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# Coopetition in the platform economy from ethical and firm performance perspectives

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#### ABSTRACT

The platform economy facilitates a model of sharing economy, where competition and cooperation among the competitive firms are very common. Nevertheless, there are very few studies to date which investigate how competition and cooperation influence firms' ethical dilemmas, and how these in turn affect performance outcomes. As such, there is a lack of understanding of the outcomes of platform-based sharing economy from conflict management and firm performance perspectives. Thus, the aim of this study is to examine the coopetition in platform economy from ethical and firm performance perspectives. Building on literature from the relational view and resource-based view, we perform an empirical analysis on a dataset of 328 Indian platform-based firms. The study finds that there is a significant impact of coopetition in platform-based sharing economy which creates conflicts and increases the firms' ethical dilemma that eventually decreases the performance of firms.

# 1. Introduction

The digital economy is a social and economic phenomenon. The rapid rise of digital economy facilitated by platforms has brought in a paradigm shift in the existing business practices as well as choice of the consumers (Chen et al., 2020). In platform economy, a single service is offered to multiple consumers through a single point of contact. Such practices cover from vehicle-sharing services even to short-term rental firms (Benjaafar & Hu, 2019; Klarin & Suseno, 2021). Platform economy also facilitates sharing economy where the central theme is concerned with consumers who prefer to borrow or rent goods and services for a specific period rather than completely purchasing those (Leick et al., 2022). Coopetition among the firms is known to be very common in the context of sharing economy which is facilitated by the platform economy model (Arslan, 2018; Velu, 2019). Coopetition has two dimensions which are cooperation and competition and is interpreted as "a dynamic and paradoxical relationship which arises when two companies cooperate in some areas (such as strategic alliances), but simultaneously compete in other areas" (Bengtsson & Kock, 2000, p.411). In the context of platform economy, the concept of coopetition is new and as such, scholars are found involved in research works for realizing the nexus between coopetition and firm performance (Sanou et al., 2016). Coopetition emerges from the purview of sharing economy that helps to develop social bonding, trust, and solidarity (Palgan et al., 2021). There are some bright areas of coopetition in the perspective of platform economy based fundamentally on the concept of sharing economy since barring the issues of trust, coopetition helps to strengthen social bonding as well as solidarity. However, in the context of platform economy when the firms involved in business to business (B2B) relationship, if financial issues are included, due or undue interest grows between the involved firms to gain something (Leick et al., 2022). When two firms mutually share their resources, cooperation as well as competition become critical (Kumar et al., 2018). When two rival firms are involved in sharing economy through a common platform, there is possibility by the involved firms to indulge in the unethical practices inviting human capital conflict and data usage conflict leading to create ethical dilemma (Sigala, 2018). Besides, conflict between the employees in a firm or the conflict between the employees of the involved firms might cause ethical issues in the firms affecting their overall performance (Lee & Kim, 2019). But if the firms are involved with each other in the context of sharing economy in an untrustworthy manner, it might cause dilution of their competitive advantage, misusage of human resources and data, as

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well as enhancement of tension amongst the involved firms (Raza-Ullah, 2019; Seifzadeh et al., 2021). The contribution of the present study is how cooperation and competition could simultaneously impact the firm performance in the context of platform-based sharing economy model with the help of some intermediate contextual factors. However, for investigating the nexus between coopetition and firm performance (Koronios et al., 2020; Chatterjee et al., 2021), in the present study relational view (Dyer & Singh, 1998) and resource-based view (RBV) (Barney, 1991) have been integrated and attempts are taken to explain the inner mechanism in the contemplated non-linear relationship between coopetition and firm performance (Akpinar & Vincze, 2016; Sakka et al., 2021).

However, studies for evaluating the dark side of platform-based sharing economy are limited. There are only a few studies to identify the contextual factors which might be impacted by coopetition. Also, there is limited knowledge on how these contextual factors could impact firm performance (Shu et al., 2017). In this vein, the aim of this study is to address the following research questions (ROs).

RQ1: If coopetition comprising of cooperation and competition among the firms in platform economy could raise ethical concerns?

RQ2: Whether coopetition could invite intra and inter firm conflicts in the platform economy causing ethical dilemma that could impact the firm performance?

The research questions have been addressed based on 328 responses which have been gathered from the employees of Indian platform-based firms. The theoretical model so developed has duly been tested with the help of factor-based partial least square (PLS) – structural equation modelling (SEM) technique. For theoretically substantiating the empirical findings, relational view and resource-based view (RBV) (Barney, 1991) have been integrated since neither perspective could, out of its own, successfully interpret the implications of the present study and could explain how cooperation as well as competition could eventually impact firm performance with the help of some intermediate contextual factors.

The remaining parts of the paper are organized as follows. Section 2 presents literature review followed by theoretical foundation and development of conceptual model in section 3. Next, section 4 presents research methodology followed by data analysis with results in section 5. Thereafter, section 6 presents discussion, implications, along with limitation and future scope.

