisability – and advancing B2B marketing knowledge). We appreciate the suggestions from the anonymous reviewers about requesting more depth on the empirical context of our article.

Diamantopoulos, 1998). By undertaking both types of survey pre-testing channels, we could make fairly accurate determinations that the survey had been designed and formatted in a reasonable fashion (to achieve the investigation's objective), with suitable operationalisations for the constructs within our conceptual framework. That said, we employed more stringent statistical methodological tools in subsequent stages of our investigation (as explained in due course).

Next, the main data collection stage commenced. This involved us utilising the paid services of a market research agency in the United States to collect data from the above-specified population of interest (similar to Crick et al., 2022). That is, instead of focusing on "textbook-style" sampling approaches (e.g., random or probability sampling), we commissioned this organisation to sample only these types of firms - as part of a contractual agreement.[11] The reason being is that this organisation had active contacts across different industries within the United States – and could reach such respondents quickly (and affordably), vis-à-vis, our competencies (as a research team) (following Hagtvedt, 2011). Then, the market research agency produced a trial sample (i.e., a small group of businesses from the target population). This trial sample mirrored what we aimed for, in which it was comprised of different firms – from various sectors and parts of the United States. Hence, this provided evidence to suggest that the eventual sample would be varied in this regard (which is presented later). On that note, the final sample was 262 companies. Owing to the role of the market research agency in collecting the survey data, we were unable to test for early versus late response bias (in line with Armstong & Overton, 1977). Yet, as covered later, we utilised various robustness checks (for reliability, different forms of validity, and common method variance) to overcome this minor obstacle. Likewise, we could not process the response rate, but we deemed that the number of observations formed a satisfactory sample size. Here, our final sample size was larger than others reported in earlier studies (see, for example, Moorman, 1995; Keinanen & Kuivalainen, 2015; Crick, 2020; Lin, Shao, & Wang, 2022). Hence, alongside the subsequent statistical checks, we had no concerns regarding the sample size.

3.3. Operationalisations

We operationalised the latent variables as follows (Appendix 1 shows the full-list of the measures before we purified and refined them). First, we measured the coopetition strategies construct using a seven-point Likert scale, with five items, ranging from: 1 = strongly disagree to 7 = strongly agree (Bouncken et al., 2018; Bouncken & Kraus, 2013). For emphasis, we acknowledge that the coopetition construct (or comparable latent variables) has been operationalised in various ways (see, for example, Ang, 2008; Ritala, 2012; Bengtsson, Raza-Ullah, & Vanyushyn, 2016; Shu et al., 2017; Cui, Yang, & Vertinsky, 2018; Crick & Crick, 2019). Yet, we deemed that the chosen measurement scale for our study was "effective" because it evaluates the degree to which firms collaborate with their competitors (i.e., the propensity of behavioural forms of coopetition). Such issues were consistent with what we sought to operationalise. Second, we captured the three environmental moderating variables on seven-point Likert scales, namely, competitive intensity (six items), market dynamism (five items), and technological turbulence (four items), ranging from: 1 = strongly disagree to 7 = strongly agree (Cadogan et al., 2003; Jaworski & Kohli, 1993; Slater & Narver, 1994).

Third, we operationalised company performance through a seven-point Likert scale, with five items, ranging from: 1 = strongly disagree to 7 = strongly agree (Morgan et al., 2009; Vorhies & Morgan, 2005). Fourth, we measured the controls in the following respects.[12] That is, we assessed firm size via the number of full-time members of staff (Crick et al., 2022), we captured firm age by calculating the number of years since the sampled businesses were operating (Vorhies et al., 2011), and we operationalised industry type by recording the sectors of these firms and re-coding them into a dummy variable, in which: 0 = a "low-tech" sector and 1 = a "high-tech" sector (Zahra, 2003). For clarity, we used single-indicators to measure the controls. This was acceptable – given that single-item questions could evaluate the nomological properties of such latent variables (see Hayduk & Littvay, 2012). Fifth, we measured fashion consciousness on seven-point Likert scale, with four items, ranging from: 1 = strongly disagree to 7 = strongly agree (Sproles & Kendall, 1986). We used this construct to test for evidence of common method varied under the marker variable technique. Please note that the robustness checks (including issues pertaining to common method variance) will be covered later.

3.4. Data analysis

We analysed the survey data in the subsequent ways. First, via SPSS 25, we recorded the profiling information of the final sample (as per Bouncken & Kraus, 2013). A good mixture of organisations took part in our investigation, with respect of their full-time employees, ages, annual sales, main customers, and job titles. Further, the respondents originated from numerous sectors and regional locations within the United States. Specifically, we acquired survey responses from 42 states and Washington DC – making it a national-level sample (as opposed to just the main population centres of the country). This suggested that our

[11] We appreciate that paid data collection services in survey-based research are sometimes criticised (see, for example, Ford, 2017; Hulland & Miller, 2018). However, in our investigation, we deemed that this reputable market research agency was a credible organisation due to various reasons. These factors included their focus on sampling respondents that did not "rush" their survey answers. Further, earlier work has employed equivalent forms of methodological assistance in survey data collection processes (e.g., Crick et al., 2022; Hagtvedt, 2011). To that end, our decision to sample firms via a paid market research agency was a credible route to follow. Additionally, although random (or probability) sampling was not used, the multi-industry sample of firms throughout the United States allowed us to increase the odds of generalisable results due to this not being a single-sector study (following Short, Ketchen Jr., & Palmer, 2002). Put another way, we sought to generate survey responses from various sectors (and geographic locations), making industry-level biases an alleviated issue. We stress that generalisability was not assumed within our study, but the chances of such results were increased under our stringent research design. We acknowledge the anonymous reviewers for asking for additional pieces of information regarding our data collection activities (e.g., sampling respondents).

[12] We used the control variables to identify other factors that might contribute to explaining the variance of the outcome variable (namely, company performance), which in turn, could supplement the core hypothesised paths (Crick, 2021). Accordingly, we grounded firm size, firm age, and industry type in the wider themes of the resource-based view – to mirror the conceptualisations pertaining to the hypotheses (see Barney, 1991; Barney et al., 2011; Freeman et al., 2021; Helfat et al., 2023; Hunt & Morgan, 1995). Regarding firm size, larger businesses might be able to create enduring value for their customers than smaller organisations within their markets due to them possessing larger bundles of resources and capabilities (Morgan et al., 2009). Therefore, we modelled firm size as a control variable. Concerning firm age, more established companies are expected to have had the time to acquire insights into delivering superior value to their end-users (Vorhies et al., 2011). Hence, we controlled the outcome variable for firm age. Turning to industry type, different sectors have varying dynamics (making it important to evaluate notable comparisons between industry-level groups), such as customers' preferences, rivalry between competitors, and supply chain channels (Zahra, 2003). With this in mind, we evaluated industry type as a control path. Further, as mentioned earlier, we utilised procedural controls to test the interaction effects – here, the main paths from competitive intensity, market dynamism, and technological turbulence (in line with Cadogan et al., 2003; Crick & Crick, 2021b). We appreciate the methodological suggestions of the anonymous reviewers about the role of the control paths within our investigation.

Table 1
Profiling information about the final sample.

