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Governance Mechanisms and Business Ecosystem Coordination: The Roles of Opportunistic Behavior and Perceived Performance Risk

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Abstract
The uncertainty of the market environment and the increasing levels of competition as result of globalisation encourage companies to change from stand-alone to collaborative or interconnected network economy in order to gain resilience and agility. This trend has resulted in the emergence of new organisational philosophies that provide an enabling environment that ensures business collaboration. A typical example is a concept known as Business Ecosystem (BE) introduced by Moore which used biological ecosystem metaphor to explain business environments. Since there are different stakeholders with varied interests, there is the need for an introduction of governance mechanisms that regulate stakeholder activities. The current study therefore seeks to examine the effect of governance mechanisms on BE coordination. The study also assesedthe moderating and mediating roles of perceived performance risk and opportunistic behaviour respectively. The data analysis was done using the 173 responses from the institutions from the BE of pharmaceutical Company X in Ghana. The data analysis was run using structural equation modelling (SEM) and both the Amos (v.23) and SPSS (v.23) software packages were used. The results revealed that the two governance mechanisms have positive and significant influence on BE coordination. Opportunistic behaviour only partially mediated the relationship between relational governance and BE coordination. The relationship between opportunistic behaviour and coordination was moderated by perceived performance risk. Based on the results, we propose some recommendations for management to enhance their contact persons performance.
Keywords: Business Ecosystem, Relational Governance, Contractual Governance, Perceived Performance Risk, Opportunistic Behavior.
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1. Introduction

In recent years, the business ecosystem (BE) has enjoyed attention from both strategic and innovation literature (Pomegbe et al., 2022; Pomegbe et al., 2021; Jacobides *et al.*, 2018; Rong *et al*., 2018; Tsujimoto *et al*., 2018; Dedehayir *et al.,* 2018) since its introduction by Moore (1993) and made popular by Iansiti and Levien (2004a, 2004b). According to Jacobides *et al.* (2018), BE is a 'network of actors with varying degrees of multilateral, non-generic complementarities that are not hierarchically controlled'. Again, BE "is said to be characterized by webs of loose relationships that exist between interdependent players" (Ramachandran and Mukherji, 2007, p. 114). The description of BE by Ramachandran and Mukherji, (2007) makes the study of BE governance and coordination very relevant.

The pharmaceutical sector as a BE is one of the most research intensive and regulated with research expenditure to sales being larger than the entire manufacturing sector in general (OECD, 2018). The sector's ability to introduce innovative medicines require cooperation of other stakeholders in the BE. However, these stakeholders sometimes come to an exchange relationship with partially overlapping goals (Kumar *et al*., 2014). Coordinating stakeholders' activities in developing innovative medicines become very relevant as the drugs goes a long way to save lives. Nevertheless, the multilateral and horizontal nature of these relationships between the focal firm and the various stakeholders in the pharmaceutical BE make it complex and demands regulation. Complex exchange relationships require high level of coordination and control among stakeholders (Crook *et al.*, 2013). In addressing these complexities, focal firm faces two strategic choices (Wuyts and Geykens, 2005). First, the firm must decide whether they want to adopt a well detailed contractual measures to root out issues of opportunism and promote cooperation. Second they must decide whether they select stakeholders that share the same norms, values and close prior ties with them.

Two governance mechanisms embedded in transaction cost economics (TCE) and relational exchange theory (RET) have been widely adopted: contractual and relational governance (Wang *et al.,* 2019; Osmonbekov *et al.,* 2016; Ferguson *et al.*, 2005). Contractual governance rooted in TCE relies on market or formal contracts

that clearly specify the terms, rules and responsibilities of exchange parties (Williamson, 1975). On the other hand, relational governance embedded in RET relies on soft measures such as shared norms and values, trust and commitment to govern exchange relationship (Macneil, 1980). Though the effectiveness of these governance mechanisms to prevent opportunistic behavior and promote close performance relationship or stakeholder cooperation has been well documented (Wang *et al.,* 2019; Lui *et al*., 2009), the result is however inconclusive. There has also been a lot of debate regarding the use of these governance mechanisms to inhibit opportunism and promote coordination. While some scholars believe that contractual governance is the most effective tool to inhibit opportunistic behavior (Wang *et al*., 2019), others also believe that excessive use of formal contract embolden stakeholders to take advantage of incomplete contracts to cheat (Watabaji, 2014). For relational governance, whiles one group believes that the use of it prevents opportunism and promote cooperation among stakeholders (Wang et al., 2019), others on the other hand believe that relational governance stands the chance of being abused by trusted parties through opportunism (Dyer and Singh, 1998).