#### 2. Literature review

Platform economy can also be considered as a platform-based digital economy and it has assumed a new business model that includes resource sharing strategies, crowdfunding, social media electronic commerce possessing online delivery activities, and crowdsourcing systems (Chen et al., 2020). This new business model helps the platformbased firms to achieve profitability in the hyper competitive market environment (Eckhardt et al., 2019). Platform models are more consumer focused. These models take help of digitalization with the support of information and communication technology (ICT), artificial intelligence (AI), big data analytics (BDA), and so on (Dai & Nu, 2020). Big data platforms could help the firms for better forecasting the economic effects like unemployment, inflation, and so on (von Richthofen & von Wangenheim, 2021). Another study has demonstrated that platform economy helps to facilitate considerably sharing economy practices (Klarin & Suseno, 2021). In the sharing economy, the principal theme lies on the fact that consumers are used to prefer for borrowing or renting services or goods for a specific period to meet up their needs rather than completely purchasing those services or goods (Zamani & Pouloudi, 2022; Leick et al., 2022).

However, platform-oriented ecosystem, keeping the sharing economy at the center, could affect the human daily lives. In such context, in the perspective of sharing economy, trust as well as transparency are deemed to be more important in this digital arena than ever before

(Kenney et al., 2021; Xu et al., 2021). The issue of security has become more important since in the sharing economy practices, employees of other firms work in another firm and if their working activities are not trustworthy, the very implication of deriving benefits through the process of sharing economy becomes problematic (Cheng et al., 2019; Zamani et al., 2019). Again, in the context of sharing economy, coopetition plays a critical role, but if there is any uncertainty in the relationship between two cooperative firms, it could give rise to many conflicts such as human capital conflict, data sharing conflict and so on.

Such unhealthy cooperation could even adversely affect the relationship between the employees of a firm or even it could become inimical for the employees of different cooperative firms who are involved in platform-based sharing economy (Fang, 2006; Crick et al., 2022). This is considered the dark side of the sharing economy. Studies have investigated the issues of cooperation and competition amongst the firms involved in sharing economy and it appears that such coopetition results in value cocreation as well as value co-destruction (Chowdhury et al., 2016; Zhang et al., 2018). Several studies have demonstrated that if the relationship associated with cooperation and competition is unstable, there is a possibility of negative outcomes especially if such cooperation is vertical (Rajala & Tidström, 2021).

All these studies appear to have dealt with issues of cooperation and competition in the platform-based sharing economy. These literatures mostly have dealt with the bright side of platform-based sharing economy and have broadly ignored the dark side of platform-based sharing economy especially from the ethical and code of conduct perspective. Also, almost none of these studies have extensively dealt with the negative impacts of the unethical practices that could be followed by some of the cooperative firms involved in platform-based sharing economy on their performance. Thus, there is a potential research gap which this present study would try to address.

#### 3. Theoretical foundation and development of conceptual model

For conceptualizing the nature of nexus between coopetition and firm performance, inputs of relational view (Dyer & Singh, 1998) and resource-based view (Barney, 1991) have been taken in this present study. The relational view perspective has highlighted that a firm can create values through alliance when the firm could identify other collaborating firms with complementary resources. Relational view suggests that "relational-specific assets, knowledge-sharing routines, complementary resources, and capabilities and effective governance between alliance partners can determine inter-organizational competitive advantages" (Dyer & Singh, 1998, p.633). This relational view suggests how the business of a firm is required to trust the competitors with whom the firm collaborates to derive beneficial outcomes (Dver, Singh, & Hesterly, 2018). If the firms are involved to work with unethical as well as untrustworthy competitors, the concerned firms are supposed to experience a series of adverse outcomes by dilution of competitive advantages through the misuse of human resources and data (Crick et al., 2022).

This discussion highlights that untrustworthy and unethical competition among the firms involved in sharing economy practices give rise to conflicts within the firm and among the collaborative firms. Such conflicts may even affect the issues of data usage as well as human capital issues. All these conflicts invite ethical dilemma to the involved firms functioning in the sharing economy practices eventually affecting the performance of the firms. This concept corroborates the relational view. Again, RBV helps to elucidate that through the collaboration with the competitors in the context of sharing economy, it is easy for a firm to acquire new tangible and intangible assets which the firm could not acquire had the firm followed an individualistic approach to perform its business activities (Hannah & Eisenhardt, 2018). RBV posits that all the resources possessed by a firm do not have the same potential for achieving a better competitive advantage. The proponents of RBV emphasize that resources which are simultaneously valuable, rare,

imperfectly imitable, as well as non-substitutable (VRIN) could provide better competitive advantage. By collaborating in the context of sharing economy, the firms could identify such VRIN abilities from other firms for exhibiting better performance and untrustworthy practices ignite estrangements of feelings amongst the employees of the same firm or amongst the employees of different involved firms causing ethical dilemma inimical for firm performance.