Characteristics	Categories	Frequency	Percentage (%)
Full-time employees	0–9 people	50	19.10
	10–50 people	38	14.50
	51–250 people	44	16.80
	More than 250 people	130	49.60
	TOTAL	**262**	**100.00**
Industry types	A "low-tech" sector	80	30.50
	A "high-tech" sector	182	69.50
	TOTAL	**262**	**100.00**
Firm ages	0–6 years	26	9.90
	7–15 years	58	22.20
	More than 15 years	178	67.90
	TOTAL	**262**	**100.00**
Annual sales ($US)	Less than 2 million	76	29.00
	2–10 million	57	21.80
	10–50 million	36	13.70
	More than 50 million	93	35.50
	TOTAL	**262**	**100.00**
Respondents' job titles	Analyst Manager	9	3.40
	Brand Manager	18	6.90
	Chief Executive Officer	81	30.90
	Engineering Manager	13	5.00
	Marketing Manager	9	3.40
	Product Manager	76	29.00
	Sales Manager	7	2.70
	Vice President	23	8.80
	Other Manager	26	9.90
	TOTAL	**262**	**100.00**
Main customers	Firms	88	33.60
	Consumers	69	26.30
	Firms and consumers	105	40.10
	TOTAL	**262**	**100.00**
Regional areas	Northeast	71	27.10
	Midwest	56	21.40
	South	67	25.60
	West	66	25.20
	Other	2	0.70
	TOTAL	**262**	**100.00**

We condensed the industry types and regional areas into groups for formatting purposes (as dozens of categories existed within the final dataset).

eventual findings (i.e., during the testing of the elements of our conceptual framework) were not exclusive to a particular organisation type (increasing the odds of generalisability). Owing to the role of the reputable market research agency during the data collection processes, there were no instances of missing data – making a missing value analysis unnecessary (Crick, 2024). Indeed, the lack of missing data provided more evidence to suggest that this company had sampled firms in accordance with its contracted brief (Table 1).

Second, through SPSS 25, we "ran" an exploratory factor analysis model by employing a principal components analysis extraction and a varimax rotation, together with suppressing small factor loadings (those that were below 0.45) (similar to Peterson, 2000). These approaches were "appropriate" for the measurement items that we used to capture the latent variables (Crick, 2024). During this stage, we identified a couple of problematic indicators – because they loaded onto components that they were not designed to operationalise (MARK_3 and MARK_4). This was normal, as such multivariate statistical tests can involve eliminating items, so that constructs are accurately operationalised (see Sharma, 1996). After we eliminated these items, the remaining indicators for coopetition strategies, competitive intensity, market dynamism, technological turbulence, company performance, and fashion consciousness loaded onto six distinct factors (as anticipated). Hence, the core factor structure was unaffected by the elimination of these items. We found that the Kaiser-Meyer-Olkin test of sampling adequacy was pleasing (0.92), as were the outcomes from Bartlett's test of sphericity ($\chi^2 = 5106.13$; $df = 351$; Sig. = 0.00). Furthermore, we noted that 72.50% of the total variance was explained from the measurement items within the exploratory factor analysis model (Table 2).

Table 2
Exploratory factor analysis model.

	Components					
Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
COOP_1	0.81					
COOP_2	0.81					
COOP_3	0.87					
COOP_4	0.87					
COOP_5	0.86					
COMP_1		0.74				
COMP_2		0.68				
COMP_3		0.79				
COMP_4		0.64				
COMP_5		0.70				
COMP_6		0.64				
TECH_1			0.88			
TECH_2			0.71			
TECH_3			0.70			
TECH_4			0.82			
PERF_1				0.67		
PERF_2				0.64		
PERF_3				0.82		
PERF_4				0.81		
PERF_5				0.83		
MV_1					0.80	
MV_2					0.81	
MV_3					0.82	
MV_4					0.76	
MARK_1						0.55
MARK_2						0.49
MARK_5						0.47

The indicators produced a six-factor solution. We ordered these measurement items for presentational purposes, as after we had eliminated the problematic items from the exploratory factor analysis model, there were no high cross-factor loadings (i.e., above 0.45).

Third, through LISREL 8.71, we used a confirmatory factor analysis model to refine measures (Cadogan et al., 2009). This involved the single-indicators, which were noted as being fixed values within the syntax file to supplement the multi-item operationalisations (as per Crick et al., 2022). Also, we transformed the ratio-based single-item measures (namely, the firm size and firm age constructs) by natural logarithms to reduce their variances (Crick & Crick, 2019). Here, we eliminated a handful of indicators (COOP_2, COOP_3, COMP_1, COMP_4, COMP_6, TECH_2, TECH_3, PERF_4, PERF_5, MARK_5, and MV_4), but this was to be expected – as this usually occurs when purifying operationalisations during such multivariate statistical techniques (Cadogan et al., 2012; Sharma, 1996). Our final (retained) measures had relatively large standardised factor loadings (λx), comparatively small standardised error variances (θδ), and significant *t*-values. Additionally, our model fit indices were above the minimum benchmarks ($\chi^2 = 170.03$; $df = 119$; $\chi^2/df = 1.43$; Sig. = 0.00; RMSEA = 0.04; CFI = 0.98; IFI = 0.98; NNFI = 0.97; GFI = 0.94; SRMR = 0.04). Moreover, pleasingly, we retained at least two items for all multi-item constructs – meaning that the structure of the multi-item operationalisations remained intact throughout, and after, the operationalisation purification processes (Table 3).

Fourth, via SPSS 25, alongside examining the Pearson correlation coefficients and descriptive statistics, we tested the hypotheses and control paths through an ordinary least squares regression model (Crick & Crick, 2019). We deemed that ordinary least squares regression was a suitable model-testing tool because there was one outcome variable (namely, company performance) and multiple independent variables, including the moderators (following Katsikeas, Samiee, & Theodosiou, 2006). During the ordinary least squares regression analysis, we recorded the unstandardised regression coefficients (β), the standardised regression coefficients (beta), the standard errors (SE), the *t*-values, and the significance-levels. Here, we used "residual-centering" to transform the moderators – to lessen multi-collinearity concerns (Echambadi &

Table 3
Confirmatory factor analysis model.

	Standardised factor loadings (λx)		Standardised error variances (θδ)	
Items	λx	*t*-values	θδ	*t*-values
COOP_1	0.84	19.55	0.29	9.11
COOP_4	0.94	Fixed	0.12	4.75
COOP_5	0.87	21.10	0.24	8.14
COMP_2	0.75	Fixed	0.44	7.55
COMP_3	0.70	9.47	0.51	8.43
COMP_5	0.67	9.14	0.55	8.96
TECH_1	0.84	Fixed	0.30	5.32
TECH_4	0.91	11.94	0.17	2.83
PERF_1	0.88	Fixed	0.23	5.89
PERF_2	0.84	15.62	0.29	7.35
PERF_3	0.69	12.12	0.53	10.08
MV_1	0.93	19.17	0.14	6.70
MV_2	0.96	19.85	0.08	4.46
MV_3	0.82	Fixed	0.33	10.22
MARK_1	0.73	Fixed	0.46	8.21
MARK_2	0.77	10.50	0.41	7.31
SIZE	1.00	Fixed	0.00	Fixed
AGE	1.00	Fixed	0.00	Fixed
INDS	1.00	Fixed	0.00	Fixed

The critical *t*-value was 1.65 (5.00%, one-sided). Please note that we used these measures to form the final operationalisations (i.e., we utilised them to test the elements of the conceptual framework).

Hess, 2007). Indeed, the relatively low variance inflation factor (VIF) scores (that were smaller than 10.00) were indicative of multi-collinearity not being at play (Becker, Ringle, Sarstedt, & Volckner, 2015; Brouthers, Gao, & McNicol, 2008). Plus, when presenting the moderation effects in graphs, we utilised "spotlight analyses" to calculate the slope values at one standard deviation above and below the mean (Irwin & McClelland, 2001; Spiller, Fitzsimons, Lynch, & McClelland, 2013).

