Institutions and Economies
Vol. 17, No. 1, January 2025, pp. 29-55 https://doi.org/10.22452/IJIE.vol17no1.2

Contract Enforcement and Marketing Relationship Management: Effects of Digital and ICT Transformations

Aprillia Elly Kusumastuti,[a] Naili Farida,[b] and I Made Sukresna[c]

Abstract: *The development of the digital era makes transactions easier and more transparent, making it necessary to build new management for creating cooperation contracts between companies. This study aims to operationalise contract enforcement functions and confirm their impacts on improving inter-company relations. This research offers a new perspective on contract management and opportunism in business-to-business e-procurement through the marketplace. Transparency in online procurement would provide a view of the contingency of information technology (IT)-enabled interactions of the buyers' contract enforcement relationships on the opportunistic behaviours which will affect the marketing channel performance. From analysing the data collected from 97 producers, this study finds that contract enforcement has negative effects on opportunistic behaviour. Second, opportunistic behaviour also has negative effects on channel cooperative performance. Meanwhile, IT-enabled interactions moderate the effects of contract enforcement on opportunistic behaviour. Overall, contract enforcement and IT-enabled interactions improve channel cooperative performance because they can suppress opportunistic behaviour. This research enriches and adds insight into the pieces of literature on contract management by operationalising contract enforcement and IT-enabled interactions toward channel cooperative performance with digital platforms.*

Keywords: Contract enforcement; IT-enabled interactions; Opportunism; Channel cooperative performance; Marketing channels
JEL Classification: D86, O14, M31

[a] Corresponding author. Faculty of Economics and Business, Universitas Diponegoro, Semarang, Indonesia. *Email: aprilliaelly@students.undip.ac.id.* ORCID ID: 0000-0003-1417-8187
[b] Faculty of Social Science and Political Science, Universitas Diponegoro, Semarang, Indonesia. *Email: nailifarida@lecturer.undip.ac.id*. ORCID ID: 0000-00 01-8532-4984
[c] Faculty of Economics and Business, Universitas Diponegoro, Semarang, Indonesia. *Email: i.made.sukresna@live.undip.ac.id*. ORCID ID: 0000-0003-4419-4428

1. Introduction

Management in marketing channels is created to maximise shared value, regardless of initial power differences among firms (Carson & Ghosh, 2019). This underlies the development of efficiency theories, such as transaction cost economics (TCE), i.e., the desire to challenge the monopoly or power arguments commonly put forward in the price theory approach applied to industrial organisations (Carlton, 2020). Carson and Ghosh (2019) argue that efficiency is feasible in a frictionless environment characterised by complete contracts, in which the parties can commit to ex ante transfers and refrain from ex post opportunistic bargaining. In an incomplete contract environment, there is no guarantee that an efficient arrangement is acceptable to both parties (Eenmaa-Dimitrieva & Schmidt-Kessen, 2019).

Efficiency is a solution in business-to-business (B2B) relationships to improve marketing channel performance, especially during the Covid-19 pandemic. Businesses in Indonesia, especially lower middle-class businesses, have been hit hard by this condition. The digital sector still provides opportunities, especially the e-commerce sector. E-commerce transactions using shopping apps during Covid-19 increased by 51%. This has increased the volume of requests in e-commerce by five to ten times compared to before the pandemic (Behera, 2021). B2B e-commerce has the potential to grow rapidly due to the increasing procurement needs of companies. In several countries, such as China and the United States (US), B2B e-commerce has almost three times the number of transactions compared to business-to-consumer (B2C). The B2B market in Indonesia is predicted to reach US$21.3 billion by 2023 (ITA, 2022). This is because the pandemic has succeeded in changing conventional procurement into e-procurement that can be done online and more efficiently by using marketplaces.

E-procurement has the benefit of transparent, more economical prices with a faster process in the B2B context, as well as sales mechanisms, suppliers, and online procurement with a transparent pricing policy system. There is a continuous need, so online procurement is no different from conventional procurement, i.e., carried out regularly according to the company's needs. Therefore, the collaboration process involves transactions, negotiations, and B2B contracts to get the right quantity, quality, and price. There has been no previous research on contract enforcement to improve marketing channel performance in B2B e-procurement through the

marketplace, whereas it helps build trust, reduce transaction risks, enhance marketplace efficiency, and establish a reliable framework for conducting business transactions in offline and online marketing. By addressing this topic, businesses can create a more secure and conducive environment for B2B e-procurement, ultimately improving marketing channel performance. In addition, the Covid-19 pandemic has caused a greater need to work in social distancing conditions. Most organisations face significant problems and challenges in this situation, especially in procuring goods involving contracts. Therefore, it is also important to note that getting a contract is difficult even with direct contract enforcement, i.e., traditional face-to-face communication. An alternative to this condition is to rely on information technology (IT) -enabled interactions, which are expected to be able to suppress opportunistic behaviour in B2B relationships, thereby improving marketing channel performance.

The effectiveness of contractual management in inter-company relationships largely depends on contract enforcement, especially in developing countries (Burki et al., 2023). Cooperation between companies becomes formal when producers and distributors enter legal agreements (Zhu & Lai, 2019). Certain contracts describe the content of the cooperation, including defining roles, responsibilities, and the principles and procedures of cooperation. Thus, certain contracts govern subsequent cooperation and provide a specific binding structure for joint action (Luo, 2002; Schilke & Lumineau, 2018). Li et al. (2021) finds that contract terms protect against deviant behaviour from colleagues and encouraged coordination between parties to achieve expected performance. Research based on TCE theory sees contracts as legally binding safeguards that protect firms from opportunistic behaviour (Poppo & Zenger, 2002). Recent research has also discussed the important role of contract coordination and claims that the functions of securing and coordinating, or contract enforcement must be applied in the companies to improve performance (Schepker et al., 2014).

Various studies highlight the roles and responsibilities of channel members (Griffith & Zhao, 2015), minimise opportunistic behaviour, and facilitate future exchanges (Cavusgil et al., 2004). However, a previous study emphasises that contracts are insufficient to minimise negative behaviour in business relationships (Puni & Anlesinya, 2019). TCE shows many costs, such as the creation, control, and monitoring of contracts required (Ketokivi & Mahoney, 2020). Those costs are a consequence of contract enforcement,

which benefits co-management and channel member coordination (Soares & Mosquera, 2019). Contracts also have a downside, they can signal distrust and encourage opportunistic behaviour (Wang et al., 2022). Contracts can act as a double-edged sword while simultaneously exacerbating negative perceptions of unfairness in relationships (Chung et al., 2021), so the effectiveness of contract enforcement minimises opportunistic behaviour and increases cooperative relationships in marketing channels needs to be investigated.

Based on the study above, it can be illustrated that effective contract management can positively impact parties, such as increasing work relations and effectiveness and reducing opportunistic attitudes. However, in this era of digitalisation, IT technology used to provide convenience and transparency in testifying and studies in contract management in the procurement of goods are still not widely revealed and assessed. Therefore, this research offers a new perspective on contract management and opportunism in B2B e-procurement through the marketplace. Transparency in online procurement will provide a view of the contingency of IT-enabled interactions of the buyers' contract enforcement relationships on the opportunistic behaviours which will affect the marketing channel performance. Hence, the three research questions are: (1) how the contract enforcement approach affects the performance of marketing channels in B2B; (2) how the contract enforcement approach affects opportunistic behaviours; (3) how IT-enabled interactions moderate the relationship between the contract enforcement approach and opportunism.

2. Development of Theories and Hypotheses

2.1 Transaction cost economics in contract enforcement

TCE emphasises that contracts are important in managing inter-firm relationships (Poppo & Zhou, 2014). The role of the contract is on the safeguard side that protects the parties' interests (Poppo & Zenger, 2002). In addition to the security role, the contract also functions as a coordination mechanism that facilitates the parties' cooperation (Mesquita & Brush, 2008; Schepker et al., 2014). Li et al. (2021) claim that contracts, as a dual-function governance strategy, serve as both a safeguard tool to reduce transaction risk and a coordination tool to increase cooperation efficiency. The more complete the contract, the more effective the governance of the contract.

However, based on contract enforcement's different objectives and functions in inter-firm relations, contractual governance has been divided into two distinct constructs: contract control and contract coordination (Mesquita & Brush, 2008; Reuer & Ariño, 2007). Contract control determines what rights and obligations the parties to the contract have, enabling them to reduce appropriation issues, reduce moral hazard concerns, align different incentives, and monitor potential problems (Schilke & Lumineau, 2018). Contractual coordination refers to communicating and integrating the wishes and expectations of all transacting parties and setting priorities for the future. Providing guidelines for formal communication, reporting, and contractual coordination can reduce conflict and help meet various expectations (Faems et al., 2008).

2.2 Digitisation in business to business

Digital technology includes tools such as mobile and big data analytics, blockchain technology, the Internet of Things (IoT), and cloud computing. These technologies have reshaped the operations of most companies, enhanced collaboration, and drive the development of new business models to increase company profitability (Cane & Parra, 2020; Santoro et al., 2018). The use of digital solutions serves to store and share various types of information using networks through contact and information sharing between companies and mediate transactions of goods and services between companies. Digital technology is a market intermediary capable of storing, transmitting, processing, and displaying data collected from various sources (Rangaswamy et al., 2020). The use of big data facilitates connectivity between companies, offering high-quality information to share (Ojala et al., 2018).

The connectivity offered by digital solutions promotes organisational coordination within the supply chain, enhancing the alignment, linkage, and coordination of people, processes, information, knowledge, and strategies across the supply chain between all points of contact and influence to facilitate the flow of materials, money, information and knowledge that is efficient and effective in responding to customer needs (Stevens & Johnson, 2016). Adopting digital solutions can even encourage the creation of a digital ecosystem, leading to greater coordination among companies, including external partners, by developing collaborative inter-organisational practices,

strategies, and processes, and synchronising production processes (Flynn et al., 2010).

2.3 Opportunistic behaviour in cooperative relationships

According to TCE logic, opportunistic behaviour must exist in cooperative relationships (Williamson, 2010). The primary protection model states that companies implement a contractual protection function to protect against opportunism. In cooperative company relationships, efficient production requires transaction-specific assets (Araujo et al., 2003). As such, it is challenging to avoid investing in specialised assets that cannot be transferred to other relationships at no cost. The threat of appropriation increases because one party can take advantage of the vulnerability of a counterparty investing in a particular asset by extracting pseudo-rents from that investment. This makes contract-based monitoring indispensable as it protects investors' interests from exploitation. In a contractual relationship, the company exercises the rights conferred by the contract to carefully scrutinise or supervise the counterparty to ensure that behaviour conforms to agreed expectations. Strong and properly executed contracts are essential to achieve the desired results (Le Roux & Rothmann, 2013).

2.4 Hypotheses development

Contracts have a dual purpose in the relationship between distributors and manufacturers. Contracts benefit by defining relationships and establishing rules for sharing (Mooi & Gilliland, 2013; Schilke & Lumineau, 2018) and serving as a mechanism to regulate exchanges (Schilke & Lumineau, 2018; Cline & Williamson, 2019). When needed as an enforcement mechanism, contracts serve as signals to facilitate communication for channel partners to achieve the expected roles and benefits and also to deal with contingencies that arise (Brown & Crosno, 2019; Jap & Anderson, 2003; Liu & Çetinkaya, 2009). However, contracts are not absolute prohibitions against opportunism (Guo et al., 2020). In addition, contracts may have adverse effects that can lead to hostile relationships, create conflicts, and produce bad performance outcomes (Jacqueline et al., 2019). Distributors tend to do things opportunistically when contracts are used to enforce transaction-based interactions. Therefore, the following hypotheses are developed:

H1: *Contract enforcement has a negative effect on opportunism in transaction-based interactions.*

H2: *Opportunism has a negative effect on channel cooperative performance in transaction-based interactions.*

Contracts serve as a binding framework for further cooperation; joint actions between producers and distributors become much more efficient and thus improve performance. Particularly, according to the specified obligations, scope, and content of the work, manufacturers and distributors can plan ex ante each other and solve problems effectively and efficiently, which will improve the overall channel performance. Second, established shared expectations and joint actions will reduce information asymmetry and uncertainty, improving relationship outcomes (Dahlmann & Roehrich, 2019). Finally, certain contracts outline collective goals. To achieve common interests, producers and distributors will coordinate joint activities, allowing both to fulfil their own and collective interests, including profit and other goals. Thus, the following hypothesis is developed:

H3: *Contract enforcement positively affects channel cooperative performance in transaction-based interactions.*

Considering the information and communications technology (ICT) and Web 2.0 revolutions, companies have increasingly moved to digital platforms to communicate and interact with each other (Alalwan et al., 2021; Sussan & Acs, 2017). A variety of communication channels – both formal (e.g., email, video conferencing, corporate resource planning) and informal (e.g., social media such as Facebook, LinkedIn, Zoom, mobile calling, and messaging apps) – are available for business organisations to freely interact and communicate with one each other (Alalwa et al., 2017; Baabdullah et al., 2019; Dwivedi et al., 2021; Hosseini et al., 2019). By using such emerging digital tools and platforms to communicate, companies can have more efficient contact with each other. This, in turn, positively impacts coordination and cooperation among business partners (Marion & Fixson, 2021).

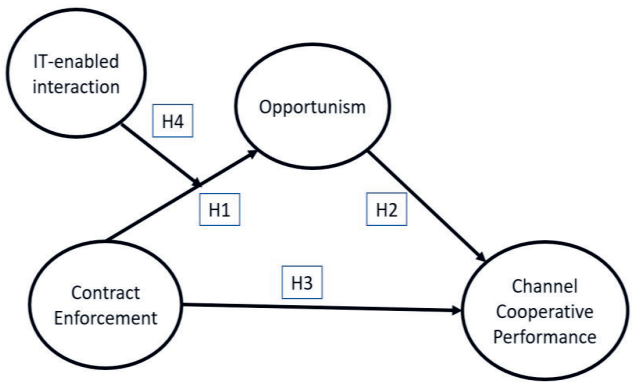
Many studies have found the contribution and value that can be added to B2B collaboration and coordination with greater reliance on IT-

supported interactions. This can be attributed to the important role of both types of IT-enabled interactions—formal and informal—in enhancing the capabilities and competencies of partners in processing and exchanging information and knowledge, leading to a greater understanding of each other's needs (Alalwan, 2018; Li et al., 2017). Furthermore, the role of IT-enabled interactions is not limited to facilitating the processing and exchange of information; it also sustains the level of trust between business partners, which helps reduce transaction costs and opportunistic behaviour. (Li et al., 2017; Lioliou et al., 2019; Shahab & Allam, 2019; Rindfleisch, 2020). Therefore, features related to IT-supported interactions, both formal and informal, can provide more opportunities for partners to have closer relationships stemming from greater mutual understanding (Alalwan et al., 2021). As a result, it helps contract enforcement. During the Covid-19 pandemic, organisations must rely on ICT and Web 2.0 to interact and communicate with each other. Given these issues, this study considers the effects of e-procurement on opportunistic behaviour and technological aspects in terms of IT-enabled interactions on both. Hence, the following hypothesis is proposed:

> *H4*: IT-enabled interactions moderate the effects of contract enforcement on opportunism in transaction-based interactions.

From the above discussion, the proposed conceptual model for this study is presented in Figure 1.

Figure 1: Proposed Conceptual Model



3. Research Method

This research was based on a survey conducted for two months on manufacturing and service e-commerce businesses in Indonesia, such as AXIQoe, Mbizmarket, Bhinneka, Alibaba, and Ralali. It was used as a research target because there is still relatively little empirical support for the digital procurement process (e-procurement) in terms of the performance of marketing channels.

According to Indotrading, there was an uptick in B2B e-commerce business in Indonesia during the pandemic, with the food and beverage category going up by 234.74%, factories and industries by 201.73%, chemical and health products by 186.49%, and personal protective equipment by 222.27%, since all purchasing activities were digital. This increased e-procurement activities by up to 380% compared to before the pandemic (Edy, 2021).

The sample was taken from users of e-commerce platforms who offered goods and services for resale purposes or procurement needs to corporate, institutional, and government clients (Table 1). Using the snowball sampling technique, 200 users of e-commerce platforms were asked to fill in an online questionnaire via Google Forms. The snowball sampling technique was used because the population of this study was difficult to access, therefore the sample was collected by utilising the relationship between members of the population. A total of 97 responses were accepted (out of 200), representing a response rate of 48.5%.

Table 1: Sample Information

Characteristic frequency			**Characteristic frequency**		
Industry	Food and beverage	30	Ownership	Self-owned	32
	Electrical and electronic manufacturing	10		Foreign-owned	21
	Textile and garment	18		State-owned	8
	Machinery manufacturing	4		Limited liability	30
	Medical and healthcare devices	35		Others	6
	Others	-			

Characteristic	frequency		Characteristic	frequency	
Sales revenue (million)	Less than 5	5	Relationship length (years)	Less than 2	64
	5–24.99	20		2–5	21
	25–49.99	17		5–10	12
	50–99.99	19		Over 10	-
	100–299.99	22	Respondent tenure (years)	Less than 2	8
	Over 300	14		2–5	25
				5–10	38
				Over 10	26

The survey instrument developed includes company background information. Various constructs informed measurement items. The survey instrument was piloted with experts before being sent to respondents. Survey items were identified from the literature and through collaboration with industry practitioners (see Appendix 1). Participants responded to questions on a five-point Likert scale, with 5 indicating total agreement and 1 indicating total disagreement; responses thus constitute their subjective evaluation of the organisations they represent.

Analysis of the research model to test the hypothesis was carried out using the path modelling approach of partial least squares (PLS) to achieve strong results because some level of distributional abnormality and collinearity of the observed variables occurred in the data, and the sample size was relatively small (Hair et al., 2019; Hair et al., 2014; Henseler et al., 2014). The complexity of the research model by supporting the path tested also used the PLS estimator for the structural model. Data non-normality could also be solved in covariance-based structural equation modelling, leading to much higher sample size requirements to achieve reliable results (Flora & Curran, 2004; Olsson et al., 2000). SmartPLS 3.0 was used for data analysis. Model testing on SEM-PLS was conducted in two stages: testing the measurement model (outer model) and structural model (inner model).

3.1 Measurement model

The measurement scale for the IT-supported interaction variable refers to improving the ability and competence of partners in processing and exchanging information and knowledge, leading to a greater understanding of each other's needs, extracted from the three formal interaction items

according to Li et al. (2017). Channel cooperative performance (PF) refers to the degree of exchange party behaviour that contributes to achieving relationship outcomes. Following previous research (Li et al., 2021; Ruekert & Churchill, 1984), the satisfaction of manufacturers with their distributors in terms of sales revenue, was measured by four items, profit or adaptation. Opportunistic behaviour using a scale adapted from Jap and Anderson (2003) measured the producer's perception of the opportunistic behaviour of distributors (OP) by using three items. The contract enforcement measured in this study adapts the contractual control measurements of Antia and Frazier (2001) and Wang et al. (2019), which assesses the degree to which the buyer fulfils the contract and the severity of the buyer's disciplinary response to the breach of the seller's contract to protect his interests, and was measured using four items.

Measurement model testing consists of construct validity and reliability tests. The validity test consists of convergent validity and discriminant validity. Convergent validity is used to assess correlations between two measures of the same concept. The loading factor value calculates the reflective construct convergent validity measurement, while the average variance extracted (AVE) value is the sum of the standard squared factor divided by the number of measurement items. Convergent validity requires a loading factor value of 0.7, and the AVE value must be higher than 0.5 (Hair et al., 2019). While the validity of the discriminant is measured by comparing the AVE value of the two constructs with the square of the correlation between the two tested constructs, discriminant validity is an assessment of how different one construct is from another. According to the Fornell-Larcker criterion (Fornell & Larcker, 1981), the square root of the AVE value of each construct must be higher than the correlation value between constructs in a model. Reliability tests determine the consistency of measurement results if measurements are made twice or more against the same symptoms with the same measuring instrument and a Cronbach's alpha higher than 0.7, although 0.6 is still acceptable (Hair et al., 2019).

3.2 Structural model

The structural model in this study was conducted to predict the causality relationship between latent variables. The parameters used for model testing are R^2 and predictive relevance models. A high R^2 value reflects a better

research model, while Q^2 indicates the level of model results and good parameter estimation from the observations made. The path coefficient (inner model) value indicates the degree of significance in hypothesis testing. The loading rule of the path coefficient value indicated by the *t*-statistic value must be greater than 1.96 for a two-sided hypothesis in hypothesis testing using 5% alpha (Hair et al., 2019). A moderation variable is a variable that affects the relationship between the independent variable and the dependent variable. In this study, the moderation variable is IT-enabled interactions (M). To test IT-enabled interactions as a variable moderating the influence of contract enforcement on opportunism, the interaction coefficient between IT-enabled interactions and opportunism was chosen as the focus. A variable can be considered a moderation variable if the value of *t* is significantly smaller equal to 0.05 (Hair et al., 2019).

4. Results and Discussion

4.1 Validity and reliability of the measurement model

A full collinearity test was carried out to measure the common method bias, i.e., a comprehensive procedure for simultaneously assessing vertical and lateral collinearity simultaneously (Kock, 2015). Variance inflation factors (VIFs) for all latent variables in the model, if the occurrence of VIF was greater than 3.3, then it was proposed to indicate that the model might be contaminated by common method bias (Kock, 2017). Based on the VIF obtained for the latent variable in the model, there was no latent variable with a VIF greater than 3.3. Therefore, it could be assumed that there was no standard method bias in the data set. Measurement models were validated related to their reliability of internal consistency, convergent validity of the factor structure, and discriminant validity (Gefen & Straub, 2005; Hair et al., 2019; Henseler et al., 2009).

Construct reliability (CR) analysis was applied to evaluate the reliability of the measurement and average variance extracted (AVE) to assess the variance captured from the latent construct (Fornell & Larcker, 1981). The critical value for the CR coefficient was at CR over 0.50, i.e., indicated acceptable reliability if the overall model validity was adequate (Kline, 2011). The reliability measurements in Table 2 showed promising results for all latent variables, where the CR varied from high to a very high category,

i.e., from 0.861 to 0.915. An analysis was done to validate the structural factors, related to significance, weight of factor loadings, and cross-loadings between latent factors.

Table 2: Reliability Measurement

	Loading	***t*-value**	***p*-value**	**Mean**	**SD**	**CR**	**AVE**
CSE						0.867	0.62
CSE1	0.729	4.329	****	4.165	0.775		
CSE2	0.828	14.208	****	4.072	0.692		
CSE3	0.820	15.174	****	4.268	0.78		
CSE4	0.768	6.328	****	4.082	0.775		
PF						0.889	0.666
PF1	0.830	14.893	****	4.093	0.782		
PF2	0.792	11.170	****	4.072	0.865		
PF3	0.808	11.489	****	3.959	0.848		
PF4	0.834	9.005	****	4.062	0.701		
IT						0.861	0.675
IT1	0.870	23.251	****	4.082	0.865		
IT2	0.765	6.063	****	4.371	0.773		
IT3	0.827	12.848	****	4.021	0.774		
OP						0.915	0.843
OP1	0.916	26.367	****	4.113	0.772		
OP3	0.920	30.315	****	4.052	0.709		

Notes: [n] Not significant. * Statistically significant at $p < 0.1$; **Statistically significant at $p < 0.05$; ***Statistically significant at $p < 0.01$; ****Statistically significant at $p < 0.001$

For the measurement model, all factor loadings higher than 0.70 were found to be significant ($p < 0.001$), i.e., where the weights varied from 0.729 to 0.843. Hair et al. (2019) explain that composite reliability should be higher than 0.7, in exploratory research from 0.60 to 0.70 is considered acceptable. AVE showed convergent validity that could be accepted for all latent factors, where all concepts reached a critical value of AVE > 0.50 (Fornell & Larcker, 1981). At the last phase, the discriminant validity of the model was estimated to ensure the empirical uniqueness of each latent construct when the captured variance was not represented by other constructs (Hair et al., 2019) by applying cross-loadings of the measurement items, the square root of the AVE (Fornell-Larcker criterion) and the heterotrait-

monotrait ratio of correlations (HTMT) for that purpose (Gefen & Straub, 2005; Hair et al., 2019).

The Fornell-Larcker criterion assesses the level of shared variance between constructs, while the HTMT contrasts indicator correlations between constructs in the model (Hair et al., 2019). All measurement items showed high loading for latent variables and cross-loading at a moderate level, i.e., less than 0.338. The discriminant validity of the measurement model was also interpreted well. The Fornell-Larcker criterion indicated that the square root of the AVE was significantly higher than any of the correlations between the latent factors. The HTMT ratio did not exceed the critical limit of 0.85 for conceptually different constructs varying from 0.729 to 0.92 (Hair et al., 2019).

4.2 Partial least squares model

Analysis of the main effect in the model was indicated by H1 to H4 (Table 3) in which the bootstrap sample is n = 97, i.e., the same as the original sample. Data resampling was repeated 5,000 times (basic bootstrapping) in the analysis, which would be sufficient to estimate the parameters in the model (Henseler et al., 2009; Kline, 2011). The quality of the structural model was tested and validated through the following steps: collinearity issues and overall fit, explanatory power, and path significances.

Table 3: Structural Model to Test the Primary Hypothesis and Post Hoc Tests

Hypothesis	Effect	Path	*β*	*t*-statistic	*p*-values
		The main effect of the research model			
H1	Direct	CSE ⟶ OP	0.094	3.364	0.001
H2	Direct	OP ⟶ PF	0.113	4.537	0.000
H3	Direct	CSE ⟶ PF	0.118	3.029	0.003
H4	Direct	IT ⟶ OP	0.072	6.213	0.000
	Direct	Z ⟶ OP	0.041	1.339	0.102
		Post hoc tests			
	Indirect	CSE ⟶ PF	0.056	2.879	0.004
		IT ⟶ PF	0.067	3.420	0.001
		Z ⟶ PF	0.022	1.317	0.189[n]

Notes: [n] Not significant. * Statistically significant at $p < 0.1$; **Statistically significant at $p < 0.05$; ***Statistically significant at $p < 0.01$; ****Statistically significant at $p < 0.001$

Collinearity assessment and model fitted the data to validate the structural model, which provided information about potential misspecification problems. The VIF of the latent construct did not show a collinearity problem where the value (VIF = 1,000–1.164) remains clearly below the critical value of 5. In testing the hypothesis, it was necessary to assess the overall fit of the structural model using the standardised root mean square residual (SRMR, critical value < 0.08) and root mean square residual covariance (RMS theta, critical value > 0.12) to determine the estimation error and model specification error (Cepeda-Carrion et al., 2019; Henseler et al., 2014). The model fit of this study showed SRMR = 0.086 and RMS theta = 0.233, in which the structural model specification error did not occur. The explanatory power of a model sample could be assessed by: the proportion of explained variance of the endogenous variable (R^2), which was an indicator for the variance captured into the latent construct. The R^2 for latent variable in path model were FP = 0.676 and OP = 0.741, indicating a sufficient level of explanation, despite the relatively low sample, including various influences outside the model tested (Abelson, 1985; Prentice & Miller, 1992). Furthermore, the predictive relevance measured by f^2 for each endogenous construct was positive, CSE = 0.160, IT = 0.344, and OP = 0.325, indicating a sufficient level of explanatory power in the sample and out-of-sample predictions of the model on the phenomenon and from the aspect of generalisation of the results (Hair et al., 2019).

The path model tested (Table 3) showed that contract enforcement significantly affected opportunism behaviour confirming H1. Opportunistic behaviour significantly influenced channel cooperative performance, confirming the assumptions presented in H2 that support the findings of the previous literature. From the results of this study, contract enforcement directly affected the cooperative performance of the channel supporting H3. The IT-enabled interactions also influenced the opportunistic behaviour that supports H4. The moderating effect showed that CSE x OP (Z) was significant. It can be concluded that IT-enabled interactions could moderate the effect of enforcement on opportunistic behaviour.

Post hoc tests considered the indirect effects to confirm the overall validity of the model structure. This procedure was necessary because PLS did not provide an established global match measure. The test confirmed the overall structure of the research model. In conclusion, the results showed that contract enforcement affected channel cooperative performance through opportunistic behaviour.

5. Discussion

This study answers the question of intercompany management in a B2B context that considers the importance of producer and distributor relationships. How contract enforcement affects opportunistic behaviour depends on IT-enabled interactions between companies. This research makes a substantial theoretical contribution by providing an in-depth understanding of contractual governance in three aspects. First, this study offers new insights into contractual governance research by analysing the impact of contract enforcement on producer-distributor relationships. Previous studies have tried to explain the effect of contract enforcement in inter-firm relationships (Kashyap et al., 2012; Shen et al., 2019; Wang et al., 2021). Moreover, although recent studies have examined the effect of contract enforcement (as an aggregate) on opportunism in franchise channel relationships (Kashyap et al., 2012; Wang et al., 2021), this study takes a different approach to the unidimensional construct of contract enforcement influencing opportunism in producer and distributor relationships through digital platforms.

Second, this study develops and examines contextual theory by taking the influence of digital technology on the governance of transactional relationships between producers and distributors who work together through digital platforms (marketplaces). The role of IT-enabled interactions is not limited to facilitating the processing and exchange of information; rather, it also sustains the level of trust between business partners, which helps reduce transaction costs and reduce opportunistic behaviour (Li et al., 2017; Wang & Wei, 2007). The finding in this study is that IT-enabled interactions can moderate the effect of contract enforcement on opportunistic behaviour, which is supported by Yadav and Pavlou (2020), that investigate and give a framework to integrate research in marketing and information systems to provide guideposts for envisioning future research trajectories. The adoption of digital solutions can drive the creation of a digital ecosystem, leading to greater coordination among companies, including external partners, with whom to develop collaborative inter-organisational practices, strategies, and processes, and synchronise production processes (Subramaniam, 2020; Verhoef et al., 2021; Veile et al., 2022). However, the digital interactions should be more transparent, accurate, and accountable to suppress opportunism.

Third, the findings of this study of contract enforcement have a direct effect on the performance of channel cooperative. This indicates that the contract serves as a binding framework for further cooperation in which joint action between producers and distributors becomes much more efficient and thus improves performance. According to the defined obligations and the scope and content of the work, manufacturers and distributors can plan ex ante with each other and solve problems effectively and efficiently, improving the overall channel output. Second, established shared expectations and joint actions will reduce information asymmetry and uncertainty, improving relationship outcomes (Aben et al., 2021). Finally, certain contracts outline collective goals. Producers and distributors will carry out coordinated joint activities to achieve common interests. Thus, both will fulfil their own and collective interests, including profits and other goals.

6. Conclusion

This study contributes by further highlighting an important phenomenon that considers new aspects concerning the antecedents and consequences of opportunistic behaviour in B2B relationships. Thus, this study has broadened the understanding of the role of contract enforcement in the business relationships built and maintained to improve the performance of channel cooperative in the context of B2B e-commerce in Indonesia. In addition, this study has broadened the theoretical horizons of contract enforcement by considering a new mechanism, namely, IT-enabled interactions capable of suppressing opportunistic behaviour. The influence of information systems and information and communications technology (ICT) in facilitating the interaction of business partners is very large. This study has explained the role of IT-enabled interactions in contract enforcement that can minimise opportunistic behaviour. The existence of ICT facilitates transactions, shares information, collaborates via digital without having to meet in person, and maintains cooperative relationships with partners.

7. Limitations

This study has some limitations and suggestions for future research. First, the data are based on the producer's perceptions, which do not represent the distributor's perceptions. Although producers as a unit of analysis can

provide insight into what they believe is relevant and important, future research should consider collecting dyadic data from key variables to cross-validate the results. In future research, data collection may also be from various sources to ensure random sampling and add external validity to generalisations.

Second, the survey method for studying the contract function can only capture a brief overview of the effect of the contract function. Longitudinal data collection may be more appropriate to document the causal process in the relationship between the parties because the process will be observed over time. Future research can broaden the understanding of the contract function using qualitative methods.

Third, a promising avenue for future research to explore types of contracts other than behaviour-based and an area worth investigating is the function of different types of contracts, such as performance-based contracts. Finally, this study is limited by data collected from a single setting, and findings may depend on context. In particular, the data were collected in Indonesia, so the main findings about dual function may not be generalisable to other contexts.

References

Abelson, R. P. (1985). A variance explanation paradox: When a little is a lot. *Psychological Bulletin*, *97*(1), 129–133. https://doi.org/10.1037/0033-2909.97.1.129

Aben, T.A.E., van der Valk, W., Roehrich, J. K., & Selviaridis, K. (2021). Managing information asymmetry in public–private relationships undergoing a digital transformation: The role of contractual and relational governance. *International Journal of Operations and Production Management*, *41*(7), 1145–1191. https://doi.org/10.1108/IJOPM-09-2020-0675

Alalwan, A. A. (2018). Investigating the impact of social media advertising features on customer purchase intention. *International Journal of Information Management*, *42*, 65–77. https://doi.org/10.1016/j.ijinfomgt.2018.06.001

Alalwan, A. A., Baabdullah, A. M., Dwivedi, Y. K., Rana, N. P., Lal, B., & Raman, R. (2021). Et-moone and marketing relationship governance: The effect of digital transformation and ICT during the Covid-19

pandemic. *Industrial Marketing Management*, *98*, 241–254. https://doi.org/10.1016/j.indmarman.2021.09.001

Antia, K. D., & Frazier, G. L. (2001). The severity of contract enforcement in interfirm channel relationships. *Journal of Marketing*, *65*(4), 67–81. https://doi.org/10.1509/jmkg.65.4.67.18385

Araujo, L., Dubois, A., & Gadde, L. E. (2003). The multiple boundaries of the firm. *Journal of Management Studies*, *40*(5), 1255–1277. https://doi.org/10.1111/1467-6486.00379

Baabdullah, A. M., Alalwan, A. A., Rana, N. P., Kizgin, H., & Patil, P. (2019). Consumer use of mobile banking (M-Banking) in Saudi Arabia: Towards an integrated model. *International Journal of Information Management*, *44*, 38–52. https://doi.org/10.1016/j.ijinfomgt.2018.09.002

Behera, R. (2021). Indonesia e-commerce metamorphosis in a post-Covid world. *Redseer*. https://redseer.com/reports/indonesia-ecommerce-metamorphosis-in-a-post-covid-world-2/

Brown, J. R., & Crosno, J. L. (2019). Process and output control in marketing channels: Toward understanding their heterogeneous effects. *Journal of Business and Industrial Marketing*, *34*(4), 735–753. https://doi.org/10.1108/JBIM-05-2017-0110

Burki, U., Glavee-Geo, R., Dahlstrom, R. Kanani, R., & Buvik, A. (2023). The moderating effect of market knowledge on contractual efficacy: Evidence from Asian supplier–Western buyer relationships. *Asian Business and Management*, *22*, 1454–1484. https://doi.org/10.1057/s41291-022-00214-1

Cane, M., & Parra, C. (2020). Digital platforms: Mapping the territory of new technologies to fight food waste. *British Food Journal*, *122*(5), 1647–1669. https://doi.org/10.1108/BFJ-06-2019-0391

Carlton, D. W. (2020). Transaction costs and competition policy. *International Journal of Industrial Organisation*, *73*, 102539. https://doi.org/10.1016/j.ijindorg.2019.102539

Carson, S. J., & Ghosh, M. (2019). An integrated power and efficiency model of contractual channel governance: Theory and empirical evidence. *Journal of Marketing*, *83*(4), 101–120. https://doi.org/10.1177/0022242919843914

Cavusgil, S. T., Deligonul, S., & Zhang, C. (2004). Curbing foreign distributor opportunism: An examination of trust, contracts, and the legal environment in international channel relationships. *Journal*

of International Marketing, *12*(2), 7–27. https://doi.org/10.1509/jimk.12.2.7.32902

Cepeda-Carrion, G., Cegarra-Navarro, J.-G., & Cillo, V. (2019). Tips to use partial least squares structural equation modelling (PLS-SEM) in knowledge management. *Journal of Knowledge Management*, *23*(1), 67–89. https://doi.org/10.1108/JKM-05-2018-0322

Chung, S., Kwon, H., Bae, J., & Lee, J. (2021). A double-edged sword of strong ties. *Journal of Asian Sociology*, *50*(1), 33–54. https://doi.org/10.21588/dns.2021.50.1.003

Cline, B. N., & Williamson, C. R. (2019) Trust, regulation, and contracting institutions. *European Financial Management*, *26*(4), 859–895. https://doi.org/10.1111/eufm.12253

Dahlmann, F., & Roehrich, J. K. (2019). Sustainable supply chain management and partner engagement to manage climate change information. *Business Strategy and the Environment*, *28*, 1632–1647. https://doi.org/10.1002/bse.2392

Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., Eirug, A., Duan, Y., Dwived, R., Edwards, J., Eirug, A., Galanos, V., Ilavarasan, P. V., Janssen, M., Jones, P., Kar, A. K., Kizgin, H., Kronemann, B., Lal, B., Lucini, B. …Williams, M. D. (2021). Artificial intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*, *57*, 101994. https://doi.org/10.1016/j.ijinfomgt.2019.08.002

Edy, S. (2021, June 21). Indotrading.com: Bisnis E-commerce B2B di Indonesia tumbuh di masa pandemi Covid-19. *INAnews*. https://www.inanews.co.id/2021/06/indotrading-com-bisnis-e-commerce-b2b-di-indonesia-tumbuh-di-masa-pandemi-covid-19/

Eenmaa-Dimitrieva, H., & Schmidt-Kessen, M. (2019). Smart contracts: Reducing risks in economic exchange with no-party trust? *European Journal of Risk Regulation*, *10*(2), 245–262. https://doi.org/10.1017/err.2019.37

Faems, D., Janssens, M., Madhok, A., & Looy, B. V. (2008). Toward an integrative perspective on alliance governance: Connecting contract design, trust dynamics, and contract application. *Academy of Management Journal*, *51*(6), 1053–1078. https://doi.org/10.5465/amj.2008.35732527

Flora, D. B., & Curran, P. J. (2004). An empirical evaluation of alternative methods of estimation for confirmatory factor analysis with ordinal data. *Psychological Methods*, *9*(4), 466–491. https://doi.org/10.1037/1082-989X.9.4.466

Flynn, B. B., Huo, B., & Zhao, X. (2010). The impact of supply chain integration on performance: A contingency and configuration approach. *Journal of Operations Management*, *28*(1), 58–71. https://doi.org/10.1016/j.jom.2009.06.001

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, *18*(3), 382–388. https://doi.org/10.2307/3150980

Gefen, D., & Straub, D. (2005). A practical guide to factorial validity using PLS-Graph: Tutorial and annotated example. *Communications of the Association for Information Systems*, *16*(5), 91–109. https://doi.org/10.17705/1CAIS.01605

Griffith, D. A., & Zhao, Y. (2015). Contract specificity, contract violation, and relationship performance in international buyer–supplier relationships. *Journal of International Marketing*, *23*(3), 22–40. https://doi.org/10.1509/jim.14.0138

Guo, W., Yang, J., Li, D., & Lyu, C. (2020) Knowledge sharing and knowledge protection in strategic alliances: The effects of trust and formal contracts. *Technology Analysis and Strategic Management*, *32*(11), 1366–1378. https://doi.org/10.1080/09537325.2020.1769840

Hair, J.F., Sarstedt, M., Hopkins, L. & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review*, *26*(2), 106–121. https://doi.org/10.1108/EBR-10-2013-0128

Hair, J.F., Risher, J.J., Sarstedt, M. & Ringle, C.M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Henseler, J., Dijkstra, T. K., Sarstedt, M., Ringle, C. M., Diamantopoulos, A., Straub, D. W., Ketchen, D. J., Hair, J. F., Hult, G. T. M., & Calantone, R. J. (2014). Common beliefs and reality about PLS: Comments on Rönkkö and Evermann (2013). *Organisational Research Methods*, *17*(2), 182-209. https://doi.org/10.1177/1094428114526928

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In R. R. Sinkovics & P. N. Ghauri (Eds.), *New challenges to international marketing* (pp. 277–319). Emerald. https://doi.org/10.1108/S1474-7979(2009)20

Hosseini, S., Fallon, G., Weerakkody, V., & Sivarajah, U. (2019). Cloud computing utilisation and mitigation of informational and marketing barriers of the SMEs from the emerging markets: Evidence from Iran and Turkey. *International Journal of Information Management*, *46*, 54–69. https://doi.org/10.1016/j.ijinfomgt.2018.11.011

International Trade Administration (ITA) (2022). Indonesia e-commerce sectors. *ITA*. https://www.trade.gov/market-intelligence/indonesia-e-commerce-sectors

Jacqueline A.-M. S., Costa, S. P., Doden, W., Chang, C. (2019). Psychological contracts: Past, present, and future. *Annual Review of Organisational Psychology and Organisational Behaviour*, *6*(1), 145–169. https://doi.org/10.1146/annurev-orgpsych-012218- 015212

Jap, S. D., & Anderson, E. (2003). Safeguarding interorganizational performance and continuity under ex post opportunism. *Management Science*, *49*(12), 1684–1701. http://doi.org/10.2139/ssrn.423040

Kashyap, V., Antia, K. D., & Frazier, G. L. (2012). Contracts, extracontractual incentives, and ex post behaviour in franchise channel relationships. *Journal of Marketing Research*, *49*(2), 260–276. https://doi.org/10.1509/jmr.10.0337

Ketokivi, M., & Mahoney, J.T. (2020). Transaction cost economics as a theory of supply chain efficiency. *Production and Operations Management*, *29*(4), 1011–1031. https://doi.org/10.1111/poms.13148

Kline, R. (2011). Convergence of structural equation modeling and multilevel modeling. *Sage*. https://doi.org/10.4135/9781446268261

Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration*, *11*(4), 1–10. http://doi.org/10.4018/ijec.2015100101

Kock, N. (2017). Common method bias: A full collinearity assessment method for PLS-SEM. In H. Latan & R. Noonan (Eds.), *Partial Least Squares Path Modeling* (pp. 245–257). Springer. https://doi.org/10.1007/978-3-319-64069-3_11

Le Roux, C. H., & Rothmann, S. (2013). Contractual relations between employers and employees in an HEI: Individual and organisational outcomes. *South African Journal of Higher Education*, *27*(4), 900–919. https://doi.org/10.20853/27-4-276

Li, M., Wang, X., Gao, K., & Zhang, S. (2017). A survey on information diffusion in online social networks: Models and methods. *Information*, *8*(4), 118. https://doi.org/10.3390/info8040118

Li, R., Feng, C., & Zhuang, G. (2021). Safeguarding or coordinating? Unfolding the dual-function of contracts in manufacturer-distributor relationships. *Industrial Marketing Management*, *98*, 69–79. https://doi.org/10.1016/j.indmarman.2021.07.011

Li, S., Kang, M., & Haney, M. H. (2017). The effect of supplier development on outsourcing performance: The mediating roles of opportunism and flexibility. *Production Planning and Control*, *28*(6-8), 599–609. https://doi.org/10.1080/09537287.2017.1309711

Lioliou, E., Willcocks, L., & Liu, X. (2019). Researching IT multi-sourcing and opportunistic behaviour in conditions of uncertainty: A case approach. *Journal of Business Research*, *103*, 387–398. https://doi.org/10.1016/j.jbusres.2019.04.002

Liu, X., & Çetinkaya, S. (2009). Designing supply contracts in supplier vs buyer-driven channels: The impact of leadership, contract flexibility and information asymmetry. *IIE Transactions*, *41*(8), 687–701. https://doi.org/10.1080/07408170902789019

Luo, Y. (2002). Capability exploitation and building in a foreign market: Implications for multinational enterprises. *Organisation Science*, *13*(1), 48–63. https://doi.org/10.1287/orsc.13.1.48.538

Marion, T. J., & Fixson, S.K. (2021). The transformation of the innovation process: How digital tools are changing work, collaboration, and organisations in new product development. *Journal of Product Innovation Management*, *38*, 192–215. https://doi.org/10.1111/jpim.12547

Mesquita, L. F., & Brush, T. H. (2008). Untangling safeguard and production coordination effects in long-term buyer-supplier relationships. *Academy of Management Journal*, *51*(4), 785–807. https://doi.org/10.5465/AMJ.2008.33665612

Mooi, E. A., & Gilliland, D. I. (2013). How contracts and enforcement explain transaction outcomes. *International Journal of Research in Marketing*, *30*(4), 395–405. http://doi.org/10.2139/ssrn.2255353

Ojala, A., Evers, N., & Rialp, A. (2018). Extending the international new venture phenomenon to digital platform providers: A longitudinal case study. *Journal of World Business*, *53*(5), 725–739. https://doi.org/10.1016/j.jwb.2018.05.001

Olsson, U. H., Foss, T., Troye, S. V., & Howell, R. D. (2000). The performance of ML, GLS, and WLS estimation in structural equation modeling under conditions of misspecification and nonnormality. *Structural Equation Modeling*, *7*(4), 557–595. https://doi.org/10.1207/S15328007SEM0704_3

Poppo, L., & Zenger, T. (2002). Do formal contracts and relational governance function as substitutes or complements? *Strategic Management Journal*, *23*(8), 707–725. https://doi.org/10.1002/smj.249

Poppo, L., & Zhou, K. Z. (2014). Managing contracts for fairness in buyer–supplier exchanges. *Strategic Management Journal*, *35*(10), 1508–1527. https://doi.org/10.1002/smj.2175

Prentice, D. A., & Miller, D. T. (1992). When small effects are impressive. *Psychological Bulletin*, *112*(1), 160. https://doi.org/10.1002/smj.2175

Puni, A., & Anlesinya, A. (2019). Corporate governance mechanisms and firm performance in a developing country. *International Journal of Law and Management*, *62*(2), 147–169. https://doi.org/10.1108/IJLMA-03-2019-0076

Rangaswamy, A., Moch, N., Felten, C., Van Bruggen, G., Wieringa, J. E., & Wirtz, J. (2020). The role of marketing in digital business platforms. *Journal of Interactive Marketing*, *51*(1), 72–90. https://doi.org/10.1016/j.intmar.2020.04.006

Reuer, J. J., & Ariño, A. (2007). Strategic alliance contracts: Dimensions and determinants of contractual complexity. *Strategic Management Journal*, *28*(3), 313–330. https://doi.org/10.1002/smj.581

Rindfleisch, A. (2020). Transaction cost theory: Past, present and future. *AMS Review*, *10*, 85–97. https://doi.org/10.1007/s13162-019-00151-x

Ruekert, R. W., & Churchill Jr, G. A. (1984). Reliability and validity of alternative measures of channel member satisfaction. *Journal of Marketing Research*, *21*(2), 226–233. https://doi.org/10.1177/002224378402100212

Santoro, G., Vrontis, D., Thrassou, A., & Dezi, L. (2018). The Internet of Things: Building a knowledge management system for open innovation and knowledge management capacity. *Technological Forecasting and Social Change*, *136*, 347–354. https://doi.org/10.1016/j.techfore.2017.02.034

Schepker, D. J., Oh, W.-Y., Martynov, A., & Poppo, L. (2014). The many futures of contracts: Moving beyond structure and safeguarding to coordination and adaptation. *Journal of Management*, *40*(1), 193–225. https://doi.org/10.1177/0149206313491

Schilke, O., & Lumineau, F. (2018). The double-edged effect of contracts on alliance performance. *Journal of Management*, *44*(7), 2827–2858. https://doi.org/10.1177/0149206316655872

Shahab, S., & Allam, Z. (2020). Reducing transaction costs of tradable permit schemes using Blockchain smart contracts. *Growth and Change*, *51*, 302–308. https://doi.org/10.1111/grow.12342

Shen, L., Su, C., Zheng, X., & Zhuang, G. (2019). Contract design capability as a trust enabler in the pre-formation phase of interfirm relationships. *Journal of Business Research*, *95*, 103–115. https://doi.org/10.1016/j.jbusres.2018.10.007

Soares, M. E., & Mosquera, P. (2019). Fostering work engagement: The role of the psychological contract. *Journal of Business Research*, *101*, 469–476. https://doi.org/10.1016/j.jbusres.2019.01.003

Stevens, G. C., & Johnson, M. (2016). Integrating the supply chain…25 years on. *International Journal of Physical Distribution and Logistics Management*, *46*(1), 19–42. https://doi.org/10.1108/IJPDLM-07-2015-0175

Subramaniam, M. (2020). Digital ecosystems and their implications for competitive strategy. *Journal of Organisation Design*, *9*, 12. https://doi.org/10.1186/s41469-020-00073-0

Sussan, F., & Acs, Z. J. (2017). The digital entrepreneurial ecosystem. *Small Business Economics*, *49*(1), 55–73. https://doi.org/10.1007/s11187-017-9867-5

Veile, J. W., Schmidt, M. C., & Voigt, K. I. (2022). Toward a new era of cooperation: How industrial digital platforms transform business models in Industry 4.0. *Journal of Business Research*, *143*, 387–405. https://doi.org/10.1016/j.jbusres.2021.11.062

Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, *122*, 889–901. https://doi.org/10.1016/j.jbusres.2019.09.022

Wang, E. T. G., & Wei, H. L. (2007). Interorganisational governance value creation: Coordinating for information visibility and flexibility in supply chains. *Decision Sciences*, *38*(4), 647–674. https://doi.org/10.1111/j.1540-5915.2007.00173.x

Wang, C., Yap, J. B. H., Wood, L. C., & Abdul-Rahman, H. (2019). Knowledge modelling for contract disputes and change control. *Production Planning & Control*, *30*(8), 650–664. https://doi.org/10.1080/09537287.2019.1572247

Wang, Y., Liang, H., Yang, N., & Sun, S. (2021). How contract enforcement reduces opportunism? The paradoxical moderating effect of interfirm guanxi. *Industrial Marketing Management*, *97*, 115–125. https://doi.org/10.1016/j.indmarman.2021.06.010

Wang, Y., Chen, Y., Wang, W., Chen, Y., & Jin, M. (2022). Revisiting the relationship between contract governance and contractors' opportunistic behaviour in construction projects. *IEEE Transactions on Engineering Management*, *69*(6), 2517–2529, https://doi.org/10.1109/TEM.2019.2945551

Williamson, O. E. (2010). Transaction cost economics: The natural progression. *American Economic Review*, *100*(3), 673–690. https://doi.org/10.1257/aer.100.3.673

Yadav, M.S., & Pavlou, P.A. (2020). Technology-enabled interactions in digital environments: A conceptual foundation for current and future research. *Journal of the Academy of Marketing Science*, *48*, 132–136. https://doi.org/10.1007/s11747-019-00712-3

Zhu, Q., & Lai, K. (2019). Enhancing supply chain operations with extended corporate social responsibility practices by multinational enterprises: Social capital perspective from Chinese suppliers. *International Journal of Production Economics*, *213*, 1–12. https://doi.org/10.1016/j.ijpe.2019.02.012

Appendix 1

Contractual control enforcement (CSE) (Antia & Frazier, 2001; Wang et al., 2019)	
CSE1	We take decisive action to protect our interests if partners violate essential clauses
CSE2	We take strict punitive action against it if partners violate essential clauses
CSE3	We take strict measures to monitor and control trading activity following the terms of the contract
CSE4	No sanctions imposed – highest level of sanctions imposed
Opportunistic behaviour (OP) (Jap & Anderson, 2003)	
OP1	These partners often violate formal or informal agreements for their benefit
OP2	These partners often take advantage of loopholes to pursue their interests
OP3	These partners often intentionally withhold information that our company should know
Channel cooperative performance (PF) (Li et al., 2021; Ruekert & Churchill, 1984)	
PF1	We are satisfied with the benefits obtained from this partner
PF2	We are satisfied with this partner in terms of sales revenue
PF3	We are satisfied with this partner in terms of product promotion
PF4	We are satisfied with this partner in terms of service from this partner
IT-enabled formal interactions (IT) (Li et al., 2017)	
IT1	We frequently transfer business materials with our partners via information technology
IT2	We frequently access each other's inventory levels via information technology
IT3	We frequently send purchase orders with our partners via information technology