Thus, through cooperation and through healthy competition, there is a scope for the firms involved in sharing economy to exchange knowledge helpful for the firms to identify the VRIN inhouse capabilities which could improve the performance of the involved firms. While the classical view considers strategic investment which deters entry to the market and raise prices as vital factors for firms' competencies, RBV possesses an intra-firm focus since it could explain how a firm could gain competitive advantage by performing better through efficient usage of firm-specific resources lying in the firm (Wójcik, 2015; Aziz & Samad, 2016). Thus, by integrating relational view and RBV, it could be conceptualized that unethical issues could arise due to human capital and data usage related conflicts, as well as intra and inter firm related conflicts in the context of sharing economy that could impact the overall firm performance (Dyer, Singh, & Hesterly, 2018).

#### 3.1. Hypotheses formulation

The present study has been able to identify the intermediate contextual factors which could help cooperation and competition between the firms involved in platform-based sharing economy to impact their performance by influencing the ethical dilemma of the firms. In this section, all these antecedents will be discussed, and hypotheses will be formulated helpful to develop a theoretical model conceptually.

#### 3.1.1. Cooperation (COO)

Cooperation can be interpreted as a relationship between the firms which could be a horizontal or a vertical relationship and it is also concerned with competitive interactions among the collaborating firms (Bengtsson & Kock, 2000). Cooperation is also a component of coopetition. Cooperation is considered as a complimentary and coordinated interactions among the firms involved in platform-based sharing economy (Madanaguli et al., 2022). With the help of cooperation, it is possible to achieve a common outcome by the involved firms (Anderson & Norus, 1990). Cooperation is construed as joint efforts of the firms involved in platform-based sharing economy to achieve a common goal having a mutual interest and understanding (Mirkovski et al., 2019). If there is any conflict amongst the employees of a firm or of several firms involved in sharing economy due to differences of opinions or vested self-interest along with some issues of data sharing, such conflicts in the intra or inter-firm level could be resolved with the cooperative approach between the involved firms (Barnes et al., 2011; Chatterjee, 2019; Chaudhuri, 2022). Cooperation is concerned with problem solving issues and it emphasizes team spirit, intimate collaboration with joint efforts for achieving a common target (Basile et al., 2021; Chatterjee et al., 2021). Cooperation helps to grow trust amongst the interacting firms to derive beneficial results for all the involved firms which corroborates with the concept of relational view (Dyer & Singh, 1998). With all these discussions, the following hypotheses are formulated.

H1a: Cooperation (COO) amongst the firms involved in platform-based sharing economy helps to overcome the human capital conflict (HCC). H1b: Cooperation (COO) amongst the firms involved in platform-based sharing economy helps to overcome the data usage conflict (DUC). H1c: Cooperation (COO) amongst the firms involved in platform-based sharing economy helps to overcome the intra-firm conflict (IRC). H1d: Cooperation (COO) amongst the firms involved in platform-based sharing economy helps to overcome the inter-firm conflict (INC).

#### 3.1.2. Competition (COM)

Competition is concerned with the concept of comparison of the ability and performance of a firm in comparison with other firms all functioning in a specific market (Lawrence, 2002). When the competition amongst the firms involved in the platform-based sharing economy is fair, it helps the firms to deliver better quality of goods and services to the consumers in a reasonable price (Thompson, 2004). When the firms are involved in fair competition, it helps the firms to borrow intangible as well as tangible VRIN resources from the other concerned firms which eventually help the firms to achieve better performance, the concept being supplemented by RBV. Even when the involved firms face problems concerned with human resource activities or data usage issues or relationship issues amongst the employees of the firms in the intra or inter firm perspective, fair competition is perceived to act as a booster to square up such issues (Vrontis et al., 2021; Rajala & Tidström, 2021). Fair competition among the firms helps the firms to develop their product or service quality in the healthy competitive environment for achieving growth in revenue, market share, and increase in profitability (Manthri et al., 2015). All these arguments help to formulate the following hypotheses.

H2a: Competition (COM) amongst the firms involved in platform-based sharing economy enhances the human capital conflict (HCC).

H1b: Competition (COM) amongst the firms involved in platform-based sharing economy enhances the data usage conflict (DUC).

H1c: Competition (COM) amongst the firms involved in platform-based sharing economy enhances the intra-firm conflict (IRC).

H1d: Competition (COM) amongst the firms involved in platform-based sharing economy enhances the inter-firm conflict (INC).

#### 3.1.3. Data and human level conflict

The platform-based business model for the sharing economy is considered as a popular business practice in the marketing literature (Key, 2017). The firms involved in platform-based sharing economy through cooperative business relationship are often found to use the human resources of their collaborative firms which are lying there underutilized (Harvey et al., 2019). This practice derives immense help to the benefitted firms to better optimize resource utilization by reducing cost for achieving better flexibility towards achieving success (Chakraborty, 2016). The involved firms even used to have taken help of the resources from the rival firms for ensuring better competitiveness and this concept supplements RBV (Barney, 1991). However, in some cases, owing to the characteristics of the sharing economy, concerns crop up when in such coopetition activities, the competitive firms indulged in unethical practices could create an atmosphere of distrust (Yang et al., 2017). In the context of a sharing economy, it is the usual practice to utilize the employees of another firm where such employees are seen to remain underutilized. But if it so happens that such employees are found to have disclosed the business secrets of the parent firm to the other firms where these employees are engaged, this kind of act could generate human capital conflict since such acts are immoral as well as unethical (Chonko et al., 2002; Jha & Singh, 2021). For performing any unethical activity, the doer's conscience decides if it is moral or immoral (Simões et al., 2019; Nguyen, 2021; Bhattacharjee et al., 2021). In such circumstances, for such human capital conflict, the concerned firms are perceived to have suffered from ethical dilemma. Accordingly, the following hypothesis is formulated.