3.5. Reliability and validity assessments

Using SPSS 25, we assessed reliability through the Cronbach's alpha coefficients (α) of the multi-item measurement scales (internal consistency), which were all larger than 0.70 (Churchill Jr., 1979). We checked face validity via pre-testing our survey with expert scholars and practitioners (following Bolton, 1993; Reynolds et al., 1993; Reynolds & Diamantopoulos, 1998). We addressed content validity through employing established (i.e., "tried-and-tested") operationalisations for all constructs within the survey (Peter, 1981). Through LISREL 8.71, we monitored convergent validity by having composite reliabilities above 0.60 and average variance extracted values that were equal to, or greater than, the threshold of 0.50 (Crick & Crick, 2021a). We found that the composite reliabilities and average variance extracted scores reinforced the Cronbach's alpha coefficients (α), since they were more stringent evaluations – that were not susceptible to critical limitations, like being sensitive to the number of measurement items (extending Cadogan et al., 2009). We evaluated discriminant validity through comparing the squared "phi matrix" correlations (accessed from LISREL 8.71) against the average variance extracted values (Table 4). Since the largest squared "phi matrix" correlation (0.49) was below the smallest average variance extracted value (0.50), problems did not exist in this capacity (Fornell & Larcker, 1981). We appreciate that a borderline result was produced (a difference of 0.01), but nevertheless, the requirements for passing this test were met (see Crick et al., 2022; Voorhees, Brady, Calantone, & Ramirez, 2016).

3.6. Common method variance checks

There are various ways to assess common method variance in survey-based research (as noted by Chang, Van Witteloostuijn, & Eden, 2010; Hulland, Baumgartner, & Smith, 2018). At a basic-level (i.e., on a procedural front), our survey was designed in an easy-to-follow manner (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). This involved us using clear text, helpful instructions, and easy-to-follow tools (e.g., interactive options for answering the questions). Further, we placed attention checks within our survey to make sure that the respondents had read the questions carefully, together with the measures not being presented in a logical order (e.g., the independent variables were not adjacent to the outcome variable within the survey) (following Gummer, Rosmann, & Silber, 2021). Moreover, by utilising the paid services of a market research agency, we were assured that the data would be a of a high-standard – not least of which because they monitored the time that the respondents took to answer the questions and would re-sample participants if they deemed that any completions were "rushed" (similar to Hagtvedt, 2011; Crick et al., 2022). Then, we "ran" the marker variable technique through SPSS 25. That is, we created a bivariate correlation matrix – containing all constructs that were used to test the elements of the conceptual framework. Next, we produced a partial correlation matrix, with the same latent variables, but controlling for fashion consciousness as the marker variable (as it was theoretically unrelated to the other constructs – the ideal function of a marker variable). We calculated and averaged the differences between the two correlation matrices (both involving Pearson's correlation coefficients). Since a relatively small mean correlation existed ($r = 0.06$), it is probable that these biases were not present (Lindell & Whitney, 2001). Plus, the fashion consciousness scale had a somewhat large standard deviation (1.72, relative to a mean 4.52), permitting its use as our marker variable.

Table 4
Discriminant validity test and the final scale reliabilities.

Latent variables	X1.	X2.	X3.	X4.	X5.	X6.	X7.	X8.	X9.
X1. Coopetition strategies	–								
X2. Competitive intensity	0.25	–							
X3. Technological turbulence	0.15	0.20	–						
X4. Market dynamism	0.25	0.49	0.38	–					
X5. Company performance	0.23	0.19	0.12	0.38	–				
X6. Fashion consciousness (marker variable)	0.32	0.27	0.13	0.38	0.40	–			
X7. Firm size (log)	0.02	0.05	0.07	0.05	0.16	0.07	–		
X8. Firm age (log)	0.00	0.00	0.00	0.00	0.00	0.00	0.26	–	
X9. Industry type (dummy variable)	0.00	0.03	0.02	0.02	0.02	0.00	0.17	0.01	–
Final scale reliabilities									
Internal consistency	0.92	0.74	0.87	0.72	0.84	0.93	–	–	–
Composite reliability	0.92	0.75	0.87	0.72	0.85	0.93	–	–	–
Average variance extracted	0.78	0.50	0.77	0.56	0.65	0.82	–	–	–

We could not calculate the scale reliabilities for the single-indicators. However, since the multi-item measures produced scale reliabilities that were equal to, or greater than, the minimum benchmarks, we deemed that the single-item operationalisations (namely, those that were used to capture the firm size, firm age, and industry type constructs) were reliable.

As an additional tool, we undertook Harman's single-factor test to assess the statistical data for evidence of common method variance. This involved us "running" all refined multi-item constructs in an exploratory factor analysis model (using SPSS 25), with a principal components analysis extraction, a varimax rotation, and suppressing small factor loadings (that were below 0.45) (comparable with Peterson, 2000). The Kaiser-Meyer-Olkin test of sampling adequacy was acceptable (0.87) and Bartlett's test of sphericity produced a satisfactory result (χ^2 = 2656.41; df = 120; Sig. = 0.00). Also, 81.06% of the total variance was explained by the six-factor solution. Further, alongside multiple (six) components being extracted, the largest component explained 16.82% of the total variance – an indication that common method variance problems were not at play – as this value was well-below the cut-off score of 50.00% (see Hamzah et al., 2023; Lings, Durden, Lee, & Cadogan, 2014). Although Harman's single-factor test has been criticised (e.g., Chang et al., 2010; Hulland et al., 2018), in our article, it serves as a way to reinforce the more stringent marker variable technique (as recommended by Crick, 2024). Thus, collectively (including the procedural tools), it is improbable that common method variance negatively impacted our investigation. The assessments for common method variance supplemented our other robustness checks – namely, our evaluations for reliability and various forms of validity. Our results are stated as follows.

4. Results

The bivariate correlations (coupled with the main descriptive statistics) outlined the core associations between the latent variables (Table 5). Turning to the ordinary least squares regression analysis, we found that the coopetition strategies construct had a positive and significant connection with company performance. As such, H1 was supported. Regarding the interaction effects, we identified somewhat surprising results. That is, we discovered that competitive intensity and technological turbulence positively and significantly moderated the link between coopetition strategies and company performance. Henceforth, we encountered the opposite findings for H2 and H4 (i.e., vis-à-vis, what we hypothesised). Yet, our results showed that market dynamism yielded a negative (but non-significant) moderation effect. Thus, H3 was unsupported. The control variables (including the procedural paths) had mixed support, as we found that some factors were significant (positive and negative) and others were non-significant. Collectively, our results signified that 46.00% of the variance of the outcome variable was explained, alongside there being a significant *F*-statistic and VIF scores that did not denote multi-collinearity problems (Table 6). Appendix 2 outlines the graphs for the moderating variables, as well as the "spotlight analyses". We discuss these findings, with insights into how they advance the B2B marketing literature, in the subsequent section.

Table 6
Ordinary least squares regression analysis.

	Outcome variable: company performance					
Independent variables	β	SE	Beta	*t*-values	Sig.	VIF
Firm size (log)	0.10	0.02	0.26	4.26	0.00	1.81
Firm age (log)	−0.03	0.06	−0.02	−0.45	0.66	1.44
Industry type (dummy variable)	−0.09	0.12	−0.04	−0.74	0.46	1.24
Competitive intensity	−0.37	0.11	−0.40	−3.28	0.00	7.14
Market dynamism	0.34	0.12	0.38	2.94	0.00	8.04
Technological turbulence	−0.36	0.10	−0.41	−3.46	0.00	6.64
Coopetition strategies (H1)	0.36	0.05	0.55	7.72	0.00	2.40
Coopetition strategies x competitive intensity (H2)	0.11	0.03	0.48	3.90	0.00	7.14
Coopetition strategies x market dynamism (H3)	−0.02	0.03	−0.07	−0.57	0.57	7.46
Coopetition x technological turbulence (H4)	0.08	0.03	0.35	3.01	0.00	6.64
Model fit summary						
R^2	0.48					
Adjusted R^2	0.46					
SE of estimate	0.82					
Intercept value	5.45					
F-statistic	22.80					
Sig.	0.00					

The critical *t*-value was 1.65 (5.00%, one-sided because the paths were directional). For clarity, we modelled competitive intensity, market dynamism, and technological turbulence as procedural controls to test them as moderators. Additionally, the intercept score was significant, with a *t*-value of 10.00 (Sig. = 0.00). We did not include the fashion consciousness construct within the model-testing stage, as its sole purpose was to be a key robustness check – namely, for common method variance under the marker variable technique.

