

Received 30 May 2023
Revised 30 June 2023
16 August 2023
22 September 2023
25 October 2023
Accepted 5 November 2023

Coopetition for corporate responsibility and sustainability: does it influence firm performance?

Ricarda Bouncken

Department of Strategic Management and Organization, University of Bayreuth, Bayreuth, Germany

Amit Kumar

College of Business, Abu Dhabi University, Abu Dhabi, United Arab Emirates

Julia Connell

Faculty of Business and Law, Newcastle Business School, The University of Newcastle, Callaghan, Australia

Asit Bhattacharyya

School of Business and Law, CQUniversity Sydney, Sydney, Australia, and

Kai He

Department of Strategic Management and Organization, University of Bayreuth, Bayreuth, Germany

Abstract

Purpose – Corporate responsibility and sustainability (CRS) have emerged as an important topic today. At the same time, alliances and coopetition arrangements, as vehicles for inter-firm collaboration have been shown to support firm performance. Still, there has been a lack of research into how coopetition (collaboration with competing firms) in this area may support firm performance.

Design/methodology/approach – This study aims to untangle the relationship between coopetition arrangements including CRS and firm performance. The model permits garnering social performance, which is a key to CRS, and to move beyond the traditional view of the coopetition–firm–economic–performance relationship. This study is based on a survey and primary data from 215 firms in Australia. This study uses multiple indicators for the concepts. Relationships are estimated by multiple regression analyses.

Findings – Using survey data from 215 firms in Australia, the research findings confirm that coopetition in CRS can lead to improved firm performance, both in relation to financial and social performances. However, the association between coopetition in CRS and financial performance loses its significance when social performances is introduced as an additional control variable. Further, stakeholder attributes (i.e., effective power and legitimate stake) moderate the relationship between coopetition in CRS and firm financial performance. However, there was no evidence of moderation for the coopetition in CRS – firm social performance relationship.

Research limitations/implications – This study contributes to both coopetition and corporate social responsibility research. This study demonstrates that improved firm performance may be achieved through the promotion of CRS initiatives when a cooperative approach is adopted, particularly where an understanding of stakeholder attributes is also evident. Firms do not need to shoulder corporate social responsibility alone. They need to find well-fitting partners. There are new ways to improve sustainability in terms of nature and human relationships.

Practical implications – Firms do not need to shoulder Corporate Social Responsibility (CSR) alone. They need to find well-fitting partners.

Originality/value – This study provides very novel insights by having integrated the literature on coopetition, corporate social responsibility and sustainability resulting in a new conceptual framework that combines coopetition in CRS and performance. The new conceptual framework has both practical and research implications for coopetition in CRS and firm performance.

Keywords Coopetition, Corporate responsibility and sustainability, Firm performance, Stakeholder attributes
Paper type Research paper



Introduction

Commitment by firms to the advancement of the United Nations sustainable development goals (SDGs) created in 2015 has been one of the drivers leading to the unification of corporate social responsibility and sustainable development (Ike *et al.*, 2019). Sustainable development focuses on value creation, environmental management, environmentally friendly production systems, human capital management and so forth, whereas corporate social responsibility has been associated with the communal aspect of people and organizations. It covers topics such as “transparency, stakeholder dialogue and sustainability reporting” (Marrewijk, 2003, p. 102). This unification has resulted in the term corporate responsibility and sustainability (CRS), which along with political support has led to more firms engaging in social responsibility and sustainability practices to improve the social and environmental consequences of their business activities (Ashrafi *et al.*, 2018). CRS is defined as a business approach that contributes to sustainable development by delivering economic, social and environmental benefits for all stakeholders. CRS still are diverse, fragmented and incongruent (Vilanova *et al.*, 2009), and the reporting of many firms has been inconclusive (Porter and Kramer, 2006, 2011; Bansal and Song, 2017). Furthermore, the potentially high investments of firms in CRS demand a positive appreciation of these by their stakeholders. For achieving synergies on their investments and on stakeholder impact, firms might simultaneously collaborate with their competitors, hence enter inter cooperation (Bouncken and Fredrich, 2016a; Gnyawali and Park, 2011) on CRS. While the adoption of inter-firm cooperation (i.e., simultaneous collaboration and competition, Bengtsson and Kock, 2014) as a strategy to enhance financial performance is increasingly shown as a powerful strategy to improve market power (Gnyawali and Park, 2011) or innovation (Bouncken and Fredrich, 2016b), its strategic value with regard to improving CRS outcomes remains untested to date. It is proposed that cooperation is more critical in relation to CRS activities than business as usual. This is due to the importance of sustainability standards or an index, the need for significant technology investments in R&D with uncertain returns, the presence of urgency around the sustainability issue, the need to effectively communicate with regulators and other stakeholders on public policy and achieving the required level of corporate-level sustainability performance. Therefore, understanding cooperation in relation to CRS activities is of paramount importance. As emphasized by Christ *et al.* (2017) and Scandellius and Cohen (2016) who suggest considering cooperation in relation to sustainability, the main question is if cooperation with CRS might improve firm performance.

Accordingly, the purpose of the current study is to inform research on cooperation with the specificities set out by CRS research (Christ *et al.*, 2017). Garnering social performance, which is a key to CRS, moves beyond the traditional view of the cooperation–firm–economic–performance relationship (Manzhynski and Figge, 2020; Gnyawali and Park, 2011; Luo *et al.*, 2007). Concordantly, other researchers have claimed a broader perspective that includes both financial and non-financial dimensions (Adams *et al.*, 2016). However, non-financial performance outcomes, such as social performance, tend to be overlooked in inter-firm cooperation research (Kumar *et al.*, 2020, 2023; Luo *et al.*, 2007). It nuances our research purpose to investigate the relationship concerning cooperation in CRS and stakeholder relational attributes with both firm’s financial and social performance.

The theoretical framework underpinning this study is based on the stakeholder perspective and its association with the cooperation, corporate social responsibility and sustainability literature.

The fundamental rationale is that by collaborating, competitors can share ideas and information, resulting in the creation of fresh knowledge required for innovation and long-term performance. The stakeholder viewpoint is concerned with relational attributes such as “effective power” and “legitimate stake” (Alsos *et al.*, 2011), which are used as explanatory variables in this study to influence the outcomes of cooperation (Akpınar and Vincze, 2016).

More specifically, this study investigates the direct influence of coopetition in CRS on firm performance, as well as the moderating effects of stakeholder attributes on the effectiveness of coopetition in CRS and the firm–performance relationship.

Our study is based on 215 listed firms in Australia, at the forefront committing to incorporate sustainability into their everyday operations (Christmas and Webster, 2016). Our findings indicate that coopetition in CRS activities leads to improved financial and social firm performances. Stakeholder attributes were also found to positively moderate the relationship between coopetition in CRS and firm financial performance. However, there was no evidence of moderation for the coopetition in CRS–firm social performance relationship.

In general, our findings contribute to answering the call for research to explore the measures of stakeholder attributes and quantitatively examine their roles in coopetition (Manzhynski and Figge, 2020; Akpinar and Vincze, 2016; Christ *et al.*, 2017). We contribute to the coopetition literature by providing evidence that coopetition in CRS positively affects firm performance and stakeholder attributes moderate the relationship between coopetition in CRS and firm financial performance. Our insights and novel framework (see Figure 1) have both practical and research implications for coopetition in CRS and firm performance. The research findings advocate that managers should consider coopetition as a strategy for managing corporate social responsibility and sustainability activities as a way of improving their firm’s sustainability performance.

Theoretical framework

The current study follows stakeholder perspective and its association with the coopetition, sustainability and corporate social responsibility literature to analyse the potential relationships among coopetition in CRS and firm performance. Coopetition occurs in many different motives and forms (Bengtsson and Raza-Ullah, 2016). Coopetition might occur on an inter-firm level or even include several firms in an industry towards an industry-level coopetition. Upon coopetition in CRS, industry-level associations have been documented revealing the agreement on a common target(s) among diverse firms. In contrast, little is known on firm-level coopetition on CRS, which is exposed to greater tensions, increasing further when innovation and knowledge exchanges are included. Stakeholder theory is based on the inherent assumption that all businesses have stakeholders and managing them appropriately can help reduce risk and improve all companies’ social responsibility (Akpinar

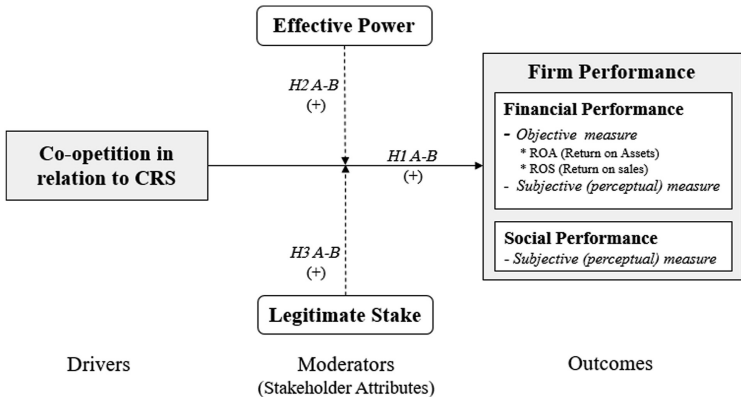


Figure 1.
Coopetition in relation
to CRS

Source(s): Author’s own work/creation

and Vincze, 2016). It is also consistent with value maximization or the value-seeking behaviour of firms of all sizes (Crick and Crick, 2023; Bouncken *et al.*, 2020) and that the relationship between coopetition in CRS and firm performance may be based on the notion of “stakeholder value maximization” (Christ *et al.*, 2017; Volschenk *et al.*, 2016). When studying coopetition from a stakeholder perspective it is necessary to consider relational attributes, such as power and stake because explanatory variables affecting both the types and outcomes are associated with it (Akpinar and Vincze, 2016). These two relational attributes are potentially coopetitive as stakeholders simultaneously compete and cooperate with the firm (Akpinar and Vincze, 2016). Although the role of stakeholders in coopetition has been acknowledged (Volschenk *et al.*, 2016), similarities between the coopetition and stakeholder perspectives have been limited thus far (Bengtsson and Kock, 2014). Among the theoretical perspectives associated with coopetition, it is proposed that the stakeholder perspective best explains the creation and appropriation of socio-environmental value (Volschenk *et al.*, 2016).

In the strategy literature, corporate social responsibility is well-established, whereas corporate social responsibility and firm financial performance have been investigated separately in relation to collaborative (Austin and Seitanidi, 2012) or competitive interactions (Kemper *et al.*, 2013). Clearly, many organizations interact with competitors and other stakeholders across the value chain to address economic, social and environmental concerns (Crick *et al.*, 2023; Luo *et al.*, 2016). However, previous research has not considered inter-firm coopetition for achieving CRS. Corporate social responsibility/sustainability has emerged as an important component of corporate success and appears to be significant to competitive differentiation (Cygler *et al.*, 2018). As a result, a corporation’s participation in corporate social responsibility and sustainability practices may result in improved firm performance, both financially and socially (Adams *et al.*, 2016). In certain situations, competitive collaboration for corporate social responsibility/sustainability has resulted in initiatives like economic regeneration, social inclusion and ethical business practices (Grayson, 2007). Other sustainable activities include the development of low-carbon fuel cell facilities, the sourcing of conflict-free minerals and the development of solutions that promote economic growth while minimizing environmental effect (Luo *et al.*, 2016). Firms that build and promote corporate social responsibility/sustainability instruments by establishing reporting standards or guidelines have coopetitive interactions (Gibassier, 2015). As a result, collaboration can drive sustainability and improve products and services (Christ *et al.*, 2017; Cygler *et al.*, 2018). To meet the aforementioned goals, the current study combines coopetition and CRS.

Hypotheses

Coopetition in CRS

As aforementioned, coopetition is considered to be a source of “economic benefit” for all types of firms, including multinationals (Gnyawali and Park, 2011) and SMEs (Thomas *et al.*, 2013; Gnyawali and Park, 2009). Prior studies examining the impact of coopetition on business performance have identified positive outcomes in coopetitive relationships (Kumar *et al.*, 2017; Ritala, 2012). Hence, one might assume that coopetition would also improve financial and non-financial gains related to CRS, resulting in increasing the pie, greater market power, and as a general facilitator the knowledge creation which is necessary for innovation but also sustainable development (Christ *et al.*, 2017; Gnyawali and Park, 2011). However, also some authors reported negative relationship, especially when related to innovation and coopetition (e.g., Kim and Parkhe, 2009; Nieto and Santamaría, 2007). These authors questioned the positive aspects of coopetition especially because of the threats associated with knowledge leakage, which puts the value creation and value capture from innovation at danger (Deist *et al.*, 2023; Volschenk *et al.*, 2016). Still,

CRS might be less related to risks of proprietary knowledge loss in innovation. Hence, the negative side of coopetition might be less present for CRS than in traditional product innovation-directed coopetition projects (Crick and Crick, 2021). In addition, coopetition has been associated with cognitive and emotional tensions (Fernandez and Chiambaretto, 2016). These tensions might be present in all coopetition endeavours, maybe even particular high when coopetition is about social influences which might be seen differently from different firms and which might also hit “emotional buttons” of the involved persons. Yet, the common and important goals related to CRS might improve coherence and agreement among firms. Hence, we assume that coopetition increases both social and financial performance because of the merits related to shared resources and knowledge, the positive effects by joined market power, the low likelihood of strong disagreement and the uniting force by common social goals between firms. Based on the above discussion, we hypothesise:

- H1A. Coopetition in CRS activities is positively associated with a firm’s financial performance.
- H1B. Coopetition in CRS activities is positively associated with a firm’s social performance.

Stakeholder relational attributes

Stakeholder attributes, such as power and stake, potentially concern cooperative relationships because stakeholders simultaneously compete and cooperate with the firm (Akpınar and Vincze, 2016). It has been suggested that supportive behaviour by stakeholders who possess power and stake can influence firm financial performance (Peloza and Papania, 2008). However, thus far only a limited number of studies have explored the importance of stakeholder attributes in achieving effective corporate social and environmental performance outcomes (Akpınar and Vincze, 2016). For CRS, it is especially the two relational attributes – power and legitimacy – to assist in understanding of firm–stakeholder interactions. The effects of coopetition are reportedly influenced by the relative power (Bouncken *et al.*, 2020) in cooperative alliances. Co-opetitors with control over important resources and capabilities and who are in possession of relative bargaining power can: withdraw access to important resources; demand the fulfilment of certain conditions and build alliances with powerful third parties (Akpınar and Vincze, 2016). Other relational attributes among firms, especially trust can affect the outcomes in newly established coopetition projects (Bouncken *et al.*, 2018). In CRS, building trust and gaining legitimacy in inter-firm relationships overlap conceptually if a degree of shared vision and risk in the joint investment is assumed (Saenz, 2019). Therefore, co-opetitors must have a legitimate claim to be considered a stakeholder and to reap benefits from coopetition (Bouncken *et al.*, 2018).

Coopetition and stakeholder effective power

Where coopetition is concerned, when stakeholders hold relatively high levels of effective power it is anticipated that they will bring resource-rich, core-competences and complementary capabilities into the collaborative relationship (Hörisch *et al.*, 2014). For example, resource-rich collaborators (in cooperative relationships) would be able to support the innovative capabilities necessary for sustainable product and service development that, in turn, can help the achievement of financial objectives. Cooperative partners search for complementarities (Bouncken *et al.*, 2018; Gnyawali and Park, 2011). In another example, Depeyre and Dumez (2010) found that Boeing and SAIC have complementary capabilities in certain domains. Hence, firms can learn from each other and to create innovative products, enabling them to be more competitive. Gnyawali and Park (2011) also proposed that

coopetition could create synergy by sharing production facilities, thus playing an important role in firm enhancement.

Further, [Eesley and Lenox \(2006\)](#) argue that well-endowed stakeholder groups are likely to be more successful in bringing about positive firm responses towards achieving social-environmental goals. The resource dependence perspective suggests that other powerful corporate stakeholder groups that control critical corporate resources ([Pfeffer and Salancik, 1978](#)) influence firms' actions. The resource dependence theory posits that, as stakeholders who have control over important resources have strong and effective power, they will gain more benefit from cooperative relationships. [King \(2008\)](#) also argues that the power of the stakeholder influences negotiation processes. As a result, it is inferred that the greater the availability of complementary resources/capabilities, the more likely co-opetitors will respond positively to CRS initiatives. Thus, the presence of effective power in coopetition (in CRS) may help improve both the financial and social performance of a firm. Accordingly, the following hypothesis is proposed:

- H2A. The degree of effective stakeholder power positively moderates the relationship between coopetition in CRS and a firm's financial performance.
- H2B. The degree of effective stakeholder power positively moderates the relationship between coopetition in CRS and a firm's social performance.

Coopetition and stakeholder legitimate stake

A business must have a legitimate claim or stake in another organisation to be considered a stakeholder in a cooperative relationship. In a cooperative relationship, competitors align with Freeman's definition of a stakeholder, as they are impacted by a firm's operations and the effects are typically direct ([Gnyawali and Park, 2011](#)). [Peloza and Papania \(2008\)](#), among others, maintain that supportive stakeholder behaviour by those who possess a legitimate stake leads to improved firm financial performance. However, only a limited number of studies have explored whether stakeholder attributes influence the achievement of effective corporate social and environmental performance outcomes ([Akpınar and Vincze, 2016](#)). Prior studies have advocated testing the moderating effect of stakeholder attributes, such as legitimate stake in the corporate social responsibility – firm performance relationship ([Neville et al., 2011](#)). Despite the dearth of prior empirical evidence ([Agle et al., 1999](#); [Akpınar and Vincze, 2016](#)), this study argues that the high legitimate stake (i.e. pursuit of mutual interests) of stakeholders can assist in the achievement of improved financial and social performance, thereby improving the ability to influence the cooperative–performance relationship.

In stakeholder theory, legitimate stake “builds cumulatively over a period of time and contributes to the gradual development of trust, which raises the potential for cooperation” ([Akpınar and Vincze, 2016](#), p. 55). It has been proposed that a higher legitimate stake will lead to more collaboration, rather than competition, in the areas of stakeholder's core-competence ([Dowling et al., 1996](#)). As a result, a higher legitimate stake is likely to encourage collaboration-dominated coopetition (in CRS). This, in turn, may help to develop sustainable products and services ([Luo et al., 2016](#)), improve a firm's financial performance ([Gnyawali and Park, 2011](#)), social-environmental value ([Volschenk et al., 2016](#)) and overall sustainability performance ([Christ et al., 2017](#)). Therefore, it is proposed that stakeholder groups with a higher legitimate stake are likely to be more successful in achieving economic and social-environmental performance than stakeholder groups with a lower legitimate stake. Based on these propositions, it is further hypothesised:

- H3A. The degree of stakeholder's legitimate stake positively moderates the relationship between coopetition in CRS and firm's financial performance.

H3B. The degree of stakeholder's legitimate stake positively moderates the relationship between coopetition in CRS and firm's social performance.

Method

Sample and data

Firstly, a random sample of 1200 firms from across 11 industries in Australia was identified. As the issues related to corporate social responsibility and sustainability are equally important to all sectors/industries in Australia, the sample included firms from all 22 sectors. Specifically: energy, health care, information technology, finance, materials, real estate, industrials, utilities, communication services, consumer staples and consumer discretionary as per the Global Industry Classification Standard (GICS). The data were collected from April 2019 to May 2019 using a web-enabled survey. Three qualifying questions were included in the survey: (1) Are you a key/senior decision maker in your company? (2) Does/Has your company participated(d) in social responsibility and sustainable development activities/practices? and (3) Did your firm collaborate with any competing firms on social responsibility and sustainability-related activities/practices in the year ending June 2017 or before?

The survey questionnaire was administered to alliance managers/senior executives of private and publicly listed firms in Australia. A total of 316 responses were received, yielding a response rate of approximately 26.3%, with 215 responses found to be useable. The remaining 101 responses were discarded as there were too many missing values and straight liners (i.e. responses that are nearly identical in nature) and speeders (responses identified where questions have been answered with little or no thought). The data were collected through a professional data collection agency, Online Research Unit (ORU) Pvt Ltd [1].

Our study's setting in Australia was well suited to investigate our model due to the apparent desire of Australian firms to engage in innovation through both competitive and collaborative activities to improve corporate social responsibility and sustainability. Such actions are evident from the scrutiny of public policy documents, such as incentives for research and development and intellectual property exploitation in the taxation system (Christmas and Webster, 2016). Specifically, the Australian government requires alliance proposals for major infrastructure projects with sustainable design (Watenpugh, 2019). This is because no single company is considered to be comprehensive enough to carry out the whole project and bear the entire risk, so instead they are required to join forces and build teams of competitors.

Measures

For this research, both established and new scales were utilised. A five-point Likert-scale was used to capture the extent of the informant's agreement, ranging from 1 (strongly disagree) to 5 (strongly agree) for "coopetition in CRS". Similarly, for stakeholder attributes "effective power" and "legitimate stake", a five-point Likert-scale ranging from 1 (very low) to 5 (very high) was utilized. The new scales on coopetition in CRS, effective power and legitimate stake were designed in consultation with experts on the topic prior to the commencement of data collection in 2018. The experts included 14 senior executives/managers. Next, the items and scales were tested via a pilot study with senior executives/managers in NSW, Australia. Finally, the survey questionnaire was administered to a range of alliance managers/senior executives of private and publicly listed firms based in Australia. The scale developed for coopetition in CRS was further tested by employing confirmatory factor analyses (CFA) in order to understand how well these items represent the construct. Analysis confirmed the item reliability measured by Cronbach's alpha were within the acceptable range (0.71–0.84) as well as the convergent validity (Composite reliability (CR) ≥ 0.6) ranges from 0.80 to 0.89 (see

Table A1 and A2 for details). We followed the steps suggested by Henseler *et al.* (2015) to test the latent constructs and associated discriminant validity. The results (reported in Table A3) met the Heterotrait-monotrait (HTMT) criterion of discriminant validity ($\text{HTMT} \leq 0.85$ as suggested by Henseler *et al.* (2015)).

Independent and moderating variables. For this research study, three newly conceptualized independent variables were utilised 1) coopetition in CRS, 2) effective power and 3) legitimate stake. Based on the expert interview, a new scale for coopetition in CRS was developed. The scale comprised several items following pre-testing through a pilot study. The items were evaluated using an exploratory factor analysis to check their content validity (see Table A1 for details). Accordingly, the final seven items used to measure coopetition in CRS were: (1) We collaborate (with competing firms) to achieve a common economic goal; (2) We collaborate (with competing firms) to achieve a common social goal; (3) We collaborate (with competing firms) to achieve a common environmental goal; (4) Integrating social, environmental and economic goals is important to us; (5) Sustainability goals (e.g. economic, social and environmental) are achievable for firms in competitive-collaborations; (6) Active competition with our collaborators is important to us; and (7) We prefer a partner (competitor) who possesses complementary capabilities that directly contribute to our firm's value and performance. The scale of coopetition in CRS was estimated with a Cronbach's alpha 0.86 – which is above the acceptable minimum (Nunnally, 1978) and the factor loadings ranged from 0.65 to 0.81. The value of composite reliability was 0.89, which is regarded as satisfactory (Bagozzi and Yi, 1988). Moreover, the value of average variance extracted (AVE) was 0.55 (>0.5), also considered to be in an acceptable range (Fornell and Larcker, 1981).

In the process of researching the concept of stakeholder relational attributes in the context of coopetition (Akpınar and Vincze, 2016) new scales were developed for effective power (4-item scale) and legitimate stake (3-item scale) after pre-testing these items in a pilot study. These items were further evaluated using an exploratory factor analysis to check for content validity (see Table A1 for details). The four items used for effective power were: (1) The degree to which your firm requires resources from competing firms; (2) The extent to which your firm exercises control over resources when collaborating; (3) The degree to which your firm needs to comply with its collaborating partners' demands; and (4) The perceived relative bargaining position of your firm in collaborative negotiations. A Cronbach's alpha of 0.73 was calculated for effective power and factor loadings ranged from 0.71 to 0.79. The composite reliability (0.80) and AVE (0.61) values were also in the acceptable range (Bagozzi and Yi, 1988; Fornell and Larcker, 1981).

The three items associated with legitimate stake were: (1) the degree of shared vision (or goal commonality) in your firm's partnership; (2) the degree of shared risk in joint investments (where applicable); and (3) the degree of common legal concerns in your firm's partnerships (where applicable). A Cronbach's alpha of 0.71 was calculated for legitimate stake – above the acceptable minimum (Nunnally, 1978) and the factor loadings ranged from 0.71 to 0.84. In addition, values related to the composite reliability (0.84) and AVE (0.64) were regarded as satisfactory.

Dependent variables. Established scales were utilised for the dependent variables. As a firm's performance is multidimensional, scholars have expressed the need to use multiple measures for analysis (Bouncken and Fredrich, 2012). Hence, firm performance was measured focusing on a combination of objective and subjective measures. Subjective (or perceptual) measures were used for social performance, whereas financial performance was measured using both subjective and objective measures (such as return on assets and return on sales).

To analyse financial performance, senior executives/managers were asked to evaluate their firms' competitive effectiveness for the year ending June 2018, or in the previous 3 years

in comparison to their principal competitors' performance with regard to: (1) growth in sales, (2) return on investment, (3) market growth and (4) market share. The financial performance scale was calculated with a Cronbach's alpha of 0.82 – which is above the acceptable minimum (Nunnally, 1978) and the factor loadings ranged from 0.76 to 0.84. These items were further evaluated using an EFA analysis to check their content validity (see Table A2 for details). The value of composite reliability was 0.85, which is regarded as satisfactory (Bagozzi and Yi, 1988). Moreover, the value of AVE was 0.69 (>0.5), considered to be in an acceptable range (Fornell and Larcker, 1981).

A social performance measure was developed by Kinder, Lydenberg, Domini and Co., Inc. (KLD), a financial advisory firm specializing in the assessment of corporate social performance (CSP) (Van der Laan *et al.*, 2008). KLD assesses companies on seven CSP dimensions: employees, customers, investors, community, diversity, environment and human rights. Consequently, the survey respondents were asked to evaluate their firm's social performance for the year ending June 2018 (or in the previous 3 years) in comparison to their main competitors' performance with regard to seven CSP dimensions. The social performance scale was estimated with a Cronbach's alpha of 0.83 – above the acceptable minimum (Nunnally, 1978). The seven items were further evaluated using an EFA analysis to check their content validity (see Table A2 for details). Moreover, the composite reliability (0.84) and AVE (0.65) values were also in an acceptable range (Bagozzi and Yi, 1988; Fornell and Larcker, 1981).

In addition, the commonly used objective measures of firm profitability, such as return on assets (ROA) and return on sales (ROS) were also used as proposed by Kostopoulos *et al.* (2011) and Luo *et al.* (2007) to enable the findings to be checked for robustness. ROA is defined as the firm's net income divided by total assets, whereas ROS is measured as net income divided by total revenue (sales). The data on objective measures of firm financial performance was obtained through using a web-enabled survey.

Control variables. Potential confounding variables such as firm size, industry classification, firm affiliation to the business group (BG) and partner firm's BG affiliations were also controlled for. The size of the firm constitutes a critical control variable because larger firms frequently pursue collaborations (with other competing firms) for technological innovations (Gnyawali and Park, 2011). Based on previous research, controls were also included in relation to the industry/sector classification (Bouncken and Fredrich, 2012). Finally, a firm affiliation to the BG and partner firm's BG affiliations have been controlled for because firms in co-competition gain more if their co-competitive partner has a BG affiliation (Kumar and Dutta, 2017).

Analytical approach and models. Multiple regression analysis was used to test the hypotheses outlined earlier. A Kolmogorov–Smirnov test confirmed the univariate normality assumption. Further, the skewness and kurtosis of all the results were in the range of $2 \times$ Standard Error and Linearity was examined by scatterplots of pairs of variables (Bhattacharyya and Cummings, 2014). We performed collinearity diagnostics by computing variance inflation factors (VIFs), tolerance and eigenvalues for all the independent variables, including the interaction terms. The VIF values ranged from 1.11 to a maximum of 1.38, with a mean VIF of 1.25, which indicates that multicollinearity (if the value is less than 3.0) is not an issue. To test the hypotheses, we developed and estimated empirical models using multiple regression.

Results

Descriptive analysis

The preliminary analysis of organizational information (in Table 1) revealed that a total of 215 firms across 11 sectors participated in the study. Approximately 75% of senior executives/managers had less than 10 years' experience of projects related to sustainability,

Characteristics	Attributes	Australia		Firm performance
		N = 215	(%)	
Gender	Male	150	69.8	137
	Female	64	29.7	
Age	Prefer not to disclose	1	0.5	
	Below 34 years	44	20.5	
	35–44 years	73	34.0	
	45–54 years	41	19.0	
	Over 55 years	57	26.5	
Experience	Less than 5 years	83	38.6	
	5–10 years	78	36.3	
	11–15 years	31	14.4	
	Over 15 years	23	10.7	
Most recent position	Senior executive (ASX-listed)	25	11.6	
	Senior manager (ASX-listed)	72	33.5	
	Senior executive (non-ASX)	57	26.5	
	Senior manager (non-ASX)	61	28.4	
Sector	Communication services	13	6.1	
	Consumer discretionary	24	11.2	
	Consumer staples	22	10.2	
	Energy	31	14.4	
	Financials	26	12.1	
	Health care	11	5.1	
	Industrials	14	6.5	
	Information technology	28	13.0	
	Materials	14	6.5	
	Real estate	22	10.2	
	Utilities	11	5.1	
Firm's affiliation to Business (consolidated) Group	Yes	119	55.3	
	No	96	44.7	
Partner firm's (competitor) affiliation to Business Group	Yes	107	49.8	
	No	108	50.2	

Source(s): Author's own work/creation

Table 1.
Descriptive statistics

innovation or social responsibility. Further analysis suggested that industries such as energy, finance sector, consumer discretionary and information technology have more cooperative partnerships in CRS compare to communication, health care, materials and utilities.

In [Table 2](#), the means, standard deviations and Pearson product-moment correlations are reported with the variables incorporated in the regression analyses.

Results

The results of the hypotheses related to the subjective measure of financial and social performance are outlined in Models 1 and 4 in [Table 3](#). Overall, these models were statistically significant ($p < 0.001$). In terms of the individual hypotheses, the coefficient for cooperation in CRS is positive and significant ($b = 0.318, p < 0.001$, Model 1), suggesting that cooperation in CRS has a positive effect on firms' financial performance, therefore supporting [H1A](#). Similarly, the positive and significant coefficient for cooperation in CRS ($b = 0.384, p < 0.001$, Model 4) supports [H1B](#) implying that cooperation in CRS has a positive effect on a firm's social performance.

Hypotheses [H2A](#), [H2B](#), [H3A](#) and [H3B](#) examine the moderating roles of stakeholder attributes (i.e. effective power and legitimate stake) on the relationship between cooperation in

	Financial performance			Firm performance			Social performance		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 5	Model 6	Model 6
<i>Independent variables</i>									
Cooperation in CRS	0.318*** (0.066)	0.267*** (0.067)	0.234*** (0.066)	0.384*** (0.058)	0.310*** (0.061)	0.280*** (0.057)	0.310*** (0.061)	0.280*** (0.057)	
Effective Power		0.216*** (0.069)	0.285*** (0.067)		0.255*** (0.061)	0.335*** (0.057)			
Legitimate Stake									
<i>Moderating effect</i>									
Cooperation in CRS (×) Effective Power		0.086* (0.042)	0.077* (0.036)		0.001 (0.037)	−0.027 (0.030)			
Cooperation in CRS (×) Legitimate Stake									
<i>Control variable</i>									
Firm size ^a	0.020 (0.016)	0.022 (0.016)	0.017 (0.016)	−0.006 (0.014)	−0.004 (0.014)	−0.008 (0.013)	−0.004 (0.014)	−0.008 (0.013)	
Business group (BG) affiliation of a firm	−0.230* (0.106)	−0.166 (0.103)	−0.164 (0.103)	−0.147 (0.094)	−0.090 (0.091)	−0.092 (0.087)	−0.090 (0.091)	−0.092 (0.087)	
Business group (BG) affiliation of a partner firm	−0.033 (0.106)	−0.025 (0.102)	0.027 (0.103)	−0.018 (0.094)	0.002 (0.090)	0.049 (0.087)	0.002 (0.090)	0.049 (0.087)	
<i>Industry classification^b</i>									
Communication services	−0.095 (0.205)	−0.109 (0.196)	−0.162 (0.197)	−0.073 (0.181)	−0.073 (0.174)	−0.118 (0.167)	−0.073 (0.174)	−0.118 (0.167)	
Consumer discretionary	0.120 (0.170)	0.082 (0.163)	0.086 (0.163)	0.064 (0.150)	0.024 (0.144)	0.021 (0.138)	0.024 (0.144)	0.021 (0.138)	
Consumer staples	0.053 (0.177)	0.081 (0.170)	0.067 (0.170)	0.007 (0.157)	0.023 (0.151)	0.000 (0.144)	0.023 (0.151)	0.000 (0.144)	
Financials	0.104 (0.167)	0.105 (0.161)	0.096 (0.160)	0.024 (0.147)	0.060 (0.143)	0.061 (0.136)	0.060 (0.143)	0.061 (0.136)	
Health care	−0.020 (0.216)	0.096 (0.209)	0.121 (0.210)	0.146 (0.191)	0.232 (0.185)	0.265 (0.178)	0.232 (0.185)	0.265 (0.178)	
Industrials	−0.049 (0.201)	−0.085 (0.193)	0.027 (0.194)	−0.135 (0.178)	−0.142 (0.171)	−0.011 (0.165)	−0.142 (0.171)	−0.011 (0.165)	
Information technology	0.187 (0.161)	0.167 (0.154)	0.214 (0.154)	0.047 (0.142)	0.036 (0.136)	0.075 (0.131)	0.036 (0.136)	0.075 (0.131)	
									(continued)

Table 3.
Results of multiple
regression analysis
(subjective measures)

	Financial performance		Firm performance		Social performance	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Materials	0.273 (0.202)	0.218 (0.194)	0.263 (0.194)	0.342 (0.179)	0.297 ⁺ (0.172)	0.313 ⁺ (0.164)
Real estate	0.273 (0.202)	0.196 (0.166)	0.232 (0.166)	-0.049 (0.153)	-0.089 (0.147)	-0.080 (0.141)
Utilities	-0.005 (0.229)	-0.046 (0.220)	0.092 (0.221)	0.069 (0.203)	0.065 (0.195)	0.213 (0.188)
Constant	2.515 ^{***} (0.338)	1.866 ^{***} (0.368)	1.589 ^{***} (0.387)	2.402 ^{***} (0.299)	1.726 ^{***} (0.326)	1.405 ^{***} (0.328)
<i>Model indices</i>						
R^2	0.198	0.271	0.271	0.237	0.305	0.361
Adjusted R^2	0.142	0.212	0.212	0.183	0.248	0.310
Change in R^2		0.015	0.017		0.001	0.002
F value	3.522 ^{***}	4.599 ^{***}	4.606 ^{***}	4.429 ^{***}	5.421 ^{***}	7.004 ^{***}
Number of observations	215	215	215	215	215	215

Note(s): Unstandardized regression coefficients are reported, standard errors in parentheses. ^aLog10, ^bDummy-coded variable, Energy is a Benchmark Industry, ⁺ $p < 0.10$; ^{*} $p < 0.05$; ^{**} $p < 0.01$; ^{***} $p < 0.001$

Source(s): Author's own work/creation

CRS and firm's financial and social performance. To test these hypotheses, the interaction term was added using their z-scores for multiple regression analyses. The results of cooperation in CRS and firm's subjective measure of financial performance are presented in Models 2 and 3 in Table 3. The interaction between cooperation in CRS and effective power accounted for significantly more variance than just cooperation in CRS and effective power alone (R^2 change = 0.015, $p = 0.001$). The coefficient for interaction between cooperation in CRS and effective power was positive and significant ($b = 0.086$, $p < 0.05$ in Model 2) indicating that effective power positively moderate cooperation in CRS and firm's financial performance relationship (i.e. supporting H2A). Support was also found for H3A because the interaction between cooperation in CRS and legitimate stake accounted for a significant proportion of the variance in firm financial performance (increase in $R^2 = 0.017$, $p = 0.001$; $b = 0.077$, $p < 0.05$ in Model 3). Hence, legitimate stake positively moderates the cooperation in CRS – financial performance relationship.

Models 5 and 6 in Table 3 provide the results of testing for the moderating-effect hypotheses related to the subjective measure of social performance. The coefficient for interaction between cooperation in CRS and effective power was negative and insignificant (see Model 5) and therefore does not support H2B. No support was found for H3B as well (in Model 6). Accordingly, our findings reveal that collaborators were mostly concerned with financial rather than social performance while making decisions related to cooperation (in CRS).

Additional analysis. Additional analyses were conducted to further understand the moderating effects of effective power and legitimate stake as the stakeholder attributes pertain to the relationship between cooperation in CRS and firm financial performance. As reported previously, both hypotheses H2A and H3A were positive and significant, suggesting that the stakeholder attributes positively moderate the cooperation in CRS – financial performance relationship. Consequently, four possible scenarios are outlined in Figure 2 that provide a differentiated and rich picture of the roles of stakeholder attributes in cooperation: low in power/stake; low in power and high in stake; high in power and low

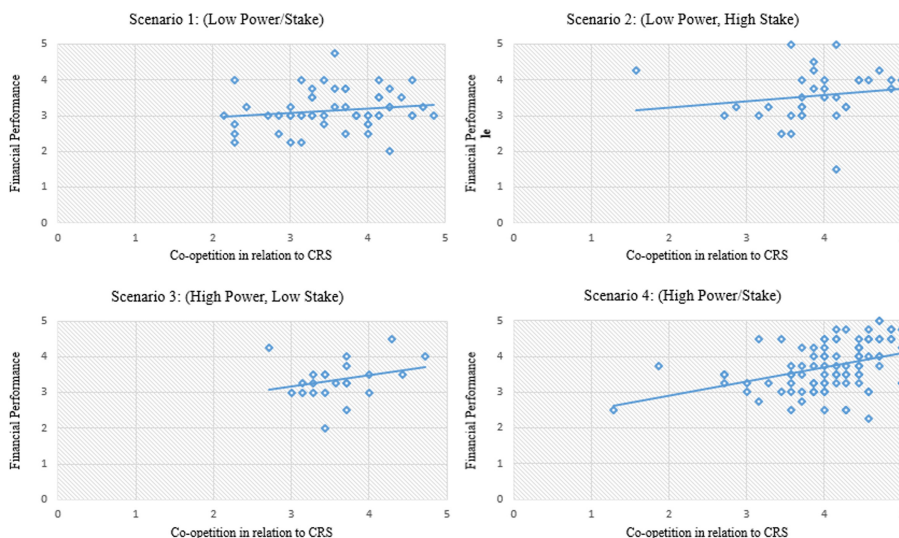


Figure 2.
Moderating effects of
stakeholder attributes

Source(s): Author's own work/creation

in stake; and high in power/stake. In all four scenarios, the plot of cooperation in CRS and financial performance is positive and linear. However, the slope that is evident in scenario 4 is steeper than that shown for scenario 1. These findings suggest that firms in cooperation (in relation to CRS) will gain more when a high level of stakeholder attributes are evident compared to low levels.

To revisit the financial performance – social performance link in the context of cooperation in relation to CRS, a set of two additional models were taken into consideration. For example, one model included financial performance (FP) as an additional control variable in relation to cooperation in the CRS – social performance (SP) relationship. Similarly, SP was treated as a control variable with regard to the cooperation in CRS – FP relationship in another model. The regression model includes cooperation in CRS – SP relationship while controlling for FP was found to be statistically significant, whereas the model that includes cooperation in CRS – FP relationship while controlling for SP proved to be statistically insignificant [2]. Overall, these findings indicate that the inclusion of FP as an “additional control” in the regression confirms that the cooperation in CRS – SP relationship in Table 3 holds even after FP is controlled for (mitigating the omitted variables bias). Therefore, cooperation in CRS may be considered as a critical source of competitive advantage for firms having social motive(s) along with other factors.

Robustness using objective measures of financial performance. We tested the robustness of our findings by using the objective measures of financial performance as an alternative dependent variable. Table 4 gives the results of the testing for main-effect hypotheses related to ROA (in Model 1) and ROS (in Model 4). All models are statistically significant ($p < 0.10$). However, in terms of the individual hypotheses, none of the coefficients was found to be statistically significant. The findings also suggest an insignificant result in terms of the moderation of stakeholder attributes on the cooperation in CRS – financial performance relationship (see Models 2, 3, 5 and 6 in Table 4).

Addressing the potential endogeneity bias. The instrumental variable technique is a common approach for addressing potential endogeneity issues in accounting research (Larcker and Rusticus, 2010). The most frequently used instrumental variable estimator is two-stage least squares (2SLS). The study considered “firm age” as a valid instrumental variable because of its moderate correlation with the endogenous variable (i.e. cooperation in CRS). This is because as firms age they gain more experience and knowledge about the market and sustainable solutions that could form the basis of cooperation (Gnyawali and Park, 2011), although it does not directly affect firm performance in cooperation. The age of the firm was measured as the natural logarithm of number of years of establishment. In the first stage, the endogenous independent variable, cooperation in CRS was regressed on the chosen instrumental variable (i.e. firm age) and the regression residual was obtained. In the second stage, the dependent variable, firm performance was regressed on the residual *in lieu* of the endogenous independent variable. The system of equations are as follows:

$$1^{\text{st}} \text{ stage equation : Cooperation in CRS} = \alpha_0 + \beta_0(\text{firm age}) + \text{Controls} + e_0$$

$$2^{\text{nd}} \text{ stage equation : P} = \alpha_{01} + \beta_{01}(\text{Cooperation in CRS}_{\text{residual}}) + \text{Controls} + e_{01} \& (2\text{SLS})$$

The results shown in Table 5 are estimated using 2SLS, which accounted for endogeneity and omitted variable bias. After instrumentation, for the firms with cooperative relationships in CRS, their financial and social performances were relatively higher than those firms without cooperation in relation to CRS.

Discussion and conclusion

The current study was designed to explore cooperation in CRS, concentrating on the relationships between cooperation in CRS and firm performance. Our findings confirm that

	ROA	Firm performance					ROS	Model	Model	Model
		Model	Model	Model	Model	Model				
		1	2	3	4	5		5	6	6
<i>Independent variable</i>										
Cooperation in CRS		-81.358 (114.852)	-110.219 (122.509)	-65.216 (121.132)	-69.416 (78.706)	-125.091 (83.197)		-87.379 (82.984)		
Effective Power			80.736 (125.797)			173.376 (85.430)				
Legitimate Stake				-58.372 (122.720)				56.879 (84.072)		
<i>Moderating effect</i>										
Cooperation in CRS (×) Effective Power			-36.980 (77.330)			-36.159 (52.516)				
Cooperation in CRS (×) Legitimate Stake				-38.372 (64.986)						-11.720 (44.520)
<i>Control variable</i>										
Firm size ^a		8.429 (28.598)	9.110 (28.724)	9.262 (28.736)	-25.463 (19.598)	-24.045 (19.507)		-25.892 (19.686)		
Business group (BG) affiliation of a firm		-357.722 (185.719)	-346.104 (188.387)	-375.558 (188.387)	-115.103 (127.269)	-82.654 (127.936)		-107.231 (129.058)		
Business group (BG) affiliation of a partner firm		129.963 (185.718)	139.512 (186.316)	117.019 (187.533)	-115.964 (126.861)	-99.433 (126.529)		-104.800 (128.473)		
<i>Industry classification^b</i>										
Communication services		20.406 (357.381)	26.981 (358.986)	40.709 (359.931)	-40.763 (244.907)	-34.202 (243.792)		-46.397 (246.577)		
Consumer discretionary		5.566 (296.388)	-5.465 (298.121)	11.952 (297.900)	-38.166 (203.110)	-63.917 (202.458)		-45.593 (204.082)		
Consumer staples		65.279 (309.320)	64.627 (310.743)	57.976 (310.743)	-16.215 (211.972)	-10.682 (211.029)		-18.610 (212.880)		
Financials		13.501 (290.790)	37.712 (294.151)	24.168 (293.020)	-58.705 (199.274)	-21.727 (199.762)		-49.579 (200.739)		
Health care		1721.593 (377.286)	1720.95 ^{***} (381.755)	1674.35 ^{***} (383.209)	1390.0 ^{***} (258.548)	1430 ^{***} (259.254)		1407.4 ^{***} (262.524)		
Industrials		-63.629 (350.952)	-52.716 (53.262)	-72.613 (354.904)	-109.344 (240.502)	-101.120 (239.905)		-86.283 (243.134)		

(continued)

Table 4.
Results of multiple
regression analysis
(objective measures)

	ROA		Firm performance				ROS	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6		
Information technology	5.582 (280.379)	6.653 (281.599)	-0.493 (281.650)	-42.125 (192.139)	-45.236 (191.237)	-37.737 (192.950)		
Materials	56.839 (352.166)	49.562 (354.215)	55.611 (353.699)	17.112 (241.333)	-6.718 (240.552)	11.172 (242.308)		
Real estate	530.791 (301.703)	527.822+ (303.776)	534.316+ (303.038)	-18.638 (206.752)	-36.492 (206.602)	-24.206 (207.602)		
Utilities	-59.124 (399.665)	-44.010 (402.577)	-73.037 (404.255)	24.470 (273.884)	37.844 (273.395)	50.710 (276.942)		
Constant	596.418 (590.119)	414.674 (672.916)	804.216 (707.020)	719.558 (404.399)	291.506 (456.985)	555.786 (484.358)		
<i>Model indices</i>								
R^2	0.138	0.140	0.140	0.180	0.197	0.183		
Adjusted R^2	0.077	0.070	0.070	0.123	0.132	0.117		
Change in R^2		0.001	0.002		0.002	0.000		
F value	2.281**	2.012*	2.011**	3.142***	3.036***	2.768***		
Number of observations	215	215	215	215	215	215		
Note(s): Unstandardized regression coefficients are reported, standard errors in parentheses. ^a Log10, ^b Dummy-coded variable, Energy is a Benchmark Industry, ⁺ $p<0.10$; [*] $p < 0.05$; ^{**} $p < 0.01$; ^{***} $p < 0.001$								
Source(s): Author's own work/creation								

	Financial performance		Firm performance (subjective measures)		Social performance	
	OLS regression	2SLS estimation (1st Stage)	2SLS estimation (2nd Stage)	OLS regression	2SLS estimation (1st Stage)	2SLS estimation (2nd Stage)
<i>Independent variables</i>						
Cooperation in CRS	0.318 ^{***} (0.066)	–	0.321 ^{***} (0.066)	0.384 ^{***} (0.058)	–	0.385 ^{***} (0.058)
<i>Instrumental variable</i>						
Firm age ^a	–0.112 (0.088)	0.058 [*] (0.096)	–	–0.030 (0.078)	0.058 [*] (0.096)	–
<i>Control variable</i>						
Firm size ^a	0.020 (0.016)	0.019 (0.018)	0.056 ⁺ (0.031)	–0.006 (0.014)	0.019 (0.018)	0.009 (0.034)
BC affiliation of a firm	–0.230 [*] (0.106)	0.006 (0.114)	–0.224 [*] (0.106)	–0.147 (0.094)	0.006 (0.114)	–0.144 (0.095)
BC affiliation of a partner firm	–0.033 (0.106)	–0.189 ⁺ (0.113)	–0.360 (0.267)	–0.018 (0.094)	–0.189 ⁺ (0.113)	–0.145 (0.275)
<i>Industry classification^b</i>						
Communication services	–0.095 (0.205)	–0.324 (0.219)	–0.102 (0.205)	–0.073 (0.181)	–0.324 (0.219)	–0.296 (0.487)
Consumer discretionary	0.120 (0.170)	–0.388 ^{**} (0.181)	0.101 (0.170)	0.064 (0.150)	–0.388 ^{**} (0.181)	–0.206 (0.568)
Consumer staples	0.053 (0.177)	–0.328 [*] (0.189)	0.060 (0.177)	0.007 (0.157)	–0.328 [*] (0.189)	–0.214 (0.475)
Financials	0.104 (0.167)	–0.424 (0.176)	0.109 (0.166)	0.024 (0.147)	–0.424 (0.176)	–0.263 (0.600)
Health care	–0.020 (0.216)	–0.054 (0.232)	–0.011 (0.216)	0.146 (0.191)	–0.054 (0.232)	0.112 (0.203)
Industrials	–0.049 (0.201)	–0.471 [*] (0.214)	–0.074 (0.202)	–0.135 (0.178)	–0.471 [*] (0.214)	–0.463 (0.689)
Information technology	0.187 (0.161)	–0.051 (0.173)	0.171 (0.161)	0.047 (0.142)	–0.051 (0.173)	0.007 (0.164)
Materials	0.273 (0.202)	–0.271 (0.216)	0.287 (0.202)	0.342 (0.179)	–0.271 (0.216)	0.162 (0.406)
Real estate	0.254 (0.173)	–0.021 (0.186)	0.266 (0.173)	–0.049 (0.153)	–0.021 (0.186)	–0.059 (0.155)
Utilities	–0.005 (0.229)	–0.327 (0.245)	0.003 (0.229)	0.069 (0.203)	–0.327 (0.245)	–0.151 (0.490)
Constant	2.515 ^{***} (0.338)	4.221 ^{***} (0.232)	8.650 [*] (4.623)	2.402 ^{***} (0.299)	4.221 ^{***} (0.232)	5.317 [*] (5.915)
<i>Model indices</i>						
R ²	0.198	0.108	0.205	0.237	0.108	0.238
Adjusted R ²	0.142	0.046	0.145	0.183	0.046	0.180
F value	3.522 ^{***}	1.730 [*]	3.418 ^{***}	4.429 ^{***}	1.730 [*]	4.134 ^{***}
Number of observations	215	215	215	215	215	215

Note(s): Unstandardized regression coefficients are reported, standard errors in parentheses. ^aLog10, ^bDummy-coded variable, Energy is a Benchmark Industry, ⁺ $p < 0.10$, ^{**} $p < 0.05$, ^{***} $p < 0.01$; ^{***} $p < 0.001$

Source(s): Author's own work/creation

Table 5.
Results of 2SLS
estimation

coopetition in CRS can lead to improved financial and social firm performance. The findings outlined in this study shed light on recent questions that have been raised in the literature – such as how might coopetition affect sustainability in different local settings (Christ *et al.*, 2017). However, including social performances as an extra control variable neutralizes the relevance of the relationship between coopetition in CRS and financial performance. Further, the results indicate a positive moderation concerning the impact of stakeholder attributes on coopetition in CRS and a firm's financial performance. However, the moderating impact of stakeholder attributes on the relationship of coopetition in CRS and firm social performance was insignificant.

One possible reason for the former could be that the current study measures the relationship between coopetition (in CRS) and firm performance for the concurrent year. Although social performance is strategically important for any organization over the long term, managers may be more focused on short-term financial performance because it is likely to be associated with remunerations and even promotion (Lin *et al.*, 2009). The aforementioned discussion indicates that financial performance tends to be more important to organisational managers (i.e. financial motive supersedes social goals) as it is visible to the stakeholders, including shareholder, whereas it takes time for social performance to be realized (Hörisch *et al.*, 2014). Hence, while making decisions relating to coopetition, collaborators are mostly concerned with financial performance rather than social performance. Our findings shed further light on recent discussions in the literature regarding the need for the quantitative examination of the roles of stakeholder attributes in coopetition (Akpınar and Vincze, 2016).

Further, our robustness test using *objective measures* of financial performance was statistically insignificant. Our findings extend previous research on the performance effects of coopetition on innovation (Bouncken and Fredrich, 2012; Ritala, 2012; Luo *et al.*, 2007) by integrating a stakeholder and CRS perspective. However, our results do not support the previously assumed effect on financial performance. While considering coopetition in CRS as a continuous and ongoing process, we propose that traditional objective measures of financial performance may not portray a clear picture of the coopetition in CRS – financial performance relationship. While objective measures are sometimes more trustworthy, valid and unbiased than subjective measurements, this is not always the case (Schachter, 2010). We believe that corporate social responsibility/sustainability targets typically not play out in economic performance or only in the long term, for example when they encourage product or process innovations that then achieve financial gains later. Social responsibility/sustainability targets relate to critical, complex, complicated and difficult matters, and it is precisely for these reasons that subjective measures are useful to provide insights and measures on performance (Sheehy, 2015). For example, and very recently, Brown *et al.* (2021) have also argued that subjective measures are useful indicators for environmental and sustainable performance. We also expect that future political changes, for example on CO₂ prices provide changes that strengthen financial returns on corporate social responsibility/sustainability targets. Thus, these findings support the notion of applying a progressive, subjective measure of firm performance while considering progressive ideas such as coopetition in CRS (as an independent variable).

Contribution

The contribution of this research study is four-fold. *Firstly*, the findings contribute to the coopetition literature by responding to the call for research on how coopetition affects sustainability performance in different abstract thinking (Christ *et al.*, 2017). For example, this study advances our understanding of coopetition in CRS by providing evidence that coopetition in CRS positively affects firm performance. *Secondly*, in response to another call

for research to explore the measures of stakeholder attributes (such as effective power and legitimate stake) as well as quantitatively examine their roles in coopetition (Kumar *et al.*, 2023; Akpınar and Vincze, 2016), a new empirical measure for effective power and legitimate stake is proposed. Prioritizing stakeholder attributes is critical for managers managing cooperative projects and partnerships. Moreover, the empirical evidence confirms a positive moderation effect of stakeholder attributes on the relationship between coopetition in CRS and firm financial performance, which further extends the application of stakeholder theory. *Thirdly*, the widespread knowledge of and emphasis on inter-firm coopetition as an effective strategy for enhancing financial success (Gnyawali and Park, 2011; Bouncken and Fredrich, 2016b), leaves us with very little knowledge of non-financial performance as an outcome. This study deepens both conceptually and empirically our understanding of coopetition and its strategic value in sustainability and corporate social responsibility (Manzhynski and Figge, 2020; Luo *et al.*, 2016; Volschenk *et al.*, 2016). In this regard, a new empirical measure for coopetition in CRS is proposed. This seven-item scale of coopetition in CRS can be practically implemented in firms to enhance their sustainability performance. *Finally*, the research contributes to the theory development on the corporate social responsibility – corporate social performance literature by considering both the financial and non-financial dimensions of firm performance. To make sense of this body of research, corporate social performance studies have been integrated with stakeholder theory (Vishwanathan *et al.*, 2020). With regard to the finding that collaborators were mostly concerned with financial, rather than social performance while making decisions related to coopetition (in CRS) it is suggested that if companies were to embed the UN's SDGs firmly within their business case it would lead to a strengthening of stakeholder engagement. After all as pointed out in the SDG Compass (2015, p. 4) “business cannot succeed in societies that fail”. In summary, this study has integrated the literature on coopetition, corporate social responsibility and sustainability, resulting in a new conceptual framework that combines coopetition in CRS and firm performance.

Limitations and future research

In common with the majority of research, this study has some limitations. *Firstly*, as the research study was conducted in an Australian context it is important to examine whether the validity of such relationships holds for other settings, such as developing/developed nations. *Secondly*, the current study is based on an explanatory research design. Future research could consider a two-stage sequential exploratory design (i.e. a qualitative component followed by a second analytical stage) with a mixed methods approach. This would require an in-depth approach to the investigation of the phenomenon of coopetition in CRS. *Thirdly*, this study considers only two relational attributes (power and stake) because the theoretical arguments are based on the stakeholder perspective. Trust, perceived urgency, salience and commitment are other important aspects of cooperative relationships and significant determinants of alliance survival and performance, which could be considered in future research. *Fourthly*, this study is limited by its small sample size. Future studies may use a larger sample to allow for generalization. *Finally*, longitudinal studies are recommended to assess the utility of the proposed framework and to gain an understanding of why and how the stakeholder relational attributes may change over time (Akpınar and Vincze, 2016).

Managerial implications

In terms of the implications arising from this study, from a practical perspective, the research findings provide managers with evidence when considering coopetition as a strategic approach to corporate social responsibility and sustainability. In general, corporate social responsibility/sustainability and firm performance tend to be analysed separately in relation to collaboration or competitive interactions, while coopetition (i.e.

collaboration with competing firms) could be considered as a third strategic inclusion to firm's engagement in CRS activities. Extending previous work by Freeman (1984), Freeman and Moutchnik (2013) in the area of stakeholder management, the findings indicate that it is critical to view competitors as essential stakeholders whose activities with the firm have a direct impact on its continued viability and success. Coopetitive technique is suited here and can aid in problem-solving connected to sustainability concerns. As a result, the development of a supporting public policy framework is advocated. The findings also indicate that it is important to consider that competing partners possess both a high level of effective power and legitimate stake compared to low levels for overall firm performance. The presence of stakeholder attributes in coopetition (with regard to CRS) can contribute significantly to a firm's financial performance, but not the firm's social performance. This suggests that, despite some stakeholders contributing scarce and complementary resources and having a legitimate stake in coopetition, the coopetitors included in this study failed to integrate social issues and environmental responsibility proactively in relation to their firm's financial sustainability strategies. Thus, while examining firm performance, managers in coopetitive relationships must consider controlling for competition.

Notes

1. ORU is owned by WPP AUNZ (ASX: WPP), the leading online data collection agency in Australia and New Zealand. ORU currently holds ISO 20252 "Market, opinion and social research" and ISO 26362 accreditations which refers to "Access panels in the market, opinion and social research" status. The ORU are members of the Association of Market and Social Research Organizations (AMSRO) and it was awarded the AMSRO Trustmark, demonstrating a commitment to the highest privacy and ethical standards (<http://theoru.com>).
2. The results are unreported.

References

- Adams, R., Jeanrenaud, S., Bessant, J., Denyer, D. and Overy, P. (2016), "Sustainability-oriented innovation: a systematic review", *International Journal of Management Reviews*, Vol. 18 No. 2, pp. 180-205.
- Agle, B.R., Mitchell, R.K. and Sonnenfeld, J.A. (1999), "Who matters to Ceos? An investigation of stakeholder attributes and salience, corporate performance, and CEO values", *Academy of Management Journal*, Vol. 42 No. 5, pp. 507-525.
- Akpınar, M. and Vincze, Z. (2016), "The dynamics of coopetition: a stakeholder view of the German automotive industry", *Industrial Marketing Management*, Vol. 57, pp. 53-63.
- Alsos, G.A., Hytti, U. and Ljunggren, E. (2011), "Stakeholder theory approach to technology incubators", *International Journal of Entrepreneurial Behavior and Research*, Vol. 17 No. 6, pp. 607-625.
- Ashrafi, M., Adams, M., Walker, T.R. and Magnan, G. (2018), "How corporate social responsibility can be integrated into corporate sustainability: a theoretical review of their relationships", *International Journal of Sustainable Development and World Ecology*, Vol. 25 No. 8, pp. 672-682.
- Austin, J.E. and Seitani, M.M. (2012), "Collaborative value creation: a review of partnering between nonprofits and businesses. Part 2: partnership processes and outcomes", *Nonprofit and Voluntary Sector Quarterly*, Vol. 41 No. 6, pp. 929-968.
- Bagozzi, R.P. and Yi, Y. (1988), "On the evaluation of structural equation models", *Journal of the Academy of Marketing Science*, Vol. 16 No. 1, pp. 74-94.
- Bansal, P. and Song, H.C. (2017), "Similar but not the same: differentiating corporate sustainability from corporate responsibility", *Academy of Management Annals*, Vol. 11 No. 1, pp. 105-149.

- Bengtsson, M. and Kock, S. (2014), "Coopetition—quo vadis? Past accomplishments and future challenges", *Industrial Marketing Management*, Vol. 43 No. 2, pp. 180-188.
- Bengtsson, M. and Raza-Ullah, T. (2016), "A systematic review of research on coopetition: toward a multilevel understanding", *Industrial Marketing Management*, Vol. 57, pp. 23-39.
- Bhattacharyya, A. and Cummings, L. (2014), "Attitudes towards environmental responsibility within Australia and India: a comparative study", *Journal of Environmental Planning and Management*, Vol. 57 No. 5, pp. 769-791.
- Bouncken, R.B. and Fredrich, V. (2012), "Coopetition: performance implications and management antecedents", *International Journal of Innovation Management*, Vol. 16 No. 5, pp. 1-28.
- Bouncken, R.B. and Fredrich, V. (2016a), "Learning in coopetition: alliance orientation, network size, and firm types", *Journal of Business Research*, Vol. 69 No. 5, pp. 1753-1758.
- Bouncken, R.B. and Fredrich, V. (2016b), "Business model innovation in alliances: successful configurations", *Journal of Business Research*, Vol. 69 No. 9, pp. 3584-3590.
- Bouncken, R.B., Fredrich, V., Ritala, P. and Kraus, S. (2018), "Coopetition in new product development alliances: advantages and tensions for incremental and radical innovation", *British Journal of Management*, Vol. 29 No. 3, pp. 391-410.
- Bouncken, R.B., Fredrich, V., Ritala, P. and Kraus, S. (2020), "Value-creation-capture-equilibrium in new product development alliances: a matter of coopetition, expert power, and alliance importance", *Industrial Marketing Management*, Vol. 90, pp. 648-662.
- Brown, K., Schirmer, J. and Upton, P. (2021), "Regenerative farming and human wellbeing: are subjective wellbeing measures useful indicators for sustainable farming systems?", *Environmental and Sustainability Indicators*, Vol. 11, 100132.
- Christ, K.L., Burritt, R.L. and Varsei, M. (2017), "Coopetition as a potential strategy for corporate sustainability", *Business Strategy and the Environment*, Vol. 26 No. 7, pp. 1029-1040.
- Christmas, J. and Webster, P. (2016), "How Australia compares", available at: <http://aamc.org.au/faq-items/aamc-report-how-australia-compares/> (accessed 5 July 2021).
- Crick, J.M. and Crick, D. (2021), "Coopetition and sales performance: evidence from non-mainstream sporting clubs", *International Journal of Entrepreneurial Behavior and Research*, Vol. 27 No. 1, pp. 123-147.
- Crick, J.M. and Crick, D. (2023), "With a little help from my friends: the interaction between coopetition, an entrepreneurial orientation and firm performance", *International Journal of Entrepreneurial Behavior & Research*, Vol. 29 No. 4, pp. 965-985.
- Crick, J.M., Crick, D. and Chaudhry, S. (2023), "Interfirm collaboration as a performance-enhancing survival strategy within the business models of ethnic minority-owned urban restaurants affected by COVID-19", *International Journal of Entrepreneurial Behavior and Research*, Vol. 29 No. 3, pp. 587-613.
- Cygler, J., Sroka, W., Solesvik, M. and Debkowska, K. (2018), "Benefits and drawbacks of coopetition: the roles of scope and durability in cooperative relationships", *Sustainability*, Vol. 10 No. 8, pp. 2688-2711.
- Deist, M.K., McDowell, W.C. and Bouncken, R.B. (2023), "Digital units and digital innovation: balancing fluidity and stability for the Creation, Conversion, and Dissemination of sticky knowledge", *Journal of Business Research*, Vol. 161, 113827.
- Depeyre, C. and Dumez, H. (2010), "The role of architectural players in coopetition: the case of the US defense industry", *Coopetition: Winning Strategies for the 21st Century*, pp. 124-141.
- Dowling, M.J., Roering, W.D., Carlin, B.A. and Wisnieski, J. (1996), "Multifaceted relationships under coopetition: description and theory", *Journal of Management Inquiry*, Vol. 5 No. 2, pp. 155-167.
- Eesley, C. and Lenox, M.J. (2006), "Firm responses to secondary stakeholder action", *Strategic Management Journal*, Vol. 27 No. 8, pp. 765-781.

- Fernandez, A.S. and Chiambaretto, P. (2016), "Managing tensions related to information in coopetition", *Industrial Marketing Management*, Vol. 53, pp. 66-76.
- Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.
- Freeman, R.E. (1984), *Strategic Management: A Stakeholder Approach*, Pitman, Boston.
- Freeman, E. and Moutchnik, A. (2013), "Stakeholder management and CSR: questions and answers", *uwf UmweltWirtschaftsForum*, Vol. 21 Nos 1-2, pp. 5-9.
- Gibassier, D. (2015), "The corporate reporting landscape: a market for virtue or the virtue of marketization?", *Sustainability Accounting, Management and Policy Journal*, Vol. 6 No. 4, pp. 527-536.
- Gnyawali, D.R. and Park, B.J.R. (2009), "Co-opetition and technological innovation in small and medium-sized enterprises: a multilevel conceptual model", *Journal of Small Business Management*, Vol. 47 No. 3, pp. 308-330.
- Gnyawali, D.R. and Park, B.J.R. (2011), "Co-opetition between giants: collaboration with competitors for technological innovation", *Research Policy*, Vol. 40 No. 5, pp. 650-663.
- Grayson (2007), "Business-led corporate responsibility coalitions: learning from the example of business in the community in the UK", available at: <https://dspace.lib.cranfield.ac.uk/bitstream/1826/3428/1/Engaging-Business-in-the-Community-not-a-quick-fix-2007.pdf> (accessed 25 October 2021).
- Henseler, J., Ringle, C.M. and Sarstedt, M. (2015), "A new criterion for assessing discriminant validity in variance-based structural equation modeling", *Journal of the Academy of Marketing Science*, Vol. 43 No. 1, pp. 115-135.
- Hörisch, J., Freeman, R.E. and Schaltegger, S. (2014), "Applying stakeholder theory in sustainability management: links, similarities, dissimilarities, and a conceptual framework", *Organization and Environment*, Vol. 27 No. 4, pp. 328-346.
- Ike, M., Donovan, J.D., Topple, C. and Masli, E.K. (2019), "The process of selecting and prioritising corporate sustainability issues: insights for achieving the Sustainable Development Goals", *Journal of Cleaner Production*, Vol. 236 No. 117661, pp. 1-32.
- Kemper, J., Schilke, O., Reimann, M., Wang, X. and Brettel, M. (2013), "Competition-motivated corporate social responsibility", *Journal of Business Research*, Vol. 66 No. 10, pp. 1954-1963.
- Kim, J. and Parkhe, A. (2009), "Competing and cooperating similarity in global strategic alliances: an exploratory examination", *British Journal of Management*, Vol. 20 No. 3, pp. 363-376.
- King, B. (2008), "A social movement perspective of stakeholder collective action and influence", *Business and Society*, Vol. 47 No. 1, pp. 21-49.
- Kostopoulos, K., Papalexandris, A., Papachroni, M. and Ioannou, G. (2011), "Absorptive capacity, innovation, and financial performance", *Journal of Business Research*, Vol. 64 No. 12, pp. 1335-1343.
- Kumar, A. and Dutta, S.K. (2017), "Tacit knowledge transfer in coopetition: an empirical investigation of the role of business group (BG) affiliation", *Journal of Strategy and Management*, Vol. 10 No. 4, pp. 453-468.
- Kumar, A., Kumar, R., Dutta, S.K., Kumar, R. and Mukherjee, A. (2017), "Reconceptualising co-opetition using text mining: inductive derivation of a consensual definition of the field (1996-2015)", *International Journal of Business Environment*, Vol. 9 No. 2, pp. 114-137.
- Kumar, A., Connell, J. and Bhattacharyya, A. (2020), "Co-opetition for corporate social responsibility and sustainability: drivers and success factors", *Sustainability Accounting, Management and Policy Journal*, Vol. 12 No. 6, pp. 1208-1238.

- Kumar, A., Connell, J. and Bhattacharyya, A. (2023), "Co-opetition, corporate responsibility and sustainability: why multi-dimensional constructs matter", *Social Responsibility Journal*, Vol. 19 No. 1, pp. 114-137.
- Larcker, D.F. and Rusticus, T.O. (2010), "On the use of instrumental variables in accounting research", *Journal of Accounting and Economics*, Vol. 49 No. 3, pp. 186-205.
- Lin, C.H., Yang, H.L. and Liou, D.Y. (2009), "The impact of corporate social responsibility on financial performance: evidence from business in Taiwan", *Technology in Society*, Vol. 31 No. 1, pp. 56-63.
- Luo, X., Rindfleisch, A. and Tse, D.K. (2007), "Working with rivals: the impact of competitor alliances on financial performance", *Journal of Marketing Research*, Vol. 44 No. 1, pp. 73-83.
- Luo, Z., Chen, X. and Wang, X. (2016), "The role of coopetition in low carbon manufacturing", *European Journal of Operational Research*, Vol. 253 No. 2, pp. 392-403.
- Manzhynski, S. and Figge, F. (2020), "Coopetition for sustainability: between organizational benefit and societal good", *Business Strategy and the Environment*, Vol. 29 No. 3, pp. 827-837.
- Marrewijk, M. (2003), "Concepts and definitions of CSR and corporate sustainability: between agency and communion", *Journal of Business Ethics*, Vol. 44 No. 2, pp. 95-105.
- Neville, B.A., Bell, S.J. and Whitwell, G.J. (2011), "Stakeholder salience revisited: refining, redefining, and refueling an underdeveloped conceptual tool", *Journal of Business Ethics*, Vol. 102 No. 3, pp. 357-378.
- Nieto, M.J. and Santamaría, L. (2007), "The importance of diverse collaborative networks for the novelty of product innovation", *Technovation*, Vol. 27 No. 6, pp. 367-377.
- Nunnally, J.C. (1978), *Psychometric Theory*, McGraw-Hill, New York.
- Peloza, J. and Papania, L. (2008), "The missing link between corporate social responsibility and financial performance: stakeholder salience and identification", *Corporate Reputation Review*, Vol. 11 No. 2, pp. 169-181.
- Pfeffer, J. and Salancik, G.R. (1978), *The External Control of Organizations: A Resource Dependence Approach*, Harper and Row, New York.
- Porter, M.E. and Kramer, M.R. (2006), "Strategy and society: the link between corporate social responsibility and competitive advantage", *Harvard Business Review*, Vol. 84 No. 12, pp. 78-92.
- Porter, M.E. and Kramer, M.R. (2011), "Creating shared value", *Harvard Business Review*, Vol. 89 Nos 1/2, pp. 62-77.
- Ritala, P. (2012), "Coopetition strategy—when is it successful? Empirical evidence on innovation and market performance", *British Journal of Management*, Vol. 23 No. 3, pp. 307-324.
- Saenz, C. (2019), "Building legitimacy and trust between a mining company and a community to earn social license to operate: a Peruvian case study", *Corporate Social Responsibility and Environmental Management*, Vol. 26 No. 2, pp. 296-306.
- Scandellius, C. and Cohen, G. (2016), "Sustainability program brands: platforms for collaboration and co-creation", *Industrial Marketing Management*, Vol. 57, pp. 166-176.
- Schachter, H.L. (2010), "Objective and subjective performance measures: a note on terminology", *Administration and Society*, Vol. 42 No. 5, pp. 550-567.
- SDG Compass (2015), "The SDG Compass: guide for business action on the SDGs", available at: <https://sdgcompass.org/> (accessed 20 September 2021).
- Sheehy, B. (2015), "Defining CSR: problems and solutions", *Journal of Business Ethics*, Vol. 131 No. 3, pp. 625-648.
- Thomas, L.C., Paimbeni, S. and Barton, H. (2013), "Entrepreneurial marketing within the French wine industry", *International Journal of Entrepreneurial Behavior and Research*, Vol. 19 No. 2, pp. 238-260.
- Van der Laan, G., Van Ees, H. and Van Witteloostuijn, A. (2008), "Corporate social and financial performance: an extended stakeholder theory, and empirical test with accounting measures", *Journal of Business Ethics*, Vol. 79 No. 3, pp. 299-310.

- Vilanova, M., Lozano, J.M. and Arenas, D. (2009), "Exploring the nature of the relationship between CSR and competitiveness", *Journal of Business Ethics*, Vol. 87 No. 1, pp. 57-69.
- Vishwanathan, P., van Oosterhout, H., Heugens, P.P., Duran, P. and Van Essen, M. (2020), "Strategic CSR: a concept building meta-analysis", *Journal of Management Studies*, Vol. 57 No. 2, pp. 314-350.
- Volschenk, J., Ungerer, M. and Smit, E. (2016), "Creation and appropriation of socio-environmental value in coopetition", *Industrial Marketing Management*, Vol. 57, pp. 109-118.
- Watenpugh, N. (2019), "How to create a successful partnership with your competition", *Forbes*, available at: <https://www.forbes.com/sites/forbessanfranciscocouncil/2019/07/29/how-to-create-a-successful-partnership-with-your-competition/#11f42c301df9> (accessed 25 October 2021).

Corresponding author

Ricarda Bouncken can be contacted at: bouncken@uni-bayreuth.de

No.	Item description	Standard factor loading	Cronbach's alpha ^d	Composite reliability (CR) $\geq 0.6^e$	Average variance extracted (AVE) $\geq 0.5^f$
<i>Coopetition in CRS^a (Cronbach's alpha = 0.86, Variance explained = 54.80%)</i>					
1	We collaborate (with competing firms) to achieve a common economic goal	0.700			
2	We collaborate (with competing firms) to achieve a common social goal	0.779			
3	We collaborate (with competing firms) to achieve a common environmental goal	0.789			
4	Integrating social, environmental and economic goals is important to us	0.817	0.86	0.89	0.55
5	Sustainability goals (e.g. economic, social and environmental) are achievable for firms in competitive-collaborations	0.737			
6	Active competition with our collaborators is important to us	0.653			
7	We prefer a partner (competitor) who possess complementary capabilities that directly contribute to firm's value and performance	0.692			
<i>Effective Power^b (Cronbach's alpha = 0.73, Variance explained = 54.93%)</i>					
1	The degree to which your firm requires resources from competing firms	0.729			
2	The extent to which your firm exercises control over resources when collaborating	0.729	0.73	0.80	0.61
3	The degree to which your firm needs to comply with its collaborating partners' demands	0.789			
4	The perceived relative bargaining position of your firm in collaborative negotiations	0.715			
<i>Legitimate Stake^c (Cronbach's alpha = 0.713, Variance explained = 63.81%)</i>					
1	The degree of shared vision (or goal commonality) in your firm's partnership	0.714			
2	The degree of shared risk in the joint investments (where applicable)	0.838	0.71	0.84	0.64
3	The degree of common legal concerns in your firm's partnerships (where applicable)	0.838			

Note(s): ^{a,b,c} Extraction Method: Principal Component Analysis. ^d Nunnally (1978), ^e Bagozzi and Yi (1988), ^f Fornell and Larcker (1981)

Source(s): Author's own work/creation

Table A1.
Factor loadings and
reliability of
independent variables

Table A2.
Factor loadings and
reliability of dependent
variables

No.	Item description	Standard factor loading	Cronbach's alpha ^c	Composite reliability (CR) ≥ 0.6 ^d	Average variance extracted (AVE) ≥ 0.5 ^e
<i>Financial Performance^a (Cronbach's alpha = 0.82, Variance explained = 64.48%)</i>					
1	Compare your firm's financial performance to that of competing firms in terms of growth in sales	0.836			
2	In terms of return on investment	0.794	0.82	0.85	0.69
3	In terms of market growth	0.816			
4	In terms of market share	0.765			
<i>Social Performance^b (Cronbach's alpha = 0.83, Variance explained = 50.04%)</i>					
1	Compare your firm's social performance to that of competing firms in terms of employee satisfaction	0.701			
2	In terms of customer satisfaction	0.789			
3	In terms of investor relations	0.623			
4	In terms of community relations	0.747	0.83	0.84	0.65
5	In terms of workplace (or workforce) diversity	0.709			
6	In terms of environmental stewardship	0.688			
7	In terms of human rights compliance	0.684			

Note(s): ^{a,b} Extraction Method: Principal Component Analysis. ^c Nunnally (1978), ^d Bagozzi and Yi (1988), ^e Fornell and Larcker (1981)
Source(s): Author's own work/creation

Table A3.
Discriminant validity –
Heterotrait-monotrait
(HTMT)^a criterion

	Heterotrait-monotrait value (HTMT) ≤ 0.85 ^a				
	Coopetition in CRS	Effective power	Legitimate stake	Financial performance	Social performance
1 Coopetition in CRS	–				
2 Effective Power	0.46	–			
3 Legitimate Stake	0.44	0.80	–		
4 Financial Performance	0.43	0.58	0.50	–	
5 Social Performance	0.52	0.57	0.61	0.71	–

Note(s): ^a HTMT criterions by Henseler *et al.* (2015)
Source(s): Author's own work/creation