H3a: Human capital conflict (HCC) between the involved firms in platform-based sharing economy enhances the ethical dilemma (ETD).

Again, in the platform-based sharing economy, the involved firms work in collaborative as well as competitive environments. The involved firms are found to have exchanged their tangible as well as intangible resources helpful to them for achieving competitiveness, the concept being corroborated by RBV (Barney, 1991). In such an exchange of

activities, one cannot rule out the probability for indulging in unethical practices in the context of data sharing (Jha & Singh, 2021). It is a fact that the policy and practices of a firm are characterized by the sense of the firm's responsibility, transparency, as well as trustworthiness. Such characteristics of the firm generate a sense among the stakeholders about the ethical way of doing business by the firm (Murphy et al., 2007). Immoral activities done by a firm render that firm to be considered to function unethically (Simões et al., 2019). If a firm involved in sharing economy practices is found to use data of another firm without any legitimate consent and use that data to benefit itself, such kind of acts of the firms could be regarded as unethical as well as immoral (Carrigan & Attalla, 2001; Yun et al., 2020). Such conflict of data usage invites ethical dilemma to the affected firm. Such immoral action only benefits the unethically behaved firm in an illegitimate way, and it is inimical for the other firms (Haines et al., 2008; Septianto et al., 2020). In terms of the above discussion, the following hypothesis is developed.

H3b: Data usage conflict (DUC) between the firms involved in platformbased sharing economy enhances the ethical dilemma (ETD).

#### 3.1.4. Firm level conflict

Benefits of cooperation and competition amongst the firms involved in platformed based sharing economy include product innovation with high quality (Langerak & Hultink, 2005). However, there are innumerable challenges regarding the business activities of the involved firms, such as, how to effectively organize the cooperation and healthy competition so that there should not be any intra-fir or inter-firm conflicts among the employees of the firms. The decision for setting up the effective collaboration with close interaction amongst the involved stakeholders can cause conflict of interest in the relationship since the conflicts of interest are likely to emerge whenever there is a close cooperation and competition among the firms (Postrel, 2009; Melander & Tell, 2019; Sheshadri, 2020; Chaudhuri & Vrontis, 2021). Conflicts amongst the employees of the firms in the intra and inter-firm context may arise due to several reasons including the unethical practices or the opportunistic behaviors of the employees (Sampson, 2004; Rajala & Tidström, 2021). Such conflicts at the firm level are concerned with relational characteristics partnering to the involved employees either in intra or inter-firm level (Hagedoorn, 2002; Melander & Tell, 2019; Sheshadri, 2019; Sharma et al., 2021). Studies have suggested that internal organizational structure of a firm could impact the relationship between the firms involved in cooperation as well as competition (Eslami & Lakemond, 2016). The conflicts amongst the employees of the firms depend on the nature of relationship corroborating relational view as envisaged by Dyer and Singh (1998). Such types of conflicts also depend on the ethical sense of the individual employee of the firms. The employees need to realize what are the ethical and unethical practices (Melander & Tell, 2019). Thus, the nature of actions of the employees are perceived to put the concerned firms against a challenge involving ethical issues. Accordingly, the following hypotheses are prescribed.

H4a: Intra-firm conflict (IRC) in the firms positively influences the ethical dilemma (ETD).

H4b: Inter-firm conflict (INC) among different involved firms in the platform-based sharing economy positively influences the ethical dilemma (ETD).

# 3.1.5. Ethical dilemma (ETD) and firm performance (FPR)

Sharing economy is considered as an encompassing term towards market access for realizing the monetary as well as non-monitory benefits (Belk, 2014). Firms involved in sharing economy help the business by closely connecting the users with the providers through platform-based activities. However, the firms involved in sharing economy have been facing innumerable challenges. Failure to anticipate ethical issues could damage the reputation of involved firms (Gonzalez-Padron &

Nason, 2009). In such a sharing economy, the firms acquire tangible and intangible sources for impacting their performance which is in conformity with RBV (Barney, 1991). Again, relational view (Dyer & Singh, 1998) has highlighted how efficiency as well as quality of the involved firms could be developed through coopetition which can eventually improve the firm performance (Dyer, Singh, & Hesterly, 2018). It is also expected that the firms involved in platform-based sharing economy are supposed to behave ethically and morally (Burchell & Cook, 2006). But it has been observed that some firms involved in coopetition activities are found to have indulged in misusing data, human resources, and so on. Such unethical practices could impact the relationships amongst the stakeholders in a distorted way (Leonidou et al., 2013) which is found to have put the affected firm in a state of ethical dilemma that could adversely impact the revenue earning, market share, and profitability of the affected firms. Accordingly, the following hypothesis is formulated.

H5: Ethical dilemma (ETD) of a firm negatively impacts the firm performance (FPR).

With all these inputs along with knowledge of the literature, Fig. 1 highlights the proposed theoretical model.

Be it mentioned here that since coopetition is comprised of two concepts like cooperation and competition (Bengtsson & Kock, 2000), the proposed theoretical model has considered two exogeneous constructs like cooperation and competition.

#### 4. Research methodology

In the present study, the proposed theoretical model (Fig. 1) needs to be validated and the hypotheses are to be tested. For this, quantitative method has been adopted. The data has been collected through survey from the potential respondents against a structured set of questions (questionnaire).

# 4.1. Research instruments

From the study of extant literature, initially, a set of questions has been prepared. At the time of preparing the questions, due attention was given so that the questions become simple, and the prospective respondents could easily understand the questions. The questions were then pretested by the input of six experts. Out of these six experts, four experts came from industry, each having more than 15 years of experience. The remaining two experts were academicians with each having a PhD degree possessing each more than 10 years of academic experience in the domain of the present study. The comments of the experts were collected which highlighted the intelligibility, appropriateness, and suggestions for potential improvements of item wordings. The approach could help to reword some questions ensuring face validity (Czakon et al., 2020). After that, a pilot test was conducted considering smaller samples. The concerned respondents were not included in the main survey. The responses of the pilot test could help to assess the convergent validity of the items corresponding to their respective constructs. The results of the pilot test help to further refine the wordings of the items to enhance their readability and understandability. Some questions had to be dropped since they did not fully explain the corresponding constructs. In this way, 27 questions were finetuned.

#### 4.2. Collection of data

For collection of data from the respondents, professional connections of the authors with several business associations of India have been used. These are Federation of Indian Chambers of Commerce & Industry, Progress, Harmony and Development Chamber of Commerce and Industry, and Confederation of Indian Industry. The questionnaire was posted online with the help of Google Docs. The link to the questionnaire was shared with some of the known officials of the above-stated business

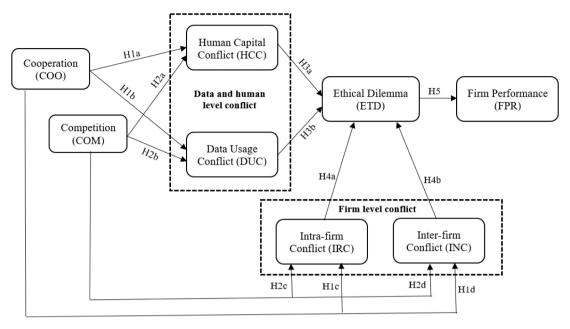


Fig. 1. The research model (Adopted from RBV and Relational view).

associations. In this way, a questionnaire was sent to 806 managers of 15 firms of different sizes from different industries such as IT, retail, healthcare, as well as financial sectors. Attempts were made to collect data from the managers of different firms because the managers are supposed to take most of the business decisions. The questionnaire contains 27 questions. Each question has five options and each of the respondents is scheduled to put tick mark in one option out of five options for each question as the responses have been quantified in 5-point Likert scale anchoring Strongly Disagree (SD) marking as 1 to Strongly Agree (SA) marking as 5. The prospective respondents were given two months' time from the date of receipt of the communication. Be it mentioned here that all the respondents were assured that their anonymity and confidentiality will be strictly preserved so that they can respond in an unbiased way. Also, a guideline describing how to fill up the response sheet was provided to each of the respondents. Within the scheduled time, the responses of 339 respondents were received. The response rate was 42%. These 339 responses were verified, and it was found that out of 339 responses, 11 responses were incomplete. These were not considered. Analysis was done on the responses of 328 respondents against 27 questions. The demographic information of these 328 respondents is provided in Table 1.

# 5. Data analysis with results

To analyze the responses in the survey, partial least square (PLS) structural equation modelling (SEM) has been preferred (Hair et al.,

Table 1 Demographic information (N = 328).

Particular	Category	Number	Percentage	
Gender	Male	237	72.2	
	Female	91	27.8	
Managerial	Senior manager / Executives	48	14.6	
hierarchy	Midlevel manager	62	18.9	
	Junior manager	91	27.8	
	Non manager (Individual	127	38.7	
	contributor)			
Industry sector	IT	104	31.7	
	Retail	69	21.0	
	Healthcare	88	26.8	
	Financial	67	20.5	

2016). Here, Smart PLS 3.2.3 software has been used (Rana et al., 2022). The approach is simple and capable of analyzing the data which is not normally distributed though this facility is not available for analyzing the data through covariance-based structural equation modelling (CB-SEM) technique (Rigdon et al., 2017). This technique does not impose any sample restriction (Willaby et al., 2015). In this process, non-parametric bootstrapping procedure has been followed using 5000 resamples.

# 5.1. Measurement properties along with discriminant validity test

For assessing the content validity, the loading factor for each item has been estimated. For verification of validity, reliability, as well as internal consistency, AVE (average variance extracted), CR (composite reliability), and  $\alpha$  (Cronbach's alpha) for each construct has been estimated. It has been observed that all the estimated values were within the permissible range. Table 2 presents the results.

It has also been observed that the square roots of all the AVEs are found to be greater than the respective bifactor correlation coefficients confirming the condition for verification of discriminant validity as enjoined by Fornell and Larcker (1981). Table 3 provides the results.

# 5.2. Common method bias (CMB)

This study is based on data available from the survey. As such, the chance of having CMB cannot be ruled out. For minimizing the risks of CMB, some specific procedural measures have been taken. At the time of survey, the questions were duly pretested as well as piloted for improving the understandability, readability, and comprehensiveness of the questions. This helped the prospective respondents to easily understand the questions for improvement of quality of the responses avoiding any bias. Still, to check the extent of severity of CMB, a post hoc Harman's Single Factor Test (SFT) had been conducted. The results indicated that the first factor came out as 22.69% of the variance. It is within the specific range as the recommended highest cutoff value in this respect is 50% (Podsakoff et al., 2003). However, as opined by Ketokivi and Schroeder (2004), the SFT is not to that extent robust and conclusive test for the CMB, additionally marker variable test was also conducted (Lindell & Whitney, 2001). The results did not give any evidence of CMB confirming thereby that CMB could not distort the prediction of the results.

**Table 2**Measurement properties.

Constructs/items	LF	AVE	CR	α	t-values
COO		0.83	0.85	0.88	
COO1	0.91				22.17
COO2	0.95				23.29
COO3	0.87				18.33
COM		0.85	0.87	0.89	
COM1	0.92				24.18
COM2	0.90				36.17
COM3	0.95				37.19
HCC		0.81	0.83	0.86	
HCC1	0.85				26.12
HCC2	0.95				39.11
HCC3	0.90				25.13
DUC		0.85	0.87	0.89	
DUC1	0.95				22.15
DUC2	0.91				31.04
DUC3	0.90				37.92
ETD		0.78	0.82	0.86	
ETD1	0.90				18.90
ETD2	0.85				25.81
ETD3	0.90				27.29
IRC		0.83	0.85	0.87	
IRC1	0.95				24.18
IRC2	0.90				22.19
IRC3	0.94				25.73
IRC4	0.85				29.17
INC		0.80	0.84	0.88	
INC1	0.89				27.17
INC2	0.85				29.11
INC3	0.96				39.07
INC4	0.93				26.28
FPR		0.84	0.86	0.89	
FPR1	0.90				24.11
FPR2	0.92				29.32
FPR3	0.97				31.07
FPR4	0.96				39.15

#### 5.3. Hypotheses testing

To test the hypotheses, bootstrapping procedure with consideration of 5000 resamples is conducted. With consideration of omission distance as 7, cross-validated redundancy is estimated through the assessment of  $Q^2$  value (Mishra et al., 2018). The estimated value came out as 0.022 which is positive confirming that the model has predictive relevance. To assess the model fit, standardized root mean square residual (SRMR) is considered as a standard index and its values came out to be 0.061 for PLS and 0.033 for PLSc. Both these values are less than the highest threshold value of 0.08 (Hu & Bentler, 1999). It confirms that the model is fit and is in order (Chin, 2010). This process helps to estimate the path coefficients of different linkages, level of significance, and coefficient of determination ( $R^2$ ). The results are presented in Table 4.

The validated model is shown in Fig. 2.

#### 6. Findings and discussion

The present study has formulated 13 hypotheses. All these hypotheses were statistically validated. The results demonstrate that cooperation (COO) impacts human capital conflict (HCC), data usage conflict (DUC), intra-firm conflict (IRC), and inter-firm conflict (INC) significantly and positively (H1a-H1d) since the concerned path coefficients are 0.18, 0.23, 0.26, and 0.31 respectively with respective levels of significances as p < 0.01(\*\*), p < 0.001(\*\*\*), p < 0.001(\*\*\*), and p <0.01(\*\*). The results also highlight that competition (COM) could impact HCC, DUC, IRC, and INC significantly and positively since the concerned path coefficients are 0.17, 0.29, 0.24, and 0.36 (H2a-H2d) respectively with respective levels of significances as p < 0.01(\*\*), p < $0.05(\mbox{^*}),~p<0.05(\mbox{^*}),$  and  $p<0.01(\mbox{^**}).$  Again, HCC and DUC significantly and positively impact ethical dilemma (ETD) separately (H3a and H3b) since the concerned path coefficients are 0.18 and 0.26 respectively with respective levels of significances as p < 0.001(\*\*\*) and p <0.01(\*\*). Again, the results highlight that IRC and INC could impact ETD significantly and positively (H4a and H4b) as the concerned path coefficients are 0.32 and 0.37 respectively with respective levels of significances as p < 0.001(\*\*\*) and p < 0.01(\*\*). Finally, the result demonstrates that ETD could impact firm performance (FPR) negatively and significantly (H5) as the concerned path coefficient is -0.21 with level of significance as p < 0.01(\*\*). So far as coefficients of determination (R<sup>2</sup>) are concerned, COO and COM could explain HCC, DUC, IRC, and INC to the tune of 44%, 46%, 45%, and 48% respectively. Again, HCC, DUC, IRC, and INC could explain ETD to the tune of 49% whereas ETD could explain FPR to the tune of 67% which is the predictive power of the proposed theoretical model. This study has highlighted how COO and OCM could impact human capital and data usage conflicts which received support from another study of Chatterjee et al. (2022) that investigated dark side of platform-based sharing economy by examining the unethical practices and their impacts on B2B coopetition and on firm performance.

The present study has considered the effects of coopetition which is comprised of competition and cooperation on the firm performance mediated through some contextual factors which is claimed to be a novel

**Table 4** Structural equation modelling.

Hypotheses	Linkages	Path coefficients	p-values	Remarks
H1a	$COO \rightarrow HCC$	0.18	p < 0.01(**)	Supported
H1b	$COO \rightarrow DUC$	0.23	p < 0.001(***)	Supported
H1c	$COO \rightarrow IRC$	0.26	p < 0.001(***)	Supported
H1d	$COO \rightarrow INC$	0.31	p < 0.01(**)	Supported
H2a	$COM \rightarrow HCC$	0.17	p < 0.01(**)	Supported
H2b	$COM \rightarrow DUC$	0.29	p < 0.05(*)	Supported
H2c	$COM \rightarrow IRC$	0.24	p < 0.05(*)	Supported
H2d	$COM \rightarrow INC$	0.31	p < 0.01(**)	Supported
Н3а	$HCC \rightarrow ETD$	0.18	p < 0.001(***)	Supported
H3b	$DUC \rightarrow ETD$	0.26	p < 0.01(**)	Supported
H4a	$IRC \rightarrow ETD$	0.32	p < 0.001(***)	Supported
H4b	$INC \rightarrow ETD$	0.37	p < 0.01(**)	Supported
H5	$ETD \rightarrow FPR$	-0.21	p < 0.01(**)	Supported

Table 3
Discriminant validity test (Fornell & Larcker, 1981).

	•		•						
Construct	COO	COM	HCC	DUC	ETD	IRC	INC	FPR	AVE
COO	0.91								0.83
COM	0.17	0.92							0.85
HCC	0.29	0.37	0.90						0.81
DUC	0.33	0.32	0.23	0.92					0.85
ETD	0.24	0.19	0.27	0.38	0.88				0.78
IRC	0.27	0.29	0.19	0.31	0.35	0.91			0.83
INC	0.31	0.36	0.35	0.19	0.26	0.39	0.89		0.90
FPR	0.37	0.41	0.33	0.17	0.18	0.17	0.22	0.93	0.87

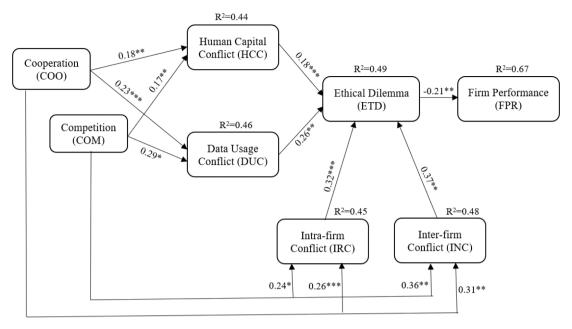


Fig. 2. Validated model (SEM).

attempt by the authors. This study has also demonstrated that cooperation and competition significantly and positively impact the intra and inter-firm conflicts which in turn could influence the ethical dilemma of the affected firms. This concept is duly supplemented by another study of Melander and Tell (2019) which investigated the influence on product development by the impacts of inter-firm and intra-firm coordination in the context of conflicts of interest between the involved firms. The present study has demonstrated that ethical dilemma negatively affects the performance of a firm which received support from the study of Nadeem et al. (2021) that investigated the role of ethical perceptions surrounding participation of the consumers on the platform-based sharing economy. In this way, the present study has discussed how sharing economy could be managed under market competition and how ethical issues could influence the firm's performance.

# 6.1. Theoretical contributions

The present study has demonstrated how cooperation and competition could affect several issues of conflicts in the platform-based sharing economy firms which could create ethical problems in the firms harmful for improving their performances. No other studies are found to have extensively touched and nurtured all these salient points simultaneously to investigate their effects on firm performance. In this respect, the present study is deemed to have contributed values to the extant literature. The present study has also examined several issues of platform-based sharing economy with special emphasis on issues concerned with ethics. The present study has extended the concepts of relational view (Dyer & Singh, 1998) and resource-based view (Barney, 1991) for investigating how the new business model based on sharing economy platform could create values for the eco-system through coopetition. This study has been able to effectively as well as successfully connect RBV with the concept of cooperation and competition.

In addition, we have highlighted that through the effective collaboration with the rival firms, it is possible by the firms to acquire VRIN resources from the rival firms helpful for achieving the business goal. This would not have been possible for the firms if the firms only followed individualistic approach without being involved in collaboration. However, even if a firm resource could fulfil the VRIN criteria, such VRIN resources may not yield beneficial outcomes in the absence of proper utilization of such resources (Wójcik, 2015). This implies that the firms through cooperation and competition need to strengthen their

collaborative relationship with the other firms for effectively utilizing the VRIN resources with necessary knowledge transfer. In such context, the present study has taken a holistic attempt to extend the concept of RBV to the relational view for estimating how through the collaborative efforts, with the help of simultaneous effects of cooperation and competition which constitute coopetition (Bengtsson & Kock, 2000), the relationship could be strengthened to square up and reconcile several intra-firm and inter-firm conflicts which could emerge from unethical practices and could adversely affect the performance of the firms (Lavie, 2006)

Thus, the present study has been successfully able to synergize RBV and relational view concept to highlight that only acquisition of VRIN resources may not yield effective outcomes in the platform-based business model, but the effective relationship with the competitive-collaborative firms should be improved for deriving mutually beneficial outcomes (Dyer, Singh, & Hesterly, 2018). A study of Nadeem et al. (2021) has suggested that in the context of sharing economy, the role of ethical perception in the consumer's participation could create business values. The idea of this study has been extended in the present study to conceptualize that the collaborative efforts amongst the firms functioning in the platform-based sharing economy could help the firms to ensure better performance if the firms could avoid unethical practices responsible for emergence of several unwarranted conflicts. These concepts have provided valuable inputs to the body of extant literature.

# 6.2. Implication to practice

The present study has provided several effective inputs to the practitioners. The current study has demonstrated that cooperation and competition could help the firms involved in platform-based sharing economy to overcome several conflicts in the firms including unethical practices responsible to enhance ethical dilemma to the firms inimical for improvement of the performance of the firms. This implies that the leaders of the involved firms need to understand that conflicts in data usage, human resource sharing, intra-firm and inter-firm related resource sharing activities are the fundamental factors responsible for putting the firms in the state of ethical dilemma which deteriorates the performance of the firms involved in platform-based sharing economy. The managers of the firms involved in coopetition should always focus attention on the activities of the rival firms so that those firms must not get any scope to be involved in unethical practices which could yield

ethical problems. This can be successfully achieved by the managers who must have the ability to predict in advance if the firms engaged in using other's resources could be trusted or not. In this scenario, the advanced assessing ability of the concerned managers is perceived to be critical. If the managers have doubts regarding the business practices of the other firms involved or if the collaborating firms possess any ill reputation, the managers must not share their valuable resources with those firms.

However, in a practical scenario, the firms involved in platformbased sharing economy need to avail the benefits through collaboration with other firms including acquisition of tangible and intangible resources which the firms could not acquire if the firms could adopt only individualistic approach. But the leaders and managers should not indulge in excessive use of others' resources through coopetition activities as this could impede talent revelation of the employees of individual firms. The firms will be unreasonably dependent on the outsourced capabilities. It is suggested that the leaders and managers should carefully optimize the extent of outsourced assistance. It is important to note that the leaders and managers of the involved firms should maintain the effective presence of their respective firms in the competitive marketplace which could help the firms to reduce the dependency on the other collaborating firms. Hence, the leaders and managers need to maintain an effective balance between coopetition activities and individualistic business approach in this everchanging hyper marketplace so that the firms can improve their own competencies as well as can take help of other collaborating firms as and when necessary.

#### 6.3. Limitations and future scope

The present study has provided some important theoretical contributions and practical implications. This could be construed as strength of this study (Davison & Martinsons, 2016). However, still there are some scopes to further improve the paper. The present study has several limitations leaving enough space for the future researchers. First, the results of this study depend on such data which are cross-sectional. From this, defects of causality in the relationships of the constructs emerge inviting endogeneity defects. It is suggested that to eliminate these defects, future researchers should conduct longitudinal study. Second, the study results depend on analysis of the inputs of the respondents who are based out of India. This creates an external validity issue. Future researchers should consider the inputs of the respondents spread uniformly across the globe. The results arrived from such inputs could project result with more generalizability. Third, the study has considered responses of 328 respondents which hardly can represent the entire population. It is suggested that the future researchers should consider more respondents and in that case the results would be more effective and generic. Fourth, the explanatory power of the proposed theoretical model is 67%. Future researchers should consider other constructs to examine if inclusion of other constructs could enhance the strength of the model. Fifth, this study has not considered any rival model which could help to compare the rival model with the proposed theoretical model to examine the veracity of the proposed model through such comparison. This is considered as one of the limitations of this study and it is left for the future researchers to nurture.

#### CRediT authorship contribution statement

Sheshadri Chatterjee: Writing – original draft, Software, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. Ranjan Chaudhuri: Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. Patrick Mikalef: Writing – original draft, Validation, Supervision, Project administration. David Sarpong: Writing – original draft, Supervision.

#### **Declaration of Competing Interest**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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