5. Discussion and theoretical implications

Prior to our investigation, there was a vast amount of work (encapsulating conceptualisations that were underpinned by resource-based theory) pertaining to the performance outcomes of coopetition activities – which often showed that if businesses cooperate with their industry rivals, they can yield higher-levels of company performance (e.g.,

Table 5
Bivariate correlation matrix, descriptive statistics, and final scale reliabilities.

Latent variables	X1.	X2.	X3.	X4.	X5.	X6.	X7.	X8.	X9.
X1. Coopetition strategies	–								
X2. Competitive intensity	0.41**	–							
X3. Technological turbulence	0.35**	0.36**	–						
X4. Market dynamism	0.41**	0.51**	0.49**	–					
X5. Company performance	0.43**	0.37**	0.28**	0.47**	–				
X6. Fashion consciousness (marker variable)	0.51**	0.45**	0.33**	0.53**	0.57**	–			
X7. Firm size (log)	0.15*	0.20**	0.24**	0.20**	0.37**	0.24**	–		
X8. Firm age (log)	−0.05	0.01	0.06	−0.03	0.07	−0.05	0.51**	–	
X9. Industry type (dummy variable)	0.06	0.13*	0.12*	0.11†	0.15*	0.07	0.41**	0.10†	–
Descriptive statistics									
Mean	4.26	5.07	5.38	5.05	5.25	4.52	5.43	3.27	0.69
Standard deviation	1.68	1.19	1.26	1.23	1.11	1.72	3.06	0.99	0.46
Minimum	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Maximum	7.00	7.00	7.00	7.00	7.00	7.00	1.00	5.40	1.00

†$p < .10$; *$p < .05$; **$p < .01$ (two-tailed tests). These values refer to the Pearson's correlation coefficients. Furthermore, we included the fashion consciousness construct within the bivariate correlation matrix to highlight the decidedly large variance of this latent variable, coupled with its associations with the other constructs. In turn, statistically-speaking, we found that the fashion consciousness construct served as a suitable marker variable in the marker variable technique (when testing for evidence of common method variance).

Bengtsson & Kock, 1999; Bengtsson & Raza-Ullah, 2024; Czernek & Czakon, 2016; Gernsheimer et al., 2021; Gnyawali & Park, 2009; Luo et al., 2007; Meena et al., 2023; Ritala, 2012). However, a large proportion of this body of knowledge has been somewhat simplistic, in which there has been a limited awareness of the moderators (not least of which key environmental factors) that might affect the coopetition strategies - company performance link (as noted by Shu et al., 2017; Hoffmann et al., 2018; Crick, 2019). Consequently, we argued that it was important, and timely, to unpack this association by shedding light on the moderating variables (here, facets of the macro-level environment – competitive intensity, market dynamism, and technological turbulence) that might shape the success (or failure) of these inter-firm networking activities. Our core goal was to denote the boundary conditions of these B2B marketing behaviours via exploring negative or positive effects from key environmental forces that could impact the coopetition strategies – company performance link. The resource-based view (and its wider themes – not just seminal factors, like the VRIN framework) served as a useful theoretical lens for unpacking the underlying mechanisms surrounding the link between coopetition strategies and company performance because it covers the role of macro-level environment and stakeholder issues (building upon Ritala, 2012; Crick & Crick, 2021c; Corbo et al., 2023). Here, the wider elements of this theoretical lens helped to highlight how the interplay between cooperation and competition unfolds in volatile macro-level environmental conditions – as these matters involved relational issues and coverage of the competitive business environment (following Crick & Crick, 2020; Crick et al., 2024; Mahdi et al., 2024).

Based on a multi-sector sample of 262 firms in the United States (of various sizes and regional locations), our findings contribute to the extant literature in the subsequent ways. First, we found that the coopetition strategies construct yielded a positive and significant connection with company performance. This result supplements the viewpoint that if firms cooperate with their competitors, they can obtain advantages that would not be available if they operated on their own, like acquiring new customers, delivering enduring value to their end-users, operating more efficiently and "effectively", and beyond (Bouncken et al., 2015; Crick & Crick, 2021a; Gnyawali & Park, 2009; Ricciardi, Zardini, Czakon, Rossignoli, & Kraus, 2022; Rusko, 2011; Yami & Nemeh, 2014). Since there is mixed evidence pertaining to whether coopetition is (or is not) a performance-enhancing B2B marketing strategy (e.g., Crick, 2020; Crick & Crick, 2023; Le Roy & Czakon, 2016; Luo et al., 2007), our study helped to settle a debate by finding another indication (linked to the broader facets of the resource-based view) to suggest that higher-levels of coopetition strategies drive company performance. Thus, a contribution to the B2B marketing domain is that coopetition (on its own) is a mechanism to boost company performance. Second, while the link between coopetition strategies and company performance was important, as mentioned above, the critical contribution of our article was to unpack this connection by evaluating certain moderators that might impact the underlying mechanisms driving this association (in line with Shu et al., 2017; Hoffmann et al., 2018; Crick, 2019). Hence, we deemed it vital to focus on the interaction effects from competitive intensity, market dynamism, and technological turbulence – to delve deeper into the boundary conditions of coopetition strategies. For emphasis, these moderators (driven by the extended features of resource-based theory) were considered to have the potential to cover circumstances where coopetition strategies are (and are not) likely to boost company performance (i.e., again, to serve as boundary conditions to these B2B marketing activities). This provides further scope to denote the problems that are associated with organisations collaborating with their industry rivals (extending Tidstrom, 2014; Mattsson & Tidstrom, 2015; Czakon et al., 2016; Crick, 2020).

We proposed that these aspects of the macro-level environment were pertinent (and distinct) external forces that influence how firms operate within their sectors (Cadogan et al., 2003; Jaworski & Kohli, 1993; Slater & Narver, 1994). Indeed, we argued that each of these macro-level environmental factors were negatively impact the connection between coopetition strategies and company performance. This is because they were large-scale (and external) conditions that could impose uncertainties that de-stabilise the fragile nature of the coopetition paradox – unhinging the balance between cooperation and competition (in line with Ritala & Hurmelinna-Laukkanen, 2009; Ritala & Sainio, 2014; Mattsson & Tidstrom, 2015; Efrat et al., 2022). Again, we determined (under the broader elements of the resource-based view) these factors to delve deeper into the problematic aspects of coopetition strategies. Plus, they each expand upon recent work that has highlighted how large-scale environmental shocks (including issues that pertain to the COVID-19 pandemic) can be harmful for coopetition strategies and other B2B marketing activities (Obal & Gao, 2020; Ritter & Lund Pedersen, 2020; Zahoor et al., 2022). That said, we encountered surprising results. Specifically, we found that competitive intensity produced a positive and significant interaction effect. Albeit counter-intuitive, this could be attributed to competitive rivalry being "complementary" for organisations when cooperating with their industry rivals. To put this into context, a considerable number of investigations have evaluated coopetition in regional clusters, like alcohol-producing firms or businesses within the broader hospitality sector (e.g., Chaudhry et al., 2023; Felzensztein et al., 2019; Felzensztein & Deans, 2013; Mathias et al., 2018). Such authors have typically noted that decision-makers must find trustworthy coopetition partners, as well as those targeting similar product-markets (see Felzensztein et al., 2018; Granata et al., 2018). Here, increased competitive intensity could help decision-makers to engage in better (i.e., performance-enhancing) forms of coopetition strategies, rather than being forced to settle with collaborating with competitors that are insufficient for achieving their goals (e.g., those that do not help them to create enduring customer value) (as found by Crick & Crick, 2021a).