As the business environment has become increasingly dynamic and complex, risks has also become eminent. Risk is regarded as the perception or subjective evaluation of a negative consequences of a decision made (Dag and Teng, 1996). Two dimensions of risk have been identified by Das and Teng (1996, 2001), in the strategic alliance literature: relational and performance risk. *Relational risk* is the probability and the consequences that a stakeholder is unlikely to commit itself to the exchange relationship in a manner deemed appropriate. *Performance risk* on the other hand is concerned with factors that may negatively affect the gains of strategic objectives and promote opportunism, given that the stakeholders fully cooperate. Since these two risks are mutually exclusive of one another and performance risk is more external and common to all strategic decisions, the current study sought to examine how the interaction effect of perceived performance risk and opportunistic behavior in an exchange relationship affect stakeholders' coordination. Stakeholders' perception of risk promote opportunism and inhibit trust formation or cooperation in exchange relationships (Bazyar *et al.*, 2013). *Perceived performance risk* as the focus of this study, is the subjective assessment of the negative implications of decisions such as information asymmetry, inequity, human mistakes and lack of competence of stakeholder firms. (Dag and Teng, 2001). Per TCE, perceived performance risk promotes opportunistic behaviors of stakeholders while opportunistic behavior also prevents stakeholders' cooperation (Bazyar *et al.*, 2013). The levels of perceived performance risks determine the influence of opportunistic behavior on coordination (Dag and Teng, 2001). While high levels of perceived performance risk promote the influence of opportunistic behavior on coordination, low levels of performance risk reduce the influence of opportunistic behavior on coordination. The current study therefore proposes that the levels of perceived performance risk determine the influence of opportunistic behavior on coordination.

Lastly, though various fields of study including B2B relationship (Osmonbekov *et al*., 2016), complex projects (Chakkol *et al.*, 2018) and construction projects (Wang *et al.*, 2019) are familiar with the application of governance mechanisms, there is however, limited literature regarding BE governance in the sub Saharan African emerging markets. The study of BE is very relevant as it deviates from the normal upstream and downstream embedded in dyadic and triadic relationships which dominate the governance literature. The current study extends the body of governance literature, by examining how governance mechanisms influence BE coordination. The study again examines the mediating effect of opportunistic behavior on the influence of governance mechanisms on BE coordination. Finally, the study assesses the moderating role of perceived performance risk on the relationship between opportunistic behavior and BE coordination which to the best of our knowledge has not been fully addressed by previous research. Figure 1 represents the conceptual framework of the study.

2. Literature Review

2.1 Effect of Contractual Governance

Contractual governance according to Vandaele *et al*. (2007, p. 240), is "a formal, legal and economic governance strategy." Under contractual governance mechanism, parties agree to a formal contract that clearly specify the rules, rights and obligations of the exchange. The contractual governance rooted in TCE is an effective legal sanction mechanism that ensure coordination and mitigates opportunistic behavior (Wang et al., 2019; Osmonbekov *et al.,* 2016; Lui *et al*., 2009). A more complete contract handles disagreement, uncertainty and opportunism in exchange relationships (Zhou *et al*., 2008; Barthélemy and Quélin, 2006; Williamson, 1985a, 1985b). Previous studies have established the link between contractual governance and coordination in the business ecosystem (Pomegbe et al., 2022; Pomegbe et al., 2021), business to business relationship (Osmonbekov *et al*., 2016), open innovation networks (Clauss and Spieth, 2017), collaboration in complex projects (Chakkol et al., 2018), supply chain literature (Giannoccaro and Pontrandolfo, 2004), logistics management lexicon (Raue and Wieland, 2015) and distributions channels literature (Lyer and Villas-Boas, 2003). For instance, Giannoccaro and Pontrandolfo (2004) find that contracts are the most effective tool to ensure harmony and coordination in supply chain activities. Also, Osmonbekov *et al*. (2016) though found a

positive relationship between contractual governance and coordination, it was however not significant.

Even though, the TCE literature have established the effectiveness of a detailed contract to prevent opportunistic behavior and promote coordination of parties (Wang *et al.*, 2019; Lui *et al*., 2009; Williamson 1975), other studies in line with this study believe that detailed contract signals short term exchange relationship and ends up enhancing opportunistic behavior of stakeholders (Wang *et al.*, 2019; Gilliland *et al.*, 2010; Frazier and Rody, 1991). According to them, contracts expose an exchange relationship to opportunism because it allows stakeholders to take advantage of deficient or incomplete contracts (Eriksson and Laan, 2007; Lyer and Villas-Boas, 2003). For instance, Lyer and Villas-Boas (2003) revealed that contracts are not the most effective tool to prevent opportunism in distribution channels. Again, Watabaji (2014) also upheld this view and stated that overly detailed contracts create mistrust and encourage stakeholders to cheat. The study therefore hypothesized that;

H1: Contractual governance is positively related to BE coordination
H2: Contractual governance is positively related to opportunistic behavior

2.2 Effect of Relational Governance

Relational governance rooted in relational exchange theory (RET) relies on soft measures such as relational norms, shared values, commitment and trust to ensure coordination and prevent opportunistic behavior in an exchange relationship (Wang *et al.*, 2019; Poppo and Zenger, 2002; Macneil, 1980). Per RET, relational governance fosters total commitment-level of stakeholders to share adequate business information, engage in business decision and process (Tan and Cross, 2012; Yu *et al.*, 2006). Trust has been regarded as the bedrock of relational governance (Lui *et al.*, 2009). Relational governance is seen as effective when parties have enjoyed long term exchange relationship and established mutual trust (Wang *et al.*, 2019). Fehr and Gachter, (2000) stressed the relevance of relational governance in coordinating stakeholder activities and preventing opportunistic behavior. To them, parties who share common bond remain honest in their dealings with one another and are able to execute prior agreement harmoniously. Also, parties regulated by shared norms, values and trust are able to enjoy working with one another, achieve consensus, care about one another, share credible information and perform better in close cooperation (Khalfan *et al.*, 2007; Wuyts and Geyskens, 2005; Heide and John, 1992). Norms such as flexibility, solidarity, bilateral and self-enforcement embedded in relational governance limit stakeholders' inappropriate behavior or opportunism (Heide and John, 1992), establish common objectives (Lu *et al.*, 2015), resolve issues of ambiguity and uncertainty and minimize information asymmetries (Poppo and Zenger, 2002) and finally keep promises without external supervision (Cheng, 2013). Wagner (1995) suggests that parties with collectivist mind-set are more likely to form cooperative exchange relationship. Prior studies have also confirmed the significance of relational governance on project performance or coordination (Wang et al., 2019; Osmonbekov *et al*., 2016; Lui *et al.*, 2009; Morgan and Hunt, 1994) and prevent opportunistic behavior (Wang *et al.*, 2019; Xue *et al*., 2016). While empirical research on relational governance, opportunistic behavior and coordination has been conducted, further research is therefore needed at the BE level of analysis. The current study therefore hypothesizes that;

H3: Relational governance is positively related to BE coordination
H4: Relational governance is negatively related to opportunistic behavior

2.3 Mediating Role of Opportunistic Behavior

Opportunistic behavior is generally regarded as seeking one's self interest regardless of the other stakeholders' condition (Williamson, 1975). The current study based on a framework offered by Wathne and Heide (2000) view opportunistic behavior as risks pose by stakeholders' attitude such as evasion, refusal to adapt, violation and forced renegotiation in an exchange relationship. Coordination on the other hand demands that parties in an exchange relationship are committed and trust each other well enough to share relevant information, make business decisions and processes that enhance the joint effort of stakeholders (Tan and Cross, 2012).

The positive effect of governance mechanisms on cooperation or coordination (Osmonbekov *et al*. 2016; Lui *et al*., 2009) could be influenced by the opportunistic behavior of stakeholders. Previous studies on the influence of governance mechanisms on opportunistic behavior have suggested varied views. While scholars assert that contractual governance either promote coordination or inhibit stakeholder opportunism (Wang *et al*., 2019; Cao and Lumineau, 2015; Lui *et al*., 2009), other scholars also believe that relational governance can equally promote coordination or inhibit opportunistic behavior of stakeholders (Wang *et al.*, 2019; Xue *et al.*, 2016). Though majority of scholars contend that governance mechanisms are the most effective tool to restrict opportunistic behavior. Others have equally suggested, their effectiveness may differ based on context and application. Also, though scholars on one side assert that the use of overly detailed contracts reduce trust and embolden stakeholders to be opportunistic (Watabaji, 2014), others also argue that reliance on relational governance stand the chance of being abuse through opportunism (Dyer and Singh, 1998).

TCE suggests opportunistic behavior to negatively influence the performance of cooperative relationships

as stakeholders' collaboration performance depends on the joint effort of stakeholders (Wang *et al*., 2019; Lui *et al*., 2009). Stakeholders who behave opportunistically by evading, violating, refusing to adapt and forcing renegotiation of the terms stipulated in the contract make it difficult for harmony in an exchange relationship. Opportunistic behavior creates a situation where stakeholders do not have the confidence to share relevant or sensitive information, engage in meaningful business decisions and processes that enhance coordination (Jap and Anderson, 2003). This limits the effectiveness of the governance mechanisms on relationship performance or coordination. Empirical research has also established the negative mediating effect of opportunistic behavior in the relationship between governance mechanisms and parties' relationship performance or coordination (Wang *et al.*, 2019; Ahimbisibwe *et al*., 2012). For instance, Wang et al. (2019) found opportunism to mediate the relationship between governance mechanisms and project performance. In line with prior studies, the current study hypothesized that;

H5: Opportunistic behavior is negatively related to BE coordination.
H6a: Opportunistic behavior mediates the influence of contractual governance on coordination.
H6b: Opportunistic behavior mediates the influence of relational governance on coordination.

2.4 Moderating Role of Perceived Performance Risk

The success of exchange relationships thrives on stakeholders' cooperation; however, risk is inevitably eminent in such relationships. (Bazyar *et al*., 2013). Prior studies have also widely established the negative influence of opportunistic behavior on stakeholders' cooperation (Lui *et al.*, 2009). This means that stakeholders' opportunistic behavior has the tendency to jeopardize their coordination efforts. Stakeholders awareness of risk could be a critical missing link in explaining the influence of opportunistic behavior on coordination. Thus, the influence of opportunistic behavior on BE coordination could be enhanced or reduced based on their perception of performance risk. This is because, perceived performance risk, associated with factors such as incomplete information, system errors and human mistakes etc. (Dag and Teng, 2001) have the tendency to promote opportunistic behavior of stakeholders (Osmonbekov *et al*. 2016; Amiruddin *et al*. 2013). Since perceived performance risk and opportunistic behavior relates positively (Bazyar *et al*., 2013), their interaction effect on coordination is likely to be stronger negatively if perceived performance risk is high. On the contrary, the probability of stakeholders engaging in opportunistic behavior is likely to be low if perceived performance risk is low hence better coordination. This therefore means that stakeholders perception of performance risk determines their level of uncertainty and opportunistic behavior in the exchange relationship. We therefore hypothesized that;

H7: The negative relationship between opportunistic behavior and coordination is lower when perceived performance risk is low than when it is high.

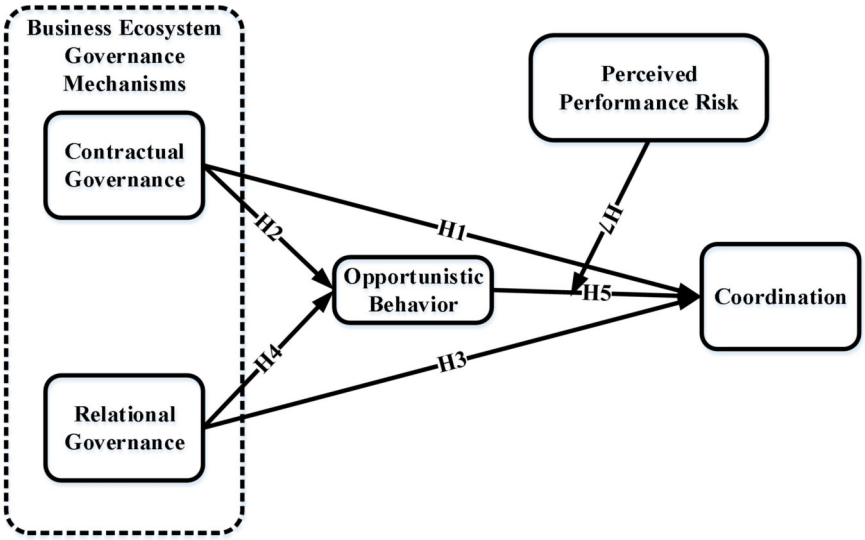

Figure 1. Conceptual Framework

3. Methods

3.1 Sample and Data Collection

The study sampled 173 institutions from the BE of pharmaceutical Company X in Ghana. The focal firm is one of the biggest pharmaceutical manufacturers in Ghana (PMAG, 2019). The focal firm was selected because it

was one of biggest manufacturers in Ghana, had over 50 years of operational experience, had 40 product lines, a member of the Ghana Club 100 prestigious and well-performing firms, and is also listed on the Ghana Stock Exchange. The researcher spent 20 weeks (5months) to gather the necessary data from the BE members, which were scattered across the globe. Pharmaceutical Company X helped with identifying the members in its BE, and also assisted in sending out the questionnaires to them, especially the international BE members. Table 1 represents the various stakeholders in the pharmaceutical BE used in this study.

Table 1. Pharmaceutical Company X' Business Ecosystem

Business Ecosystem	**Frequencies (*n*)**	**Percentages (%)**
Intermediaries	108	62.4
Suppliers	39	22.5
Co-Opetitors	10	5.8
Investors	7	4.0
Regulators	5	2.9
Research Institutions	4	2.3
Total	***173***	***100%***

3.2. Measurement of Variables

The study focused on five main variables, which were relational governance, contractual governance, opportunistic behavior, perceived performance risk, and coordination. Items of relational governance were adapted from Ferguson et al. (2005). Items of contractual governance were again adapted from Ferguson et al. (2005). Items of opportunistic behavior were adapted from You *et al.* (2018). The moderating variable of the study is perceived performance risk. The measures for the perceived performance risk were adapted from Christ and Nicolaou (2012). Coordination was assessed by business information coordination, decision coordination and process coordination. These dimensions were adapted from Tