

From coepetition to courtroom: The role of litigation frequency in coepetition

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ABSTRACT

As coepetition among major business players intensifies, both scholarly and managerial interest in inter-firm coepetition has grown. While prior research has emphasized its potential benefits, an emerging stream of work highlights the risks it entails. Among these, litigation frequency remains an understudied yet consequential outcome. This study examines how firms' involvement in coepetitive alliances shapes their overall external litigation exposure. Specifically, we investigate how competition intensity and the presence of coepetition influence firms' litigation frequency. We further examine how balance within coepetitive relationships moderates this effect. We theorize that balanced coepetition mitigates litigation frequency, whereas intensified competition and the mere presence of coepetition increase it. Using a multi-source, cross-industry dataset of 1981 alliances formed by 322 S&P 500 firms between 2004 and 2021, our analysis indicates that both competition intensity and coepetition elevate litigation frequency, while balanced coepetition reduces it by approximately 29 % compared to non-coepeting firms. In doing so, this study contributes to coepetition and litigation research by empirically demonstrating how structural conditions shape firms' external legal exposure, offering a more nuanced view of the dynamics and governance of inter-firm relationships.

1. Introduction

Inter-firm coepetition, defined as the simultaneous engagement in cooperation and competition between rival firms, has attracted widespread scholarly attention for its potential to generate innovation, resource complementarities, and competitive advantage (e.g., Bengtsson & Raza-Ullah, 2016; Corbo et al., 2023; Kostis et al., 2024). A rich body of research has shown how coepetition can enhance firm performance through knowledge sharing (Ritala et al., 2008), joint value creation (Bengtsson & Kock, 2000), and strategic flexibility (Bengtsson & Kock, 2000; Crick, 2025b; Gnyawali & Park, 2011; Padula & Dagnino, 2007); These studies emphasize coepetition as a paradoxical yet effective strategy for navigating dynamic and uncertain environments (for recent review see e.g., Corbo et al., 2023).

However, alongside these positive outcomes, a growing body of research has begun to examine the “dark sides” or boundary conditions of coepetition stemming from its paradoxical nature (e.g., Bouncken & Kraus, 2013; Chen et al., 2021; Crick, 2025a; Ngowi et al., 2025). While these studies have added important nuance, substantial theoretical and empirical work is still needed to understand what occurs when

coepetitive tensions escalate beyond firms' capacity to manage them effectively (Chai et al., 2020; Chatterjee et al., 2022). In particular, we identify two key gaps in the current literature that limit our understanding of the consequences and dynamics of coepetition.

First, prior research has examined the nature of these risks (Bouncken et al., 2018; Chiambaretto et al., 2016; Chiambaretto et al., 2020; Gernsheimer et al., 2024) and the underlying tensions of coepetition, such as value creation versus appropriation or knowledge sharing versus retention (Bengtsson, Kock, et al., 2016; Bouncken et al., 2018; Fernandez & Chiambaretto, 2016; Jakobsen, 2020; Raza-Ullah, 2020). Yet we know little about what occurs when such tensions are not managed sufficiently and escalate.

First, although trust breakdowns and opportunistic behaviors are recognized antecedents of alliance failure (Das & Teng, 2000), the literature has paid scant attention to litigation frequency, a firm's overall external litigation exposure, that is, the total number of civil lawsuits filed against a focal firm in a given year, irrespective of the plaintiff's identity (Liu, 2021), as a distinct firm-level outcome, despite its strategic, financial, and reputational implications (Hadani, 2021; Karpoff et al., 2008). This oversight is notable, given prominent

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practical examples, such as the rivalry and collaboration between Apple and Samsung that ended up in a lawsuit, illustrating that the downsides of cooptation can be substantial (Brandenburger & Nalebuff, 2021). Our study addresses this gap by examining how cooptation relates to litigation frequency.

Second, while the field increasingly recognizes that cooptation is not monolithic, much empirical research still treats it in binary terms, whether or not firms engage in cooptation, without capturing the intensity, balance, or asymmetry of competitive and cooperative dynamics (Bimmermann et al., 2024; Greven et al., 2022; Krieweth et al., 2024; Runge et al., 2022). This is surprising, given that these structural factors may play a pivotal role in determining whether relational tensions escalate into formal legal disputes (Crick, 2019; Gnyawali & Ryan Charleton, 2018; Pellegrin-Boucher et al., 2013). Yet empirical evidence linking cooptation structure to litigation frequency remains scarce. Addressing this gap is essential to understanding how cooptation can either stabilize or destabilize alliance relations (Park et al., 2014).

The purpose of this paper is to develop and empirically test a theoretical framework that links cooptation structure to firm-level litigation frequency. Grounded in paradox theory (e.g., Gnyawali et al., 2016; Smith & Lewis, 2011), we investigate how the intensity and configuration of competitive and cooperative dynamics within alliances influence the likelihood that inter-firm tensions escalate into legal disputes. Specifically, we examine three research questions: (1) *How does the intensity of competition in alliances influence litigation frequency?* (2) *Does the presence of inter-firm cooptation increase firms' legal vulnerability relative to non-cooptative alliances?* (3) *How does the balance between cooperation and competition influence the escalation of relational tension into litigation frequency?*

We argue that cooptation increases litigation frequency by heightening the potential for contractual disputes, intellectual property conflicts, and breaches of trust. However, litigation frequency is not uniform. Litigation is more likely when competitive intensity dominates or when cooperative and competitive logics are misaligned. Conversely, a structurally balanced cooptation relationship, in which cooperative and competitive objectives are clearly aligned, may reduce ambiguity and mitigate the risk of escalation. We test our hypotheses using a multi-source, cross-industry dataset of 1981 alliances formed by 322 U.S. firms listed in the Standard and Poor's (S&P) 500 index between 2004 and 2021. Our findings show that both competition intensity and the presence of cooptation increase litigation frequency. Furthermore, we demonstrate that maintaining a balanced mix of cooperation and competition in alliances helps reduce litigation frequency, underscoring the importance of structural alignment in cooptation.

Our study makes two core contributions to the literature on cooptation and litigation. First, our study shifts the perspective of current research on cooptation risks by examining litigation frequency as a distinct outcome. Prior work has richly documented how cooptative tensions generate relational strain, trust breakdowns, and opportunistic behavior (Bouncken et al., 2018; Chiambaretto et al., 2016; Das & Teng, 2000; Gernsheimer et al., 2024), but it has largely stopped short of analyzing what happens when these tensions escalate further. We extend this line of inquiry by demonstrating that litigation represents a formalized, highly consequential, and often irreversible rupture in inter-firm collaboration. Specifically, we broaden the scope of outcomes considered in cooptation research, showing that the implications of unmanaged tensions reach beyond alliance failure to legal escalation, with far-reaching strategic, financial, and reputational repercussions for firms (Hadani, 2021; Karpoff et al., 2008). In doing so, we respond to calls suggesting to explore the potential downsides of cooptation as a subtype of alliances (Bengtsson & Raza-Ullah, 2016; Estrada & Dong, 2020; Gernsheimer et al., 2021; Gnyawali & Ryan Charleton, 2018).

Second, our study advances research on the structure and balance of cooptative relationships by showing how variations in the intensity and configuration of cooperation and competition influence litigation frequency. Prior research has often conceptualized cooptation in binary

terms (e.g., Czakon, Klimas, & Mariani, 2020), focusing on whether or not firms engage in it, while paying insufficient attention to the internal structure and relative strength of competitive and cooperative forces (e.g., Bimmermann et al., 2024; Kostis et al., 2024; Krieweth et al., 2024). By emphasizing cooptation intensity and balance, our study responds to recent calls for a more fine-grained understanding of the multifaceted nature of cooptation (Czakon, Klimas, & Mariani, 2020). In particular, we extend this literature by demonstrating the importance of distinguishing explicit from implicit cooperation, considering varying degrees of paradoxical tension, and examining how structural features such as mutual dependence or asymmetry shape alliance outcomes (Czakon, Srivastava, et al., 2020; Hoffmann et al., 2018; Klimas et al., 2023). Our findings reveal that not only the presence of cooptation but also its structural characteristics determine firm-level vulnerability to conflict escalation, thereby refining theoretical perspectives and offering practical guidance for the design and governance of cooptative alliances.

2. Theoretical background and derivation of hypotheses

2.1. Inter-firm cooptation

Strategic alliances are broadly defined as “voluntary arrangements between firms involving exchange, sharing, or co-development of products, technologies, or services” (Gulati, 1998, p. 293). When such alliances involve direct or potential competitors, they are referred to as cooptation—“simultaneous competition and cooperation among firms with value creation intent” (Gnyawali & Ryan Charleton, 2018, p. 2513). Following the distinction between narrow and broad conceptualizations (Afuah, 2004; Bengtsson et al., 2020), we adopt a broad view, recognizing that firms often maintain overlapping cooperative relationships with competitors, suppliers, customers, and other stakeholders (Chen et al., 2021; Crick, 2025b).

Since Brandenburger and Nalebuff's (1996) foundational work, cooptation has evolved into a central theme in strategic management and innovation research. Scholars have examined it through diverse theoretical lenses, including game theory (Gibbons, 1992), network theory (Caniëls & Romijn, 2008), the resource-based view (RBV) (e.g., Barney et al., 2001), transaction cost economics (Williamson (1989), and paradox theory (Dorn et al., 2016; Gernsheimer et al., 2021; Schad et al., 2016). In this study, we build on paradox theory, which emphasizes that organizations can generate long-term value by managing contradictory logics, such as cooperation and competition, simultaneously (Gnyawali et al., 2016; Smith & Lewis, 2011). In line to this, studies underline that when tensions are managed effectively, they can enhance creativity (Rubin et al., 2023), and long-term performance (Schad et al., 2016). Because cooptation inherently involves these opposing forces (e.g., Hoffmann et al., 2018), paradox theory offers a solid framework for understanding the inter-organizational tensions it produces (Pinto, 2019; Schad et al., 2016). Despite these varied theoretical perspectives (e.g., Bengtsson & Kock, 2014; Benitez-Núñez et al., 2025; Bouncken & Fredrich, 2025; Corbo et al., 2023; Meena et al., 2023), there is broad consensus that cooptation, when well-managed, can enhance firm outcomes. In particular, firms strategically adopting cooptation are expected to outperform those pursuing purely cooperative or competitive strategies (Brandenburger & Nalebuff, 1996; Czakon et al., 2014; Gnyawali & Ryan Charleton, 2018; Ricciardi et al., 2022).

2.2. Dark sides of cooptation

While cooptation is often celebrated for its ability to foster innovation, learning, and market responsiveness (Gnyawali & Park, 2011; Ritala & Sainio, 2014), a growing body of research highlights its inherent risks. Drawing on the framework of Lascaux (2025), we synthesize insights across five domains where these risks are most pronounced: firm performance, marketing practices, unethical behavior,

innovation projects, and the evolutionary dynamics of collaboration.

Firm performance is the most extensively studied domain. Early optimism about performance gains has been tempered by findings that suggest diminishing returns at high levels of co-competition intensity. Several studies identify an inverted U-shaped relationship, whereby moderate levels of co-competition enhance profitability, but excessive competition undermines stability and value creation (Crick, 2020; Luo et al., 2007). These negative effects are often exacerbated by governance challenges and structural ambiguity (Bengtsson & Raza-Ullah, 2016), which elevate transaction costs and erode coordination. Competitive aggressiveness may amplify volatility, although competitive intensity can sometimes offset these effects (Crick & Crick, 2021). Moreover, firms that fail to learn from past co-competition experiences are more vulnerable to performance instability, although technological investments may help buffer such risks (Estrada & Dong, 2020). For a comprehensive synthesis of these effects and the mechanisms driving them, see Klimas et al. (2024), who review the performance implications of co-competition across industries and methodological approaches.

Marketing practices are similarly susceptible to co-competitive contradictions. Misalignment between managerial intent and frontline behavior can undermine even well-planned collaborative strategies. For instance, Crick et al. (2022) show how employees in New Zealand's wine industry discouraged customers from engaging with co-competitive partners. Likewise, relational tensions can diminish customer focus, reduce satisfaction, and weaken trust (Bimmermann et al., 2024; Gernsheimer et al., 2021). Without internal alignment, both cultural and communicative, co-competitive initiatives may backfire, damaging brand cohesion and market relationships.

Unethical behavior represents another critical risk. Competitive pressures can erode cooperative norms, prompting behaviors such as opportunistic knowledge appropriation (Chen et al., 2021) or the exploitation of power asymmetries to marginalize weaker partners (Gast et al., 2019). Unresolved tensions may escalate into open conflict (Chowdhury et al., 2016; Tidström, 2014), and in more extreme cases, firms engage in tactics like rumor-spreading or strategic misinformation to damage rivals (Amankwah-Amoah et al., 2018). Chatterjee et al. (2022) highlight how co-competition can facilitate misuse of shared assets and confidential information, illustrating that poorly governed relationships can incentivize behavior that undermines both partnerships and ethical norms.

Innovation projects are particularly exposed to the paradox of openness versus protection. While co-competition can spur joint value creation, it also creates vulnerability to knowledge leakage and unequal value capture (Bouncken & Kraus, 2013). These risks stem not only from poor partner selection but also from the enduring tension between collaboration and self-interest, challenges that cannot be fully resolved through contracts alone (Efrat et al., 2022). As Corbo et al. (2023) summarize, innovation-oriented co-competition entails complex trade-offs between collaboration and self-interest that evolve over the life cycle of a joint project and can easily destabilize relationships.

Finally, the evolutionary dynamics of co-competitive relationships introduce a temporal dimension to risk. Governance structures established early on shape how trust develops, how goals align, and how potential conflicts unfold. Efrat et al. (2022) distinguish between two pathways: deliberate co-competition, which is formalized and contractually bound from the outset, and emergent co-competition, which arises organically through repeated interactions. Deliberate arrangements offer clarity but may trigger early tensions around cultural fit, trust-building, and knowledge exposure. By contrast, emergent relationships lower entry barriers but increase the risk of blurred boundaries and strategic drift as collaboration intensifies. Kostis et al. (2024) provide an integrative account of these temporal dynamics, showing how evolving dependence and trust can amplify or mitigate co-competitive tensions over time.

In sum, the dark side of co-competition spans multiple organizational levels and functions. Across domains, a recurring pattern emerges:

persistent tensions between trust and control, openness and protection, and alignment and divergence. Conflict, therefore, is not an incidental byproduct but an inherent risk of co-competition: one that requires proactive recognition and management to avoid escalation.

2.3. Sources of conflicts in inter-firm relationships

While the preceding section highlighted the persistent tensions and risks embedded in co-competition, this section focuses on how such tensions can escalate into inter-firm conflict. We define conflicts as outcomes of co-competitive tensions that can emerge at interorganizational, intra-organizational, and interpersonal levels (Bengtsson & Kock, 2000; Czakon, 2010; Fernandez et al., 2014; Luo et al., 2007). Conflict arises when partners perceive incompatibilities in perspectives, interests, objectives, or behaviors. These tensions may originate from historical rivalries, divergent strategic objectives (Tidström, 2009), or the paradoxical coexistence of cooperation and competition, which generates emotional ambivalence and strategic dilemmas (Raza-Ullah et al., 2014). For instance, firms often face the challenge of sharing resources to foster innovation while simultaneously protecting proprietary knowledge to maintain competitive advantage (e.g., Fernandez & Chiambaretto, 2016).

To manage these risks, firms rely on both formal mechanisms, such as contracts, intellectual property protections, and monitoring systems, and informal safeguards, including trust and relational norms. Formal agreements are particularly vital in high-risk, dynamic environments like co-competition, especially for firms in weaker competitive positions. High-tech firms, for example, often prefer contracts over equity-based alliances for their flexibility and predictability (Hung & Chang, 2012). Empirical studies consistently show that formal governance helps deter opportunism (Luo et al., 2007; Lydeka & Adomavičius, 2007; Wang & Krakover, 2008), although overly close ties can also increase vulnerability to competitive threats. At the same time, informal mechanisms (Estrada et al., 2016; Rouyre et al., 2024) are prone to breakdown when trust erodes or power imbalances emerge (Gast et al., 2019).

At multiple levels of analysis, governance challenges manifest in distinct ways. At the dyadic level, open communication and trust-building can alleviate fears of knowledge misappropriation (Chin et al., 2008; Ding et al., 2012; Nielsen, 2010). At the managerial level, conflict mitigation benefits from cultural awareness, a long-term orientation, and transparent dialogue (de Rond & Bouchikhi, 2004; Tidström, 2009). Some scholars propose separating competitive and cooperative activities across different organizational units (Bengtsson & Kock, 2000; Brandes et al., 2007; Kylänen & Rusko, 2011), while others advocate hybrid structures with dedicated co-competition teams (Fernandez et al., 2014). At the individual level, the cognitive and emotional strain of managing contradictory logics can blur boundaries, create uncertainty over what to share or protect, and ultimately degrade interpersonal trust (Bengtsson & Kock, 2000; Raza-Ullah, 2020).

When both formal and informal safeguards prove insufficient, co-competitive tensions are more likely to escalate into open conflict. Interfirm disputes are especially likely when asset specificity is high, contracts are incomplete, and the relationship has already deteriorated (Lumineau & Oxley, 2012; Tjemkes & Furrer, 2010). In the context of co-competition, escalation risks are amplified when disputes involve opportunism, contested intellectual property, or disagreement over jointly developed assets (Chen et al., 2021; Tidström, 2014; Virtanen & Kock, 2022). Related alliance research further emphasizes the potential for brand dilution (Votola & Unnava, 2006), reputational damage, and deviation from agreements in pursuit of short-term gains (Das & Rahman, 2010). For example, Lumineau and Oxley (2012) show that firms often combine litigation with private dispute resolution, while Tjemkes and Furrer (2010) identify adaptation, renegotiation, and termination as common responses. Effective dispute resolution can also depend on specific contractual provisions (Weber & Mayer, 2011).

Despite these insights, litigation frequency as a distinct firm-level

outcome remains largely overlooked in coopetition research. While trust breakdowns and opportunistic behavior are recognized precursors to legal disputes, little attention has been given to litigation itself, despite its considerable financial, reputational, and strategic implications (e.g., Das & Teng, 2000; Hadani, 2021; Karpoff et al., 2008). In this study, we conceptualize litigation frequency as a firm-level outcome that reflects a company's overall exposure to external legal disputes. Specifically, we define litigation frequency as the total number of civil lawsuits filed against a focal firm in a given year, irrespective of the plaintiff's identity in line with Liu (2021). Thus, the dependent variable captures firm-level external litigation exposure associated with coopetition, rather than alliance-specific disputes. This firm-level conceptualization allows us to examine how the structural characteristics of a firm's cooperative alliances may increase its overall external litigation exposure.

By integrating coopetition and interfirm conflict research, we develop a framework for explaining how specific coopetition structures may increase the risk of legal escalation. Specifically, we examine how three structural dimensions (1) *competition intensity*, (2) *coopetition occurrence*, and (3) *coopetition balance*, influence the likelihood of litigation frequency (See Fig. 1).

2.4. Competition intensity within coopetition and litigation frequency

Coopetition intensity describes the extent to which collaborative and competitive forces coexist in the relationship between partner firms. This balance can vary substantially, with greater similarity between partners' industries often indicating stronger competitive intensity (Manzhynski & Biedenbach, 2023; Wang & Zajac, 2007). Prior research highlights that heightened competition can increase potential risks (Crick & Crick, 2021; Gernsheimer et al., 2021). As Greven et al. (2022) note, these risks depend on how the competitive and cooperative elements are structured within a relationship, meaning that the intensity of each dimension jointly shapes the overall risk profile (Bengtsson et al., 2020; Raza-Ullah et al., 2014). We propose that competition within alliances may increase litigation frequency for two reasons.

First, we expect competitive intensity to increase litigation because it generates disputes over market-facing resources, such as customers, territories, distribution channels, or co-developed intellectual property, that are both revenue-critical and difficult to divide without harming one partner's position. Such disputes are particularly prone to escalation when they involve jointly developed assets or contested intellectual property (Chen et al., 2021; Tidström, 2014; Virtanen & Kock, 2022), or when partners face the paradox of needing to share resources to innovate while protecting proprietary knowledge (Fernandez & Chiambaretto, 2016; Gnyawali & Ryan Charleton, 2018). Firms typically rely on formal safeguards such as contracts, IP protections, and monitoring systems (Eriksson, 2008; Gast et al., 2015; Rouyre et al., 2024), yet in dynamic and highly competitive environments these safeguards are rarely complete, especially when asset specificity is high (Lumineau & Oxley, 2012). When one partner exploits or is perceived to exploit these gaps, disputes over rights and boundaries may arise. If the contested resource is central to competitive advantage, the stakes are high and parties are more likely to escalate the dispute to litigation, particularly when contractual provisions are insufficient to ensure rapid, binding resolution (Weber & Mayer, 2011).

Second, we expect competitive intensity to increase litigation because it erodes trust and thereby weakens the informal governance

mechanisms needed for cooperative conflict resolution. When partners have overlapping competitive interests, they are more likely to withhold information, engage in protective behaviors, and prioritize individual gains (Das & Teng, 2000; Madhok, 2006; Park & Ungson, 2001). These dynamics are amplified when power imbalances emerge (Gast et al., 2019) or when managers face the cognitive and emotional strain of managing contradictory logics (Raza-Ullah, 2020). Such conditions undermine goodwill and reduce openness in interactions (Hoffmann et al., 2018). While formal agreements can limit opportunism (Bonel & Rocco, 2007; Luo et al., 2007; Lydeka & Adomavičius, 2007; Wang & Krakover, 2008), they are most effective when supported by trust and relational safeguards (Estrada et al., 2016; Rouyre et al., 2024). Once trust deteriorates, even minor disagreements may be interpreted as deliberate breaches, and partners become less willing to resolve disputes informally. Over time, incomplete safeguards and broken trust make escalation to legal action increasingly likely (Lumineau & Oxley, 2012).

In sum, competitive intensity in alliances can heighten litigation by increasing disputes over revenue-critical market resources that are difficult to divide without harm, and eroding trust, which undermines informal governance for resolving conflicts. Together, these dynamics may make legal action more likely. Hence, we hypothesize:

Hypothesis 1 (H1). Competition intensity within coopetition is positively related to litigation frequency.

2.5. Coopetition occurrence in alliances and litigation frequency

Coopetition occurrence refers to the simultaneous engagement of firms in both cooperative and competitive interactions within the same relationship. In such arrangements, partners work together to create value while competing to capture a greater share of that value (e.g., Brandenburger & Nalebuff, 1996). This duality generates distinctive risks, particularly when existing resources are shared and new ones are jointly created (Hoffmann et al., 2018). We propose that coopetition occurrence is positively associated with litigation frequency for two reasons.

First, sharing of existing resources between partners and the joint creation of new ones increase ambiguity over ownership, access rights, and value appropriation which may create risks that are especially prone to escalation when strategically critical assets are involved. Shared resources such as customer data, distribution networks, or production facilities often generate recurring disagreements over allocation and usage (Gnyawali & Ryan Charleton, 2018; Tidström, 2014). Jointly developed resources, such as technologies, brands, or intellectual property, are frequent flashpoints when contractual provisions lack precision on ownership or usage rights (Mayer & Argyres, 2004; Ozmel et al., 2017). This is consistent with broader findings that conflicts are especially likely when asset specificity is high, contracts are incomplete, and the relationship has already deteriorated (Lumineau & Oxley, 2012; Tjemkes & Furrer, 2010). Although formal agreements can initially specify these rights, cooperative relationships are dynamic, and the scope, application, and value of shared assets often evolve over time, outpacing contractual updates (Hung & Chang, 2012). This evolution can leave gaps that may be exploited, or perceived as exploitation by one partner. Disputes are particularly likely to escalate when they involve contested intellectual property or disagreement over jointly developed assets (Chen et al., 2021; Virtanen & Kock, 2022), as these raise the

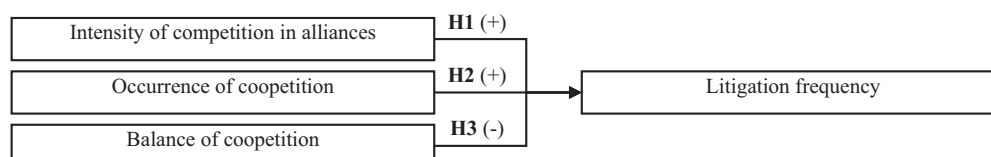


Fig. 1. Illustration of research model.

stakes and make litigation a more likely avenue than informal resolution.

Second, the simultaneous pursuit of cooperative and competitive goals heightens relational tensions between partners, which erode goodwill, increase defensiveness, and reduce the effectiveness of informal dispute resolution which may enhance litigation frequency. Managing joint projects and sharing sensitive information requires openness and coordination (Gast et al., 2019), yet these demands conflict with the need to protect proprietary advantages and limit the other party's competitive gains (Gnyawali & Park, 2011; Raza-Ullah et al., 2014). This paradoxical coexistence of cooperation and competition generates emotional ambivalence and strategic dilemmas (Raza-Ullah et al., 2014), and the cognitive and emotional strain of managing contradictory logics can blur boundaries and degrade interpersonal trust (Bengtsson & Kock, 2000; Raza-Ullah, 2020). Trust and relational norms can buffer these effects (Raza-Ullah, 2021), but persistent exposure to the dual pressures of cooperation and competition can gradually undermine these safeguards, particularly when power imbalances or historical rivalries are present (Gast et al., 2019; Tidström, 2009). Once trust deteriorates, partners are more likely to interpret ambiguous behavior as deliberate breaches and to abandon cooperative conflict resolution in favor of legal action (Harmon et al., 2015).

In sum, cooptation occurrence might be associated with litigation frequency by creating ambiguity over ownership, usage rights, and value appropriation in shared or jointly created resources, and eroding relational goodwill through the ongoing need to balance cooperative and competitive goals. In both cases, the strategic importance of the contested resources, the incompleteness of formal safeguards, and the weakening of informal governance increase the likelihood of legal escalation.

Hypothesis 2 (H2). Cooptation occurrence is positively related to litigation frequency.

2.6. Balance in inter-firm competition and litigation frequency

According to Park et al. (2014), balance of cooptation is based on two dimensions: the intensity of cooperation and the intensity of competition. This balance provides stability by addressing potential challenges and keeping opposing forces in check (Das & Teng, 2000; Lado et al., 1997; Park et al., 2014). Prior studies show that positive outcomes of the cooptation alliances are more likely if the competitive alliance is balanced, while there is an increased risk of negative consequences if the alliance is unbalanced (Gnyawali & Ryan Charleton, 2018; Manzhynski & Biedenbach, 2023; Mariani & Belitski, 2023). We argue that balanced cooptation may reduce litigation frequency for two reasons.

First, we expect balanced cooptation to reduce the likelihood of litigation frequency because it fosters goal alignment between partners, which translates into clearer rules for allocating and protecting shared and jointly created resources, fewer ownership and usage ambiguities, and fewer boundary violations. Balanced cooperation and competition help partners manage paradoxical demands, maintain relational goodwill, and align cognitive and behavioral mechanisms (Manzhynski & Biedenbach, 2023). Such balance also optimizes mutual outcomes (Gnyawali & Ryan Charleton, 2018) and, as Mariani and Belitski (2023) show, supports superior alliance performance compared to imbalanced forms. In high-high or low-low cooptation settings, the potential for opportunism is offset by either strong relational dependency and formal rules or by low dependency and low opportunism risk (Gnyawali & Ryan Charleton, 2018). By ensuring that mutual interests consistently take precedence over self-interest, balanced cooptation reduces ownership and usage disputes and, in turn, lowers the likelihood that partners resort to litigation to protect their individual positions.

Second, we expect balanced cooptation to reduce litigation frequency because it preserves and reinforces informal governance

mechanisms such as trust, reciprocity, and open communication, which act as effective buffers against conflict escalation. When the cooperative and competitive components are balanced, partners may perceive the relationship as fair and mutually beneficial, reducing suspicion of opportunistic behavior. This perception fosters more constructive dispute resolution, as parties are more willing to share information, seek compromise, and engage in problem-solving rather than adopt adversarial positions (Lumineau & Oxley, 2012). In contrast, imbalanced cooptation, whether skewed toward excessive competition or excessive cooperation, can weaken these informal safeguards (Gnyawali & Ryan Charleton, 2018), either by eroding trust through perceived exploitation or by fostering complacency that leaves disputes unresolved until they become intractable. By sustaining high-quality relational norms over time (Cannon et al., 2012), balanced cooptation makes litigation a less necessary or attractive option for resolving disagreements. Thus, we hypothesize:

Hypothesis 3 (H3). Balanced cooptation is negatively related to litigation frequency.

3. Methodology

3.1. Sample & data collection

Drawing from a sample of U.S. firms that were included in the S&P 500 Index at least once between 2004 and 2021 our dataset covers a broad range of 116 industries (based on SIC code level 3) ensuring the generalizability of our findings. Our dataset was built using three primary data sources. First, we collected alliance data from the Securities Data Company (SDC) Platinum database, a resource extensively utilized in prior research on alliances and cooptation (Bimmermann et al., 2024; Krieweth et al., 2024; Shipilov & Gawer, 2020). Recognized as the most comprehensive database on U.S. alliances (Schilling, 2009), it encompasses all major types of collaborative agreements (Hoffmann et al., 2018). Second, we obtained firm- and industry-specific data, along with information on competition (Wang & Zajac, 2007), from the Compustat database. Third, we used the Integrated Database (IDB) of the Federal Judicial Center, which contains records of over 5 million civil lawsuits filed between 2004 and 2021.

Following listwise deletion, the dataset utilized to evaluate our first two hypotheses includes 1981 alliances spanning 322 firms. The dataset used for our third hypothesis is a sub-sample of competitive alliances that comprises 437 alliances by 125 firms. Table 1 outlines the process of sample selection and merging, while Table 2 offers further insights into the characteristics of our sample.

3.2. Measures

3.2.1. Dependent variable

3.2.1.1. Litigation frequency. Based on the approach of Liu (2021) we used the frequency of lawsuits against companies as a proxy for their litigation frequency. The unit of analysis for this dependent variable is the focal firm-year. Specifically, we measure firm-level external litigation exposure by counting the total number of lawsuits filed against a focal firm in a given year, irrespective of the type of plaintiff. Thus, the measure captures a firm's overall exposure to external legal disputes rather than alliance-specific litigation. We applied the following process to manually match the defendant information included in the IDB with our sample of S&P 500 companies. The defendant information in the IDB is provided as a free-text field, which includes the name of the primary defendant. Since this free-text field can include different spellings of the company names, two raters independently coded the defendants and included lawsuits in the sample only when reaching unanimous agreement. First, the IDB list comprising more than 5 million litigation cases was searched for variations of each company name. Common

Table 1
Overview of sample selection and merging process.

Sample selection and merging process	Number of firms	Firm-year observations	Number of deals	Note
Initial sample of litigation cases S&P 500	607	7965		Firms were included in the sample if they have been listed in the S&P 500 index at least once between 2004 and 2021 and had litigation cases.
Merge with Compustat database	33,195	358,381		We used the <i>gvkey</i> and the financial year as unique identifier to match our sample to Compustat North America data (1985–2021).
Remaining Merge with SDC Platinum database	607	7965	568,840	We used the <i>gvkey</i> and the financial year as unique identifier to deal data recorded in the SDC Platinum database between 1990 and 2021.
Drop outs			560, 795	Drop outs of deal observations with missing S&P 500 litigation case data and firm-year observations without corresponding deal data.
Remaining Drop outs	482		8045 5927	Observations for which <i>gvkey</i> , NAICS and/or SIC code information was not available for deal partners.
Remaining Drop outs	341		2118 137	Observations for which one or more variables of interest, e.g., return on assets, could not be computed due to missing values.
Final sample for analysis	322		1981	1981 deals used for H1 and H2; 437 deals for 125 firms (sub-sample of cooperative alliances) for H3

abbreviations and short forms of company names were utilized to generate an initial long list of potential defendants associated with the target company (e.g., “International Business Machines” and “IBM”). The defendants on this long list were then manually reviewed to ensure that each one was accurately associated with the focal company. This process resulted in a final dataset of lawsuits, which are aggregated on firm-year level. To ensure a consistent labelling process, the following rules were applied. Lawsuits involving multiple defendants were attributed to the company listed as the primary defendant. Subsidiaries or segments of target companies were labelled under the parent company (e.g., “IBM Services” or “IBM Pension Services” were categorized as “IBM”). If the two raters could not agree on the labelling, the entry was excluded from the sample. However, the labelling process has limitations due to the unstructured nature of the data. If a company name was significantly misspelled, it would not appear in the search results for potential defendants, preventing the entry from being included in the

Table 2
Sample description.

	%	%
Industry		Firm age (in years since first Compustat entry)
Manufacturing	40	0–10
Services	25	11–20
Transportation & Public Utilities	13	21–30
Trade	10	31–40
Finance, insurance, and real estate	5	
Mining and construction	4	
Other	3	
Firm size (in bn USD sales)		Firm size (in # of employees in 1000)
<5	14	<10
5–10	11	10–50
11–50	45	51–100
51–100	11	101–500
>100	18	>500
Litigation cases (in # of cases)		
1–10	38	
11–50	38	
51–500	20	
>500	4	

$N = 1981$ observations.

long list. The litigation cases were winsorized at the 99th percentile.

3.2.2. Independent variables

3.2.2.1. Intensity of competition in alliances. Following prior research on measuring competition between firms, we calculated the competition intensity among alliance partners by examining the congruence between their respective NAICS codes (Wang & Zajac, 2007). NAICS codes are hierarchically structured, with each digit representing progressively detailed information about a firm’s industry and subindustry. Following the competitor analysis literature, market co-membership is the primary basis for competitor identification, whereas observed attacks or responses are manifestations of rivalry rather than prerequisites for competitor status (Chen et al., 2002). Within our dataset, competition was identified when alliance members share at least four digits of their NAICS codes, which follows established alliance literature (Wang & Zajac, 2007). We defined competition intensity as an ordinal variable based on the number of matching digits in the six-digit NAICS codes of alliance members (Greven et al., 2022; Wang & Zajac, 2007). A minimum of four shared digits indicates competition, with low intensity (value = 0) for four matching digits, medium intensity (value = 1) for five, and high intensity (value = 2) for full six-digit alignment. In alliances with multiple participants, where competition intensity may vary among firms, we analyzed each bilateral member combination within the alliance individually.

3.2.2.2. Coopetition occurrence. Coopetition represents a unique subset of alliances where cooperation and competition occur simultaneously. Within our dataset, competition was identified when alliance members share at least four digits of their NAICS codes (Wang & Zajac, 2007). Cooperation is inherently present across all firms in the dataset, as it was derived from the SDC Platinum database, which includes various forms of alliances such as cooperations, joint ventures, and other partnership types. Following Ricciardi et al. (2022), we conceptualize coopetition occurrence as a distinct construct rather than as a point on a cooperation–competition continuum, which takes the value 1 for a firm if the coopetition is present and 0 if not.

3.2.2.3. Balance of coopetition. Park et al. (2014) conceptualize the balance of coopetition using two dimensions: intensity of cooperation (low or high) and intensity of competition (low or high). We operationalized the cooperation dimension by indicating high cooperation if the alliance is a joint venture and low for all other alliance types

(Gnyawali & Ryan Charleton, 2018; Greven et al., 2022). The intensity of competition is high if alliance members share at least five digits and low if they share four digits of their NAICS codes (Greven et al., 2022; Wang & Zajac, 2007). Combining these two dimensions we were able to compute the balance of a cooperative alliance. If cooperation and competition in inter-firm cooperation are both low (low / low) or both high (high / high), the cooperative alliance is balanced. If one of the dimensions is high while the other is low (low / high or high / low), the alliance is unbalanced (Park et al., 2014). We used a dummy variable which takes the value 1 if the cooperative alliance is balanced and 0 otherwise. To ensure conceptual consistency, we computed the balance measure only among cooperative dyads with competitive overlap greater than zero and excluded contradictory cases. Table 3 presents a cross-tabulation of the four cooperation–competition combinations (low/low, low/high, high/low, high/high), illustrating the distribution of cases in the sample. This restriction ensures that the balance measure for H3 captures only meaningful variations among cooperative dyads.

3.2.3. Control variables

We included selected control variables at the firm, industry and alliance level to isolate the theorized effects on our dependent variable. Previous research on cooperation indicates that firm age and size impact a firm's engagement in cooperation and its ability to derive benefits from such relationships (Bouncken et al., 2020). Accordingly, we accounted for *firm age*, measured as the number of years since the firm's first entry in the Compustat database starting from 1979 during the observation period (Gnyawali & Park, 2009). We also included *firm size*, using the number of employees as a proxy (Bouncken et al., 2020). Since firms take their profitability into consideration when assessing risks, we included *return on assets* (Aaker & Jacobson, 1987).

Recent research shows that the strategic decision on whether and how to cooperate with competitors is influenced by the level of market competition faced by firms (Chen et al., 2019). Thus, we accounted for *competitive intensity* on an industry level. Specific to alliance research, we controlled for the *number of alliance participants* (Greven et al., 2022). Since previous research shows that alliance motives impact alliance outcomes, we included *alliance motives* as controls (Sambasivan et al., 2013). To account for these different motives, we utilized binary variables for each motive type, assigning a value of 1 to indicate its presence and 0 to indicate its absence. This approach controlled for the motives of marketing, (exclusive) licensing, reseller, R&D, exploration, supply, manufacturing, and funding agreements. Finally, we incorporated *year and industry dummies* at the single-digit SIC level across our models to account for fixed effects (Greven et al., 2022).

4. Results

4.1. Analyses and hypotheses testing

We examined potential multicollinearity issues through a multistep analysis approach based on Kalnins (2018). For values exceeding the threshold of $|0.3|$, we performed additional analyses to address potential multicollinearity concerns (Kalnins, 2018). As shown in Table 4, the correlation coefficient between intensity of competition in alliances and cooperation occurrence exceeds the threshold value strongly (0.91). This

Table 3
Distribution of cooperation–competition combinations among cooperative dyads.

Cooperation-competition type	Frequency	Percent (%)	Cumulative percent (%)
High-high	82	18.76	18.76
High-low	13	2.97	21.74
Low-high	326	74.60	96.35
Low-low	16	3.66	100.00
Total	437	100.00	

is not surprising since the two variables are strongly correlated by definition (Bimmermann et al., 2024). Thus, we run two separate regressions with these variables. The correlation coefficients between R&D alliance motive and cooperation occurrence (0.31), between industry competitive intensity and firm size (-0.32) and between firm age and firm size (0.37) exceed the threshold of $|0.3|$. We note that none of the aforementioned correlation coefficients exceed the recommended threshold value of $|0.3|$ by >0.07 .

According to Kalnins (2018), in addition to exceeding the threshold of $|0.3|$, two conditions must be met so that a beta could provide a misleading result as a false positive: a) the beta coefficients of two variables show opposite signs when positively correlated or show the same sign when negatively correlated, and (b) the bivariate correlation of one independent variable with the dependent variable is of the opposite sign from the beta coefficient. Our analysis suggested the possibility of a false positive resulting from the correlation between firm age and firm size (Table 4, $|0.37|$). Although the recommended threshold was only slightly exceeded, we further argue that a positive correlation between firm age and firm size is reasonable and unlikely to be a major problem for our analyses (Krieweth et al., 2024). Additionally, we observe that the variance inflation factors (VIFs) are well below the recommended threshold of $|5|$ for H1 (mean VIF = 1.09, max. VIF = 1.33), H2 (mean VIF = 1.08, max. VIF = 1.24) and H3 (mean VIF = 1.14, max. VIF = 1.32) (Hair et al., 2014). The correlation coefficient between cooperation presence and cooperation balance is omitted as they are perfectly correlated by definition. The correlation coefficient between the reseller alliance motive and the cooperation balance is also omitted, as this motive is not present in the subset of data used for H3. As a result, the variable provides no variation and was automatically excluded from the regression model.

We conducted our analysis using Stata 17. Since litigation frequency is an overly dispersed variable (i.e., the variance exceeds the mean), we used a negative binomial regression to test our hypotheses (Blevins et al., 2015). For each of the three hypotheses, we employed hierarchical regression models, introducing our control variables first and the IVs second. Hypothesis 1 states that intensity of competition in alliances is positively associated with litigation frequency. To test this hypothesis, we considered 1981 alliances formed by 322 firms. Our findings (Table 5, Model 4.2) confirm our theorized relationship ($\beta = 0.14$; $p = 0.03$). Hypothesis 2 states that cooperation occurrence is positively associated with litigation frequency. Similar to hypothesis 1 we considered 1981 alliances formed by 322 firms. Our findings (Table 5, Model 4.3) confirm this hypothesis ($\beta = 0.31$; $p = 0.01$). Hypothesis 3 states that cooperation balance is negatively associated with litigation frequency. To test Hypothesis 3, we utilized a subsample of the observations analyzed for Hypotheses 1 and 2, consisting of 437 alliances formed by 125 firms. This restriction was necessary because the balance of cooperation can only be computed for alliances that simultaneously exhibit both cooperative and competitive interactions. Accordingly, the analysis focuses exclusively on the subset of cooperative dyads for which both dimensions are present. Our results (Table 5, Model 4.5) confirm this hypothesis ($\beta = -0.65$; $p < 0.001$). As discussed before, the reseller alliance motive is omitted, as this motive is not present in the subset of data used for H3 and thus automatically excluded. This does not affect the robustness of the analysis, as the absence reflects the composition of the subset rather than a methodological issue. We note the pseudo R-squared value of 0.07 in all our models. Hemmert et al. (2016) show in a meta-analysis of 274 logistic-type models in top journals such as the *Academy of Management Journal* or *Journal of Management*, that the mean McFadden pseudo R^2 is 0.237 (SD = 0.199). Recent work in the field likewise reports pseudo R^2 values around 0.07–0.08 for several regression models, underlining that such values are not uncommon (Sun et al., 2025). Our model's value is therefore within one standard deviation of this average, and well within the range observed in published management research. Given the behavioral and multifactorial nature of litigation frequency, this level of model fit is consistent with empirical

Table 4
Descriptive statistics and bivariate correlations.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
(1) Litigation frequency	1.00																		
(2) Intensity of competition	0.16***	1.00																	
(3) Coopetition occurrence	0.19***	0.91***	1.00																
(4) Coopetition balance	-0.12**	-0.07		1.00															
(5) Firm age	0.13***	0.02	0.04*	0.00	1.00														
(6) Firm size	0.27***	-0.15***	-0.17***	0.10**	0.37***	1.00													
(7) Return on assets	0.03	0.02	0.03	-0.22***	0.04**	0.04*	1.00												
(8) Competitive intensity	-0.08***	0.17***	0.19***	-0.30***	-0.10***	-0.32***	0.14***	1.00											
(9) Alliance participants	-0.02	0.05**	0.03	0.27***	0.07***	0.04*	0.00	0.03	1.00										
Alliance motives																			
(10) Marketing	0.06**	0.01	0.00	-0.07	-0.06***	-0.01	0.01	-0.03	-0.08***	1.00									
(11) Licensing	0.08***	0.20***	0.23***	-0.24***	0.00	-0.12***	0.06***	0.09***	-0.08***	0.03	1.00								
(12) Exclusive licensing	0.04*	0.03	0.02	-0.04	-0.02	0.00	0.02	0.03	-0.02	0.05**	0.23***	1.00							
(13) Reseller	-0.01	-0.01	-0.01		-0.07***	0.00	-0.02	0.01	-0.01	0.06***	-0.01	0.00	1.00						
(14) R&D	0.21***	0.27***	0.31***	-0.26***	0.02	-0.09***	0.09***	0.14***	-0.06***	0.10***	0.16***	0.08***	-0.01	1.00					
(15) Exploration	-0.03	0.02	0.03	0.08*	-0.03	-0.09***	0.02	0.01	0.03	-0.03	-0.03	-0.01	0.00	-0.03	1.00				
(16) Supply	0.07***	-0.01	0.01	-0.09*	0.13***	0.06***	-0.03	-0.06**	-0.01	0.01	-0.02	-0.01	-0.04**	-0.02	1.00				
(17) Manufacturing	-0.05**	0.08***	0.09***	0.07	0.01	0.00	0.01	0.04	-0.05**	-0.01	0.01	0.08***	-0.01	0.01	0.00	-0.03	1.00		
(18) Funding	-0.02	0.08***	0.06**	0.19***	0.01	-0.05**	-0.07***	0.00	0.04**	-0.03	-0.02	-0.01	0.00	-0.03	-0.01	-0.02	-0.02	1.00	
Statistics																			
Mean	69.28	0.34	0.22	0.22	3.18	3.83	0.14	0.93	2.36	0.11	0.07	0.00	0.00	0.11	0.01	0.07	0.07	0.01	
Standard deviation	171.67	0.70	0.41	0.42	0.44	1.40	0.08	0.07	0.93	0.31	0.26	0.06	0.02	0.31	0.09	0.26	0.25	0.08	
N	1981	1981	1981	437	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	

Litigation frequency is winsorized at 1 % level.

*** p < 0.01.

** p < 0.05.

* p < 0.1.

Table 5
Results of regression analysis.

Dependent variable: litigation frequency	Model 4.1	p-value	Model 4.2	p-value	Model 4.3	p-value
	Coefficient (Std. Err.)		Coefficient (Std. Err.)		Coefficient (Std. Err.)	
Controls						
Firm age	−0.11 (0.14)	0.43	−0.11 (0.14)	0.43	−0.12 (0.14)	0.41
Firm size	0.73 (0.04)	0.00	0.72 (0.04)	0.00	0.72 (0.04)	0.00
Return on assets	0.67 (0.58)	0.25	0.79 (0.59)	0.18	0.84 (0.59)	0.15
Competitive intensity	−1.13 (0.52)	0.03	−1.15 (0.52)	0.03	−1.17 (0.53)	0.03
Alliance participants	−0.10 (0.03)	0.00	−0.11 (0.03)	0.00	−0.11 (0.03)	0.00
Alliance motives						
Marketing	0.31 (0.15)	0.05	0.32 (0.16)	0.04	0.31 (0.16)	0.05
Licensing	0.12 (0.17)	0.46	0.11 (0.16)	0.51	0.09 (0.16)	0.59
Exclusive Licensing	0.17 (0.43)	0.69	0.13 (0.41)	0.75	0.18 (0.41)	0.66
Reseller	−1.29 (0.32)	0.00	−1.27 (0.32)	0.00	−1.23 (0.32)	0.00
R&D	0.34 (0.14)	0.02	0.31 (0.14)	0.03	0.30 (0.14)	0.03
Exploration	−0.66 (0.25)	0.01	−0.67 (0.25)	0.01	−0.67 (0.26)	0.01
Supply	0.33 (0.15)	0.03	0.31 (0.15)	0.03	0.31 (0.15)	0.04
Manufacturing	−0.52 (0.16)	0.00	−0.59 (0.14)	0.00	−0.61 (0.14)	0.00
Funding	0.09 (0.37)	0.80	−0.06 (0.36)	0.86	−0.05 (0.36)	0.89
Independent variables						
H1: Intesity of competition			0.14 (0.06)	0.03		
H2: Coopetition occurrence					0.31 (0.12)	0.01
Constant	1.61 (0.51)	0.02	1.63 (0.69)	0.02	1.60 (0.69)	
Year dummies included	Yes		Yes		Yes	
Indstry dummies included	Yes		Yes		Yes	
Observations	1981		1981		1981	
Pseudo R-square	0.07		0.07		0.07	
<hr/>						
Dependent variable: litigation frequency	Model 4.4	p-value	Model 4.5	p-value		
	Coefficient (Std. Err.)		Coefficient (Std. Err.)			
Controls						
Firm age	−0.23 (0.20)	0.26	−0.17 (0.18)	0.34		
Firm size	1.28 (0.07)	0.00	1.30 (0.06)	0.00		
Return on assets	−0.78 (0.78)	0.32	−0.86 (0.76)	0.26		
Competitive intensity	−4.47 (3.67)	0.22	−5.37 (3.53)	0.13		
Alliance participants	−0.05 (0.06)	0.41	0.00 (0.06)	0.98		
Alliance motives						
Marketing	0.36 (0.22)	0.10	0.41 (0.23)	0.07		
Licensing	0.04 (0.18)	0.85	0.00 (0.18)	0.99		
Exclusive Licensing	0.77 (0.50)	0.12	0.79 (0.51)	0.12		
Reseller	ommitted		ommitted			
R&D	0.22 (0.16)	0.17	0.16 (0.16)	0.32		

(continued on next page)

Table 5 (continued)

Dependent variable: litigation frequency	Model 4.4	<i>p</i> -value	Model 4.5	<i>p</i> -value
	Coefficient (Std. Err.)		Coefficient (Std. Err.)	
Exploration	−0.49 (0.36)	0.18	−0.53 (0.40)	0.18
Supply	0.39 (0.34)	0.24	0.36 (0.34)	0.29
Manufacturing	−0.28 (0.21)	0.18	−0.25 (0.20)	0.21
Funding	1.44 (0.55)	0.01	1.70 (0.55)	0.00
Independent variables				
H3: Coopetition balance			−0.65 (0.20)	0.00
Constant	4.23 (3.39)	0.21	5.12 (0.69)	0.12
Year dummies included	Yes		Yes	
Industry dummies included	Yes		Yes	
Observations	437		437	
Pseudo R-square	0.07		0.07	

Note: Litigation risk is winsorized at 1 % level.

Note: Litigation frequency is winsorized at 1 % level.

precedent.

To assess the practical significance of our findings, we computed the marginal effect of a one-unit increase in the intensity of competition on the expected count of litigation cases. Given the log-linear form of the negative binomial model, a one-unit increase in competition intensity increases the expected litigation frequency by a factor of: $\exp(0.1371) = 1.15$ (Ver Hoef & Boveng, 2007). This corresponds to an approximate 15 % increase in the expected number of litigation records for each unit increase in alliance competition intensity, holding all other variables constant. For example, if a firm involved in a low-intensity-competition alliance is expected to face 100 litigation cases, the same firm involved in a medium-intensity-competition alliance would be expected to face approximately 115 cases, and about 132 cases in a high-intensity-competition alliance. For H2, the results suggest that the presence of coopetition increases litigation exposure considerably. Specifically, firms involved in coopetitive alliances are expected to face approximately 37 % more litigation cases compared to non-coopetitive firms, all else equal. These results provide a clear indication of the practical relevance of coopetition presence and competition intensity in shaping firms' litigation frequency.

For H3, the findings show that balanced coopetition structures are associated with a substantial reduction in litigation exposure. Firms engaging in balanced coopetition are expected to experience around 48 % fewer litigation cases than those in unbalanced coopetition alliances. To assess the full effect relative to firms with no coopetition, we combine both effects from Model 4.3 and Model 4.5. We find that firms in balanced coopetition settings are expected to face approximately 29 % fewer litigation cases than firms with no coopetition at all ($\exp(0.31 - 0.65) = 0.71$). This finding suggests that balanced coopetition not only mitigates the litigation frequency introduced by coopetition but may even contribute to fewer litigation cases compared to avoiding coopetition altogether.

4.2. Addressing potential endogeneity

To address concerns of endogeneity, particularly omitted variable bias, we conducted various analyses. First, we applied the replacements of inferences to replacements (RIR) method. This approach builds on the impact threshold of a confounding variable (ITCV) framework, which is used to assess the extent to which unmeasured confounders might bias relationships in non-linear models. The methodology determines the percentage of observations that would need to be influenced by bias for the causal inference of the model to be deemed compromised (Frank

et al., 2013; Frank et al., 2021; Xu & Frank, 2021). For our hypothesis 1, 23.27 % (461 observations) of the estimate would have to be influenced by a confounding variable to question the validity of our results. For our hypothesis 2 and hypothesis 3, this threshold is set at 39.62 % (785 observations) and 47.01 % (205 observations) respectively.

Second, we followed a control function approach as outlined in Papies et al. (2017). Compared to an instrumental variable approach, this approach is better suited to account for endogeneity for a non-linear dependent variable as we use it in our models (Papies et al., 2017). In line with Germann et al. (2015) we used the industry averages of our independent variables as instrumental variables. For our three models, we used the average on SIC 2 industry code level to predict the fitted residuals and then included them as an additional regressor in our main equations (Papies et al., 2017). The results indicate significant results with consistent beta coefficients of the independent variables for all three models ($p < 0.001$), while all three tests support the robustness of the model (Prob chi2 = 0.00).

Lastly, we included control variables that correlate with both our IV as well as our DV to exclude omitted variable bias through these controls (e.g., firm size and industry competitive intensity, see Table 4) (Hill et al., 2021). Based on different successful tests and our model specifications, we conclude that our analyses are unlikely to be influenced by endogeneity.

4.3. Robustness tests

We conducted a series of robustness tests to verify the stability of our findings and to rule out potential structural or estimation biases. First, we introduced alternative control variables. Firm size was measured by revenue instead of the number of employees, and Tobin's Q replaced return on assets to capture market-based valuation (Krieweth et al., 2024). At the industry level, we substituted competition intensity with environmental dynamism. The results remained robust across all three hypotheses.

Second, to account for the absence of zero-litigation firm-years, we re-estimated all models using a zero-truncated negative binomial specification. This estimator is appropriate when the dependent variable excludes zero counts, ensuring that results are not biased by truncation in the litigation data. The findings were consistent with the main estimations: coopetition occurrence remained positive and significant ($\beta = 0.45$, $p < 0.001$), competition intensity also remained positive and significant ($\beta = 0.21$, $p < 0.01$), while coopetition balance remained negative but statistically insignificant ($\beta = -0.71$, $p = 0.17$). These

results indicate that our conclusions are not driven by the exclusion of zero-litigation firm-years and are robust to model specifications that account for truncation.

Third, to assess model specification robustness, we employed a Poisson regression. The results for Hypotheses 1 ($\beta = 0.25, p < 0.001$) and 2 ($\beta = 0.18, p = 0.05$) remained consistent in direction and significance, while the effect for Hypothesis 3 ($\beta = -0.70, p = 0.11$) remained negative but was less significant. This outcome reflects the Poisson model's inability to adequately handle overdispersion, reinforcing the appropriateness of the negative binomial model as our primary specification (Cameron & Trivedi, 2013).

Fourth, we replaced the competition intensity measure with product market overlap, a continuous variable (0–1) from the Hoberg–Phillips Data Library indicating the extent of product market similarity between alliance partners (Hoberg & Phillips, 2010). This alternative measure, well established in cooperation research (e.g., Runge et al., 2022), yielded consistent support for Hypothesis 1 ($\beta = 1.95, p < 0.001$).

Fifth, we constructed a more granular measure of cooperation balance based on product market overlap. As in our main analysis, we coded cooperation as high for joint ventures and low otherwise (Gnyawali & Ryan Charleton, 2018; Greven et al., 2022). The competition dimension was represented by the degree of product market overlap. Alliances with both high cooperation and high product market overlap received the highest balance scores, whereas alliances with either high cooperation and no competition or low cooperation and high competition were classified as unbalanced. The resulting continuous measure (bounded between 0 and 1) again supported Hypothesis 3 ($\beta = -0.35, p = 0.01$). We also utilized an alternative instrumental variable for hypothesis 2 by identifying cooperation occurrences based on the presence of three identical digits in the respective firms SIC codes. Our results remain robust ($\beta = 0.18; p = 0.05$).

Sixth, to rule out potential multicollinearity between firm age and firm size, we excluded firm age from the regressions. The results remained directionally and statistically consistent (H1: $\beta = 0.14, p = 0.03$; H2: $\beta = 0.31, p = 0.01$; H3: $\beta = -0.66, p < 0.001$), indicating that our findings are not affected by collinearity concerns (Kalnins, 2018).

Seventh, to address possible overweighting of firm-years with multiple alliances, we re-estimated the model using inverse-probability weights equal to the inverse of the number of alliances per firm-year. This ensured that each firm-year contributed equally to the estimation. Results remained robust: cooperation occurrence ($\beta = 0.38, p < 0.01$) and competition intensity ($\beta = 0.20, p = 0.01$) remained positive and significant, while cooperation balance continued to be negative and significant ($\beta = -0.76, p < 0.01$).

Eighth, although winsorizing count variables is uncommon, we applied 1 % winsorization to reduce the influence of extreme litigation outliers that distorted dispersion estimates. To verify robustness, we re-estimated all models without winsorization. The results remained substantively consistent (competition intensity: $\beta = 0.10, p = 0.18$; cooperation occurrence: $\beta = 0.28, p = 0.04$; cooperation balance: $\beta = -0.70, p < 0.001$). We therefore retain the winsorized specification for stability while confirming that our conclusions are not driven by this adjustment.

Finally, to confirm industry classification consistency, we recalculated both cooperation occurrence and competition intensity using SIC codes instead of NAICS. Cooperation occurrence was defined as a three-digit SIC match, and competition intensity was coded on a scale from 0 to 2 reflecting two-, three-, and four-digit similarity. The results remained stable (cooperation occurrence: $\beta = 0.18, p < 0.05$; competition intensity: $\beta = 0.22, p < 0.001$), confirming that findings are not sensitive to the choice of classification system.

4.4. Supplemental analyses

We conducted two additional analyses to further explore the effect of cooperation on litigation frequency. First, we analyzed the effect of cooperation in inter-firm cooperation on litigation exposure. Inter-firm

cooperation varies in terms of cooperation intensity, with joint ventures representing a higher degree of collaboration (Gnyawali & Ryan Charleton, 2018). To account for this, we assessed whether firms engaged in cooperation were also involved in a joint venture. Accordingly, the intensity of cooperation in cooperation is represented by a binary variable, taking the value of 1 if the participating firm is involved in a joint venture, and 0 otherwise (Krieweth et al., 2024). Our results show that intensity of cooperation in inter-firm cooperation is negatively associated with litigation frequency ($\beta = -0.60; p < 0.001$).

Second, we analyzed the impact of cooperation on the frequency of different types of litigation cases. When filing a lawsuit, attorneys assign a nature of suit (NOS) code to classify the case. Following the approach of Boyd and Hoffman (2017), we group these codes into different categories. However, as the authors note, the NOS code offers limited reliability in capturing the full legal content of a complaint, given that only one code can be assigned per case, while lawsuits may involve multiple interrelated legal issues. To address this limitation, we aggregate the categories into two broad groups: lawsuits involving internal stakeholders (i.e., employees) and those involving external stakeholders. The results remain consistent in terms of direction and significance across all hypotheses for external stakeholder lawsuits (H1: $\beta = 0.17, p = 0.04$; H2: $\beta = 0.42, p = 0.01$; H3: $\beta = -0.94, p < 0.001$). In contrast, we find no significant effects for employee-related litigation. To further explore the dynamics of external stakeholder litigation, we disaggregate these cases into three subcategories: contract-related, intellectual property, and regulatory lawsuits. Our findings reveal that in the presence of cooperation, the frequency contract-related litigation cases increases ($\beta = 0.53; p < 0.001$). However, contrary to our initial expectations, the frequency of intellectual property ($\beta = -0.22; p = 0.01$) and regulatory ($\beta = -1.04; p < 0.001$) lawsuits decreases.

5. Discussion

This study provides insights into the relationship between inter-firm cooperation and firms' litigation frequency. Drawing on a multi-source, cross-industry dataset of alliances formed by S&P 500 companies between 2004 and 2021, we show that both the intensity of competition within alliances and the occurrence of cooperation are positively associated with litigation frequency. At the same time, we highlight the importance of adopting a more differentiated perspective on the coexistence of cooperation and competition by demonstrating that balanced cooperation is linked to a reduction in litigation cases. In sum, our study advances scholarly understanding of the risks inherent in cooperation and offers practical guidance for managers seeking to design more stable and legally resilient inter-firm collaborations.

5.1. Implications for research and theory

This study makes three significant contributions to the field of inter-firm cooperation and litigation research. First, we extend the cooperation literature by introducing litigation frequency as an unintended outcome of unresolved cooperative conflicts. By conceptualizing litigation as a formal and irreversible rupture in interfirm collaboration, we extend the literature to account for a qualitatively distinct form of breakdown with strategic, financial, and reputational repercussions (Hadani, 2021; Karpoff et al., 2008). In doing so, we respond to calls for examining the downsides of cooperation as a subtype of interfirm alliance (Bengtsson, Kock, et al., 2016; Estrada & Dong, 2020; Gernsheimer et al., 2021; Gnyawali & Ryan Charleton, 2018) and broaden the set of outcomes beyond relational fallout alone. By performing a disaggregation of litigation into three subcategories: (1) contract-related, (2) intellectual property, and (3) regulatory lawsuits, our study enables a more precise understanding of how cooperation dynamics translate into different forms of legal confrontation. Our findings reveal that, in the presence of cooperation, the frequency of contract-related litigation increases. This pattern likely emerges because contractual ambiguities and enforcement

problems become more acute when firms simultaneously collaborate and compete, creating disagreements over performance expectations, rights, and obligations (Das & Teng, 2000; Park & Ungson, 2001). Surprisingly, however, intellectual property and regulatory lawsuits decrease. A plausible explanation is that firms in cooperative arrangements anticipate the heightened risk of opportunism in these sensitive domains and proactively design safeguards, such as clearer IP ownership clauses, strengthened compliance mechanisms, and elaborate knowledge-sharing protocols, to avoid highly visible and strategically damaging disputes (e.g., Gulati & Singh, 1998; Oxley, 1997; Zeng & Chen, 2003). Thus, while cooperation may intensify conflict in contract enforcement, it simultaneously disciplines partners to minimize disputes over intellectual property and regulatory compliance. Taken together, our study enriches the understanding of the “dark side” of cooperation (Bouncken & Kraus, 2013; Gernsheimer et al., 2021; Raza-Ullah et al., 2014) by theorizing litigation not as a monolithic outcome but as a variegated spectrum of legal risks that unfold differently across domains. This reframing advances research on interfirm conflict by showing that cooperative tensions do not uniformly escalate into legal arenas; rather, the likelihood and type of litigation depend on the very mechanisms firms adopt to govern their dual relationship.

Second, our findings also contribute to the emerging literature on cooperation balance (Gnyawali & Ryan Charleton, 2018; Park et al., 2014), which suggests that firms must carefully manage the interplay between cooperation and competition to achieve optimal outcomes. While prior research has emphasized the role of balance in fostering innovation and reducing tensions (Park et al., 2014), we extend this perspective by showing that balance in cooperation relationships also plays a crucial role in mitigating litigation frequency. Theoretically, this implies that achieving a well-calibrated equilibrium between cooperative and competitive forces is not only beneficial for performance, but also for risk management. Firms that match their degrees of cooperation and competition are less likely to engage in litigation, as the relationship remains either highly interdependent or strategically distant, reducing the risk of conflict escalation. Showing that cooperation balance can indeed serve as a risk-mitigating mechanism and counteract the association between cooperation occurrence and litigation frequency contributes to the cooperation framework with focus on RBV by providing an empirical evidence that balanced cooperation relationships promote superior firm outcomes (Gnyawali & Ryan Charleton, 2018). It also aligns with paradox theory, which suggests that managing paradoxical tensions effectively can lead to superior outcomes (Slawinski et al., 2024).

Third, our study contributes to the advance of cooperation research by providing a multidimensional empirical approach that moves beyond the traditional binary measurement of cooperation (Czakon, Srivastava, et al., 2020). Prior literature has long acknowledged the simultaneous presence of competition and cooperation within interfirm alliances and the resulting paradoxical tensions (Bengtsson & Kock, 2000; Bouncken et al., 2020; Pellegrin-Boucher et al., 2013), but the operationalization of these attributes has often been simplistic, treating cooperation primarily as a categorical occurrence rather than a configurable strategic phenomenon (Gernsheimer et al., 2021; Gnyawali & Ryan Charleton, 2018; Klimas et al., 2023). Our study answers recent calls for more precise operationalizations and nuanced measurement of cooperation strategies by separately examining competition intensity, cooperation occurrence, and cooperation balance within alliances (Klimas et al., 2023). This multidimensional approach demonstrates empirically that unbalanced cooperation structures substantially elevate litigation frequency, whereas balanced configurations are associated with a significant reduction in litigation frequency. These findings complement the perspective that the balancing capability—manifested in separation, integration, and co-management principles—plays a critical role in mitigating tensions and institutional pressures that arise within regulated industries (Alshareef et al., 2024; Bengtsson & Kock, 2000; Pellegrin-Boucher et al., 2013). Moreover, our results are congruent with

recent literature emphasizing that not only relational attributes (trust, commitment, governance mechanisms) but also contextual and institutional factors—such as legal environment and industry norms—shape the manifestation and consequences of cooperative relationships (Alshareef et al., 2024; Ritala & Hallikas, 2011; Tidström, 2014). By empirically distinguishing the consequences of different cooperation configurations, our study enriches theory development on the operationalization of cooperation and demonstrates the importance of balance as a strategic device for managing organizational paradoxes and mitigating legal risks (Fernandez et al., 2014; Gnyawali & Ryan Charleton, 2018). This refined view encourages future research to further investigate the attributes, phases, and management principles of cooperation relationships (Dorn et al., 2016; Klimas et al., 2023), and recognizes that both occurrence and configuration jointly determine the risks and outcomes faced by firms.

5.2. Managerial implications

Beyond its implications for research and theory, our study offers valuable practical insights for firms navigating the complexities of cooperation. First, our findings raise awareness among managers that engaging in cooperation is not inherently risk-free. They should assess risks for each specific alliance they are considering while using our insights as a data point in their discussions with potential alliance partners. Being aware of increased litigation frequency, firms can take additional measures to minimize this risk. They could anticipate cooperative tensions by drafting detailed alliance agreements that explicitly outline the scope of collaboration, the boundaries of competition, and safeguards against opportunistic behavior. In doing so they should also adopt preemptive conflict-resolution mechanisms such as mediation clauses, arbitration agreements, and structured escalation procedures to prevent disputes from escalating into full-scale litigation.

Second, following earlier research highlighting the need for deeper insights into how management can influence cooperation outcomes to decrease risks and increase benefits (Gernsheimer et al., 2021) our findings suggest that managers should consider cooperation balance when selecting alliance partners. They can achieve this balance by structuring alliances to ensure the right level of cooperation depending on the competitive intensity between their firm and the alliance partners. This ensures that all alliance partners derive equitable benefits from the partnership, reducing incentives for opportunism or legal disputes. Furthermore, firms should constantly maintain strategic alignment and communication by regularly revisiting alliance goals, renegotiating terms if necessary, and ensuring that all parties remain aligned in their competitive and cooperative priorities. Finally, firms should closely monitor cooperative behavior within alliances to avoid scenarios where one partner leverages the alliance for market dominance at the expense of the other, which could trigger disputes. If firms maintain a well-balanced cooperation strategy, they can not only enhance innovation and market opportunities but also mitigate the risk of costly litigation cases.

Third, managers should adopt robust governance structures to safeguard their firms against unintended legal consequences of cooperation. They could do so by developing an internal cooperation risk management framework with clear protocols for information sharing, decision-making authority, and exit strategies to prevent disputes before they escalate.

5.3. Limitations and avenues for further research

We recognize several limitations in our study that present promising opportunities for future research. First, we determined the frequency of litigation by counting the total number of civil lawsuits in which a company was the primary defendant. Future research could go one level deeper and analyse the different types of lawsuits that may be affected by cooperation. Different stakeholders such as employees, alliance

partners, or competitors outside the alliance are affected by cooptation (Granot & Sošić, 2005). They may have different motivations to resort to lawsuits. Untangling this level of litigation frequency could provide important insights on how to address the individual reasons for different stakeholders to sue. This analysis could be further deepened by examining how the different nuances of cooptation affect different types of litigation.

Second, while we propose to adjust the structure and dynamics of alliances in order to mitigate litigation frequency associated with cooptation, future research could concentrate on more possible mitigation measures. Prior research found that firm-level forces moderate the risks and benefits of cooptation (Crick & Crick, 2021). Furthermore, research also found that risks of cooptation are decreased by the effective management of tensions (Jakobsen, 2020). Thereby, the effective management of tensions depends on the cooptation capability, which is a capability needed at the individual manager and firm level (Bengtsson, Raza-Ullah, & Vanyushyn, 2016; Wilhelm & Sydow, 2018). Exploring this cooptation capability and how it helps mitigate cooptation risks such as litigation provides an interesting avenue for further research.

Third, our study focuses exclusively on S&P 500 firms, thus capturing cooptation primarily among large, U.S.-based organizations. This scope limits our ability to examine how cooptation unfolds in other regions and among smaller enterprises. Future research could explore cross-national cooptation and consider smaller firms in order to provide a more comprehensive perspective. Such an integrative approach may yield richer insights into cooptation that have not yet been uncovered.

Fourth, our cross-sectional alliance-level design does not allow us to trace how litigation frequency evolve over time or across different stages of the cooptation lifecycle. While our dataset structure precludes the use of panel methods, future research based on longitudinal alliance data could leverage such techniques to examine dynamic effects. Similarly, although we mitigate observable selection concerns by including a broad set of firm-, industry-, and alliance-level controls, unobserved self-selection into alliances cannot be fully ruled out. Techniques such as propensity score matching may help future work address these concerns more explicitly, provided that suitable comparison groups are available.

Fifth, our measure of competition intensity captures potential rather than realized competition and should therefore be interpreted as a proxy rather than direct evidence of competitive actions. Future studies could complement this approach by examining actual competitive behaviors, such as product launches, market entries, or patent races, to provide a more fine-grained understanding of competitive dynamics in cooptative settings (Crick et al., 2024; Ngowi et al., 2025).

Lastly, future research could further investigate the conditions under which cooptation turns from a strategic advantage into a liability, particularly in industries where legal disputes are more frequent. By mapping litigation intensity across industries, scholars could identify high-risk versus low-risk cooptation environments and provide more granular guidance for firms navigating inter-firm cooptation.

6. Conclusion

The purpose of this study was to examine how the structure of cooptation influences firms' exposure to external legal disputes. Using a multi-source dataset of 1981 alliances among 322 S&P 500 firms (2004–2021), we show that competition intensity and the presence of cooptation increase litigation frequency, while structural balance between cooperation and competition mitigates it. These findings highlight litigation as a distinct consequence of inter-firm collaboration and demonstrate that the escalation of tensions into legal disputes depends on the configuration of cooptative relationships. In doing so, our study extends research on the dark sides of cooptation and offers actionable insights for managers on how to design balanced alliances that minimize legal risks.

CRedit authorship contribution statement

Carolyn Krieweth: Writing – review & editing, Conceptualization. **Jona Hesse:** Writing – original draft, Conceptualization. **Malte Brettel:** Supervision.

Declaration of generative AI and AI-assisted technologies in the writing process

We confirm that we have employed artificial intelligence tools solely for assistance with language refinement, such as proofreading and improving structure.

The AI was used exclusively to support linguistic improvements, ensuring that the research, analysis, and conclusions remain entirely our own work. At no point was the AI involved in generating or shaping the core content or ideas of the paper. All ethical and academic standards have been strictly adhered to throughout the process.

Data availability

Data will be made available on request.

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