In more depth, while an influx of rivalry (driven through increased competitive intensity) might unhinge the potentially fragile coopetition paradox (Mattsson & Tidstrom, 2015), it could also serve as a way for firms to locate "complementary" coopetition partners to boost their performance. Without such forms of competitive rivalry, organisations could have a limited amount of choice over their prospective coopetition partners, together with having to take a "leap-of-faith" by collaborating with rival firms that may be untrustworthy, target different product-markets, have varied supply chains, and beyond. Thus, contrary to what was hypothesised (under the broader dimensions of resource-based theory), there are reasons why competitive intensity positively and significantly influenced the coopetition strategies - company performance association (building upon Felzensztein & Deans, 2013; Mathias et al., 2018; Felzensztein et al., 2019). Indeed, our counter-intuitive result advances the B2B marketing literature by finding more evidence about how competitive intensity could be beneficial when companies join forces with their competitors (extending Crick, 2019; Crick & Crick, 2021a). In essence, the competitive business environment (here, manifesting via competitive intensity) was a macro-level force that is advantageous (not harmful) for organisations that cooperate with their industry rivals. Additionally, technological turbulence yielded a positive and significant interaction effect. This was another counter-intuitive result, whereby, we expected that technological volatility might distort the coopetition paradox due to the ever-changing forms of competitive rivalry and customers' wants and needs in these arenas (Ang, 2008; Gnyawali & Park, 2011; Rusko, 2014). Thus, we anticipated that technological turbulence reduces innovativeness (via limiting creativity over developing new products and services), whereby, the firms involved in coopetition partnerships (under technologically-turbulent conditions) are pre-occupied with not working with untrustworthy competitors, which leads them to make mistakes in their product-market ventures (consistent with Ritala & Hurmelinna-Laukkanen, 2013; Wu, 2014; Bouncken et al., 2018).

It is possible that with higher-degrees of technological turbulence, this market-level uncertainty facilitates an incentive for businesses to

engage in performance-enhancing coopetition arrangements because of a mutual, and sustained, need (shared between the rival firms involved in such B2B marketing ventures) to collaborate with their competitors. In arenas where technology is rapidly-changing, it is likely that firms could struggle to innovate improved goods and services on their own (i.e., without the assistance of their industry rivals), and in turn, not create superior forms of customer value (linking with Cadogan et al., 2003; Slater et al., 2007). Based on our counter-intuitive result, it appears that by engaging in coopetition strategies in "high-tech" settings, decision-makers can be incentivised to receive up-to-date information about industry trends, new technological developments, consumers' preferences for such "high-tech" advancements, and more (building upon Bouncken & Kraus, 2013; Klimas et al., 2022; Corbo et al., 2023). Linking with the wider aspects of resource-based theory, although tensions may be present in these coopetition partnerships (see Crick, 2020; Efrat et al., 2022; Ritala & Hurmelinna-Laukkanen, 2009; Ritala & Sainio, 2014; Wu, 2014), technological turbulence could serve as an aspect of the macro-level environment that stabilises the fragile coopetition paradox by amplifying (not reducing) the key performance outcomes that are at play. Hence, technological turbulence could facilitate stronger (i.e., performance-enhancing) forms of coopetition that assist organisations to survive and prosper within their markets (building upon Telg et al., 2023). Henceforth, another contribution to the B2B marketing field is that high-levels of technological turbulence, as well as competitive intensity, are not necessarily a harmful set of forces, as certain macro-level environmental factors can amplify company performance when combined with coopetition strategies (responding to Crick, 2019).

Further, we found that market dynamism negatively (but non-significantly) influenced the link between coopetition strategies and company performance. Driven by the broader elements of the resource-based view, we anticipated that if customers' wants and needs are changing at a rapid rate, this market-level uncertainty might distort impact how organisations operate within their sectors, including responding to "grand challenges", like the COVID-19 pandemic (Crick et al., 2023; Crick & Crick, 2020). To that end, we seemingly found that market dynamism is an aspect of the macro-level environment that is decidedly (and relatively) unimportant for decision-makers engaging in coopetition strategies (contrasting Luo, 2007). This might be because the coopetition paradox is more likely to be impacted (positively or negatively) by other environmental forces, such as competitive intensity and technological turbulence (building upon Hoffmann et al., 2018; Crick, 2019; Telg et al., 2023). It is possible that volatility pertaining to customers is more prominent in B2C marketing strategies (e.g., a market orientation), rather than B2B marketing ventures, including coopetition (extending Jaworski & Kohli, 1993; Slater & Narver, 1994; Cadogan et al., 2009; Crick et al., 2022). This emphasises why it is crucial to unpack the different forms of environmental uncertainty (for which resource-based theory is an ideal lens for this purpose), as opposed to conceptualising, operationalising, and testing the macro-level environment as a uni-dimensional construct (following Jaworski & Kohli, 1993; Slater & Narver, 1994; Cadogan et al., 2003). Otherwise, authors risk confusing which environmental forces are instrumental (versus unimportant) in affecting the key outcomes of coopetition strategies (in positive and negative capacities). This matter has been addressed within our investigation by embracing the heterogeneity of the macro-level environment (via competitive intensity, market dynamism, and technological turbulence) and its impact on the coopetition paradox (responding to Crick, 2019). This builds upon other commercial studies that evaluated the role of the competitive business environment (in various forms) on the performance outcomes of several types of marketing strategies (e.g., Cadogan et al., 2009; Ozturan et al., 2014; Slater & Narver, 1994). Now, similar assertions can be made about coopetition strategies within the B2B marketing field (and the nature of the relationship between these activities and company performance).

Critically, our article has contributed to the B2B marketing literature by shedding light on the facets of the macro-level environment that do not negatively influence the performance consequences of coopetition strategies. Put another way, our paper has found improved evidence about relatively unproblematic environmental forces (here, market dynamism) and other beneficial factors (i.e., competitive intensity and technological turbulence) on the coopetition paradox – not just those that are harmful for businesses that cooperate with their industry rivals. Third, we found that the main (non-procedural) control variables highlighted some mixed results, but were not vital in explaining the variance of the outcome variable (albeit they were connected to the wider themes of resource-based theory). In short, we discovered that firm size was a positive and significant driver of company performance (following Morgan et al., 2009). Yet, our findings signified that firm age and industry type yielded negative and non-significant results (contrasting Zahra, 2003; Vorhies et al., 2011). This suggests that as businesses obtain a greater volume of tangible and intangible assets (a function of firm size), they can increase their market-level successes more "effectively" than via their industry-level experiences and product-markets served (which would be facilitated through the firm age and industry type constructs) (supplementing Zahra, 2003; Hooley et al., 2005; Vorhies et al., 2011). This mirrors the seminal features of resource-based theory, namely, the VRIN framework (Barney, 1991). Nonetheless, despite being underpinned by the broader elements of the resource-based view, we placed more emphasis on the results from the hypotheses, since such issues were more interesting in advancing the B2B marketing discipline. At any rate, we found that these constructs were useful to evaluate the other issues that might have been at play within the conceptual framework.

Fourth, we have supplied new insights that are related to the dangers related to coopetition strategies. In other words, prior to our paper, several authors have explored these negative aspects, in terms of the unintended consequences of cooperating with industry rivals, like tensions (e.g., conflict) among the organisations involved in these B2B marketing networks (see Bengtsson & Raza-Ullah, 2024; Crick & Crick, 2021d; Luo et al., 2007; Manzhynski & Biedenbach, 2023; Tidstrom, 2014). This was an issue that our article examined when unpacking the coopetition strategies - company performance relationship. This manifested through the potential for key macro-level environmental forces to unhinge the precarious nature of the coopetition paradox. In doing so, we have provided improved evidence on the management of coopetition strategies, in terms of the mechanisms that impact company performance (building upon Le Roy & Czakon, 2016; Crick, 2020; Crick & Crick, 2021b). By most accounts, the macro-level environment is a performance-reducing set of moderators (driven by the broader aspects of the resource-based view) (Ritala, 2012; Telg et al., 2023). Yet, the positive moderation effects from competitive intensity and technological turbulence (and the non-significant moderating path from market dynamism) provided us with stronger insights that these potential "dark-sides" are not as damaging as certain earlier studies have suggested (e.g., Crick & Crick, 2020; Luo et al., 2007; Mattsson & Tidstrom, 2015; Park et al., 2014). We, therefore, offer scholarly insights into the boundary conditions of these B2B marketing activities. In doing so, we have challenged these earlier viewpoints about the harmful aspects of coopetition strategies.

While there may be "dark-sides" of cooperating with competitors (Crick, 2020; Crick et al., 2024; Czakon & Czernek, 2016; Luo et al., 2007; Tidstrom, 2014), our study uncovered novel evidence about coopetition being a performance-driving B2B marketing strategy, in which sharing assets with competing organisations facilitates new opportunities (in line with Gnyawali & Park, 2009; Bengtsson & Raza-Ullah, 2016; Pattinson et al., 2018; Crick et al., 2022; Meena et al., 2023). Likewise, our empirical results suggested that there are certain macro-level environmental factors (namely, competitive intensity and technological turbulence, but not market dynamism) that can propel (not impede) the positive aspects of coopetition strategies. Hence, despite there needing to be some caution exercised within these B2B marketing partnerships, coopetition is an "effective" way to overcome

certain market-wide struggles (e.g., possessing limited resources and capabilities) to boost company performance (Bengtsson & Kock, 2000; Bouncken et al., 2015; Chaudhry et al., 2023; Klimas & Czakon, 2018; Yami & Nemeh, 2014). This signifies that coopetition activities can assist firms to succeed in ways that would not be possible if they only employed their own assets (even in volatile competitive business environments). Indeed, driven by resource-based theory, we argue that B2B marketing scholars should not necessarily assume that the macro-level environment is harmful for coopetition (consistent with Crick, 2019). Instead, we signify how environmental forces could accelerate the performance outcomes of businesses collaborating with their industry rivals – an advantageous situation for companies that are involved in these B2B marketing networks and alliances. In essence, our investigation suggests that the macro-level environment can be beneficial when organisations cooperate with their industry rivals. Again, this is a notable contribution to the B2B marketing literature – as we have demonstrated that there are merits that are associated with the macro-level environment (in a coopetition capacity).

Fifth, the findings from our article reinforce the wider themes of the resource-based view. We used this perspective to examine how organisations can utilise their own resources and capabilities (together with any assets obtained through coopetition activities) to increase their market-level successes (as per Ritala, 2012; Bengtsson & Kock, 2014; Corbo et al., 2023). Additionally, relatively recent aspects of this theoretical lens have focused on how the macro-level environment can impact the performance outcomes of certain resources, capabilities, and strategies (Helfat et al., 2023; Nason & Wiklund, 2018; Priem & Butler, 2001; Schilke, 2014). By evaluating competitive intensity, market dynamism, and technological turbulence as moderating variables in the association between coopetition strategies and company performance, we could offer stronger evidence on the external forces that can variably influence this association. This reinforces the view that resource-based theory is no longer exclusively an inside-the-firm lens (as per Barney, 1991), but instead, covers external (outside-the-firm) factors (see Day, 2014; Johnson et al., 2011). Also, coopetition serves as a way for companies to form performance-enhancing B2B marketing networks, which develops the stakeholder themes (and the "outside-in marketing" perspective) of this lens – beyond the VRIN framework (building upon Mu, 2015; Barney, 2018; Mu et al., 2018; Freeman et al., 2021; McGahan, 2021; Crick & Crick, 2023). In short, we found that the broader elements of resource-based theory are ideal for investigating coopetition strategies – not just the seminal themes of this lens. This advances earlier extensions to the resource-based view, but in this capacity, about coopetition (following Barney, 2001; Barney et al., 2011; Helfat et al., 2023). Here, we suggest that the broader themes of this theoretical lens are beneficial for exploring coopetition strategies – and should be utilised in future studies within the B2B marketing domain (and beyond). Such themes cover the role of managing the interplay between cooperation and competition (especially, stakeholder networks) in turbulent macro-level environmental conditions (in line with Crick & Crick, 2021c). We cover some implications for practitioners follow in the next section.

6. Practitioner implications

Together with our study's theoretical contributions to the B2B marketing domain, we offer some key implications for practitioners. First, there are some fundamental, and overarching, issues surrounding the merits of coopetition strategies. Specifically, we highlight that:

- Decision-makers should cooperate with their industry rivals (i.e., coopetition strategies), as these B2B marketing activities can allow them to boost their performance. In doing so, they might be able to deliver superior value to their end-users, alongside fulfilling other opportunities (like developing efficient supply chains and increasing their productivity).
- Coopetition can take place informal and/or formal capacities. This can be anything from seeking tools or advice from more experienced competitors (on an ad-hoc basis) through to forming contracts with industry rivals to enter foreign countries. Indeed, these inter-firm networks can take place across various regional areas and between product-markets. Practitioners should bare this in mind, as they have plenty of scope (and means) to collaborate with their competitors. Hence, they should cooperate with their industry rivals in whatever ways they deem to be necessary to boost their company performance.

Second, despite their advantages, there are notable disadvantages surrounding coopetition activities (especially concerning the management of these inter-firm networks). To that end, we note that:

- While engaging in coopetition strategies might increase company performance, firms must remember that their partners are their competitors. In any form of coopetition, there will be some form of competitive hostility at play (even if it is very small). These dynamics may impact the extent to which businesses become "entangled" in coopetition arrangements. Ideally, organisations should aim to equip themselves with an ability to leave their coopetition partnerships – should they become destructive in nature. These "red flags" might manifest via coopetition partners beginning to behave opportunistically at the expense of others within such alliances.
- Forming "high-quality" networks is vital when managing coopetition strategies. In other words, it is critical to have access to competitors' assets. Yet, arguably, it is even more important for businesses to work with "complementary" rivals (i.e., those that are trustworthy and/or concentrate on similar customers), as choosing poorly in this capacity may result in negative performance consequences. It may be helpful for firms to draw on their prior industry experiences (and/or personal connections) to select their coopetition partners. If they make errors in their judgements, there could be a variety of costs – not least of which reduced company performance.

Third, the competitive business environment can impact the performance consequences of coopetition in different respects (as there are several macro-level forces at play). Henceforth, we signify that:

- There are certain macro-level environmental forces that can propel the benefits of coopetition, in terms of helping organisations to maximise their performance. That is, when a certain industry is highly-competitive (linking with competitive intensity) and technology is rapidly-changing (focusing on technological turbulence), coopetition is anticipated to drive company performance, as opposed to in situations where customers' wants and needs are volatile (i.e., market dynamism). Therefore, businesses are encouraged to continually scan their industries for these forces to determine whether they operate in settings that will (or will not) facilitate performance-enhancing coopetition strategies.
- In highly-competitive sectors (again, connecting with competitive intensity), there is additional scope for companies to join forces with "complementary" alliance members – not least of which those that are trustworthy and target comparable customers (versus those that are more likely to behave opportunistically). Further, when technology is advancing quickly (in terms of technological turbulence), there could be more chances for competing firms to collaborate due to the sustained need to keep up-to-speed with "high-tech" customers' wants and needs, supply chain channels, technological advancements, and more. In short, these aspects of the competitive business environment can be helpful (not problematic) for organisations that engage in coopetition activities due to the likely positive impacts on company performance.

If companies can harness these practical points, we anticipate that they will improve their successes when engaging in coopetition

strategies. We outline some limitations and future B2B marketing research directions as follows.

7. Limitations and directions for future B2B marketing research

Despite the theory-enhancing nature of our investigation, we appreciate that there are a few limitations and directions for future research (especially within the B2B marketing field). First, notwithstanding the statistical data passing the key robustness checks, such information was self-reported. As such, we advise that future B2B marketing research should utilise a mixture of self-reported information (like survey-based measures to capture coopetition strategies) and archival data (e.g., to operationalise company performance). Second, and following on, our results were completely quantitative. This was necessary to examine the components of our conceptual framework, but we encourage future B2B marketing research to use a series of follow-up interviews to unpack the statistical evidence – with more in-depth insights. Third, our empirical findings were driven from statistical data from companies in the United States. While there is nothing "wrong" with this country context, it would be interesting to evaluate these issues with the equivalent data from other countries to determine whether they apply (or apply differently) abroad. This might involve relatively similar countries (in terms of political, economic, and cultural factors), such as Germany, the United Kingdom, Australia, and Canada, or nations with larger "psychic distances", like Japan, the United Arab Emirates, Algeria, and Brazil. It is recommended that if cross-national work is conducted, research teams should commence with two (or more) countries that have commonalities (e.g., France and Belgium) before further-afield cross-national studies take place. This should avoid the prospect of B2B marketing researchers "comparing apples with oranges" within their empirical investigations.

Fourth, although it was covered in some detail, our article did not concentrate on the COVID-19 pandemic as a moderating factor. That is, we deemed this issue to be encapsulated within other macro-level environmental forces (mainly through market dynamism). Nevertheless, we suggest that future B2B marketing research could model certain aspects of the COVID-19 pandemic as moderators (e.g., issue that align with extraordinary environmental shocks to the global economy). That said, we acknowledge that B2B marketing scholars might struggle to operationalise something as complex (and multi-dimensional) as the COVID-19 pandemic. Following on, we recommend that future B2B marketing research should evaluate wartime (and/or conflict-fuelled) situations – to continue the role of turbulent (and volatile) settings on the performance consequences of coopetition strategies. By way of example, this could involve the ongoing conflicts between the Russian Federation and Ukraine, Israel and the Palestinian Territories (e.g., the recent fighting concerning Hamas in the Gaza Strip), and so on. Again, however, there are many environmental variables that could be considered, with respect of wartime conflicts. Yet, this is a potential route for future B2B marketing research to explore to extend the themes of our investigation into new directions. To close, these points were not serious concerns, but instead, facilitate various routes to build upon our study in the years to come. Put another way, B2B marketing scholars can use our article as a platform to evaluate other issues pertaining to the performance outcomes of coopetition strategies. Our paper is concluded in the next section.

8. Conclusions

Using the broader facets of resource-based theory (Freeman et al., 2021; Helfat et al., 2023; Nason & Wiklund, 2018; Priem & Butler, 2001), the objective of our article was to evaluate the link between coopetition strategies and company performance under different levels of competitive intensity, market dynamism, and technological turbulence. After reviewing the pertinent literature surrounding coopetition and the resource-based view, we launched an empirical investigation involving a multi-industry sample of 262 organisations within the United States. We assessed such quantitative data were assessed for all major forms of reliability, different types of validity, and common method variance – for which no concerns were discovered (in line with Churchill Jr., 1979; Peter, 1981; Reynolds & Diamantopoulos, 1998; Lindell & Whitney, 2001; Chang et al., 2010; Voorhees et al., 2016; Crick, 2024). This facilitated the following conclusions. Specifically, we conclude that on their own, coopetition strategies can help firms to yield higher-levels of company performance (supporting Bengtsson & Kock, 2000; Felzensztein et al., 2018; Crick & Crick, 2021a; Meena et al., 2023). Second, we also conclude that the competitive business environment has various forms of impact on the performance outcomes of coopetition strategies, as different macro-level environmental forces variably influence such consequences (in our study, there were positive and significant effects from competitive intensity and technological turbulence – and a negative, but non-significant effect from market dynamism) (supplementing Ritala, 2012; Park et al., 2014; Mattsson & Tidstrom, 2015; Crick, 2019; Telg et al., 2023). Third, our final conclusion is that the wider elements of the resource-based view (not just the VRIN framework, but also, issues pertaining to the competitive business environment and stakeholder relationships) form an ideal theoretical lens for investigating coopetition activities (extending Lavie, 2006; Barney et al., 2011; Barney, 2018; Crick & Crick, 2020; Corbo et al., 2023; Mahdi et al., 2024). In closing, our study has uncovered new insights about coopetition strategies that not only advance the B2B marketing literature (and its associations with the broader aspects of resource-based theory), but additionally, help practitioners to appreciate the risks and potential rewards of cooperating with their industry rivals during volatile market settings.

CRediT authorship contribution statement

James M. Crick: Formal analysis, Writing – original draft, Writing – review & editing. **Wesley Friske:** Data curation, Writing – review & editing. **Todd A. Morgan:** Data curation, Funding acquisition.

Data availability

The data that has been used is confidential.

Appendix 1. Operationalisations of the constructs within the study

Coopetition strategies (COOP)

Think of your business relationships with your competitors. To what extent do you agree or disagree with the following statements?

- COOP_1 - We collaborate with our competitors extensively
- COOP_2 - We share assets (equipment, etc.) with our competitors
- COOP_3 - We cooperate with our rivals to achieve a common goal
- COOP_4 - An active collaboration with rival firms is important to us
- COOP_5 - Our rivals are our allies

Anchors: 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = neither agree nor disagree, 5 = somewhat agree, 6 = agree, and 7 = strongly agree. We retained COOP_1, COOP_4, and COOP_5 after the scale purification processes (sourced from Bouncken & Kraus, 2013; Bouncken et al., 2018)

Fashion consciousness (MV)

Think about your fashion consciousness. To what extent do you agree or disagree with the following statements?

- MV_1 - I usually have one or more outfits of the very newest style
- MV_2 - I keep my wardrobe up-to-date with the changing fashions
- MV_3 – Fashionable and attractive styling is very important to me
- MV_4 - To get variety, I shop different stores and choose different brands

Anchors: 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = neither agree nor disagree, 5 = somewhat agree, 6 = agree, and 7 = strongly agree. We retained MV_1, MV_2, and MV_3 after the scale purification processes (sourced from Sproles & Kendall, 1986). For emphasis, we employed the fashion consciousness construct as a robustness check under the marker variable technique (specifically, to test for evidence of common method variance)

Company performance (PERF)

Think about your company's overall financial performance. To what extent do you agree or disagree with the following statements?

- PERF_1 – Our market share exceeds that of our competitors
- PERF_2 – Our sales exceed that of our competitors
- PERF_3 – We normally achieve our profit goals
- PERF_4 – We normally achieve our overall performance goals
- PERF_5 – We normally achieve our sales growth objectives

Anchors: 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = neither agree nor disagree, 5 = somewhat agree, 6 = agree, and 7 = strongly agree. We retained PERF_1, PERF_2, and PERF_3 after the scale purification processes (sourced from Vorhies & Morgan, 2005; Morgan et al., 2009)

Competitive intensity (COMP)

Think about your industry's competitive intensity. To what extent do you agree or disagree with the following statements?

- COMP_1 - Competition in our industry is cut-throat
- COMP_2 - There are many “promotion wars” in our industry
- COMP_3 - Price competition is strong in our industry
- COMP_4 - One hears of a new competitive move almost every day
- COMP_5 - Our competitors are relatively strong
- COMP_6 - Anything that one competitor can offer, others in our industry can match

Anchors: 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = neither agree nor disagree, 5 = somewhat agree, 6 = agree, and 7 = strongly agree. We retained COMP_2, COMP_3, and COMP_5 after the scale purification processes (sourced from Jaworski & Kohli, 1993)

Market dynamism (MARK)

Think about your company's industry. To what extent do you agree or disagree with the following statements?

- MARK_1 - The volume of products that we deliver changes often
- MARK_2 - Market environment changes in our industry are intense
- MARK_3 - Our customers regularly ask for new products and services
- MARK_4 - In our industry, changes take place continuously
- MARK_5 - In the past year, much has changed in our industry

Anchors: 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = neither agree nor disagree, 5 = somewhat agree, 6 = agree, and 7 = strongly agree. We retained MARK_1 and MARK_2 after the scale purification processes (sourced from Slater & Narver, 1994)

Technological turbulence (TECH)

Think about the technological changes in your industry. To what extent do you agree or disagree with the following statements?

- TECH_1 - The technology in our industry is quickly changing
- TECH_2 - The technology in our industry becomes obsolete rapidly
- TECH_3 - The rate of change of technology in our industry is unpredictable
- TECH_4 - Technological change in our industry is frequent

Anchors: 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = neither agree nor disagree, 5 = somewhat agree, 6 = agree, and 7 = strongly agree. We retained TECH_1 and TECH_4 after the scale purification processes (sourced from Cadogan et al., 2003)

Firm size (SIZE)

How many full-time employees work within your company?

- SIZE - ……

Anchors: We measured this construct as a ratio operationalisation – whereby, the respondents would provide their answers (later, we transformed it by a natural logarithm to reduce its variance), in which the respondents were asked to write down the relevant number of full-time employees (sourced from Crick et al., 2022)

Firm age (AGE)

In what year was your company founded?

- AGE - ……

Anchors: We measured this construct as a ratio operationalisation – whereby, the respondents would provide their answers (later, we transformed it by a natural logarithm to reduce its variance), in which the respondents were asked to write down the year that their company was founded. Then, we deductec the score from 2022 – namely, the year that the data collection and data analysis stages were concluded (sourced from Vorhies et al., 2011)

Industry type (INDS)

What industry does your company operate in?

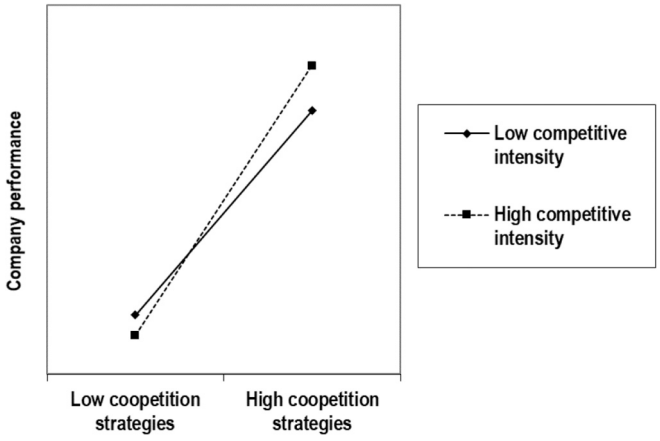
- INDS - Accommodation and Food Services; Administrative and Support and Waste Management and Remediation Services; Agriculture, Forestry, Fishing, and Hunting; Air Transportation; Arts, Entertainment, and Recreation; Computer Related Services; Construction; Consulting and Advertising; Courier Services; Educational Services; Finance and Insurance; Health Care, Hospitals, and Social Assistance; Human Resource Management and Staffing Services; Information Services; Management of Companies and Enterprises; Manufacturing - Automobiles and Trucks; Manufacturing – Chemicals; Manufacturing - Communication Equipment; Manufacturing - Computer Devices; Manufacturing - Electromedical Equipment; Manufacturing - Industrial Machinery; Manufacturing – Other; Manufacturing – Semi-Conductors; Manufacturing - Special Equipment; Mining, Quarrying, and Oil and Gas Extraction; Other Services; Pharmaceuticals; Professional, Scientific, and Technical Services; Public Administration; Publishing; Real Estate and Rental and Leasing; Retail Trade; Software Publishing; Telecommunications; Transportation and Warehousing; Utilities; Wholesale Trade

Anchors: We measured this construct as a ratio operationalisation, in which the respondents were asked to select their industry type from a list of options (using the North American Industry Classification System Code). Subsequently, we transformed the respondents' choices into a dummy variable, in which: 0 = a “low-tech” sector and 1 = a “high-tech” sector (sourced from Zahra, 2003)

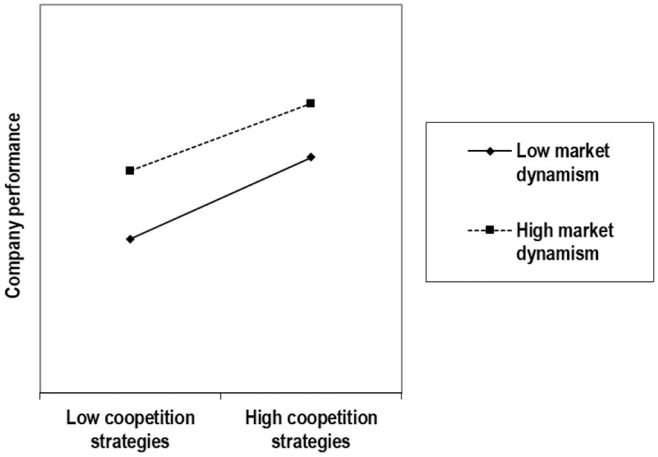
Please note that our survey also contained other measures. We used these operationalisations to capture the categorical variables that were utilised to produce the profiling information about the final sample (e.g., the regional locations). However, since we did not employ such constructs were not employed during the model-testing stage (nor did they go through the operationalisation purification processes), their measures are not presented.

Appendix 2. Graphical displays of the moderating effects and “spotlight analyses”

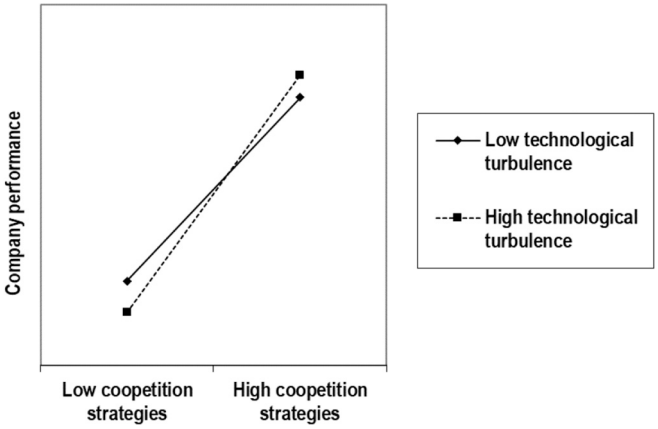
Competitive intensity (low, $r = 0.75$; high, $r = 0.98$).



Market dynamism (low, $r = 0.28$; high, $r = 0.23$).



Technological turbulence (low, $r = 0.69$; high, $r = 0.89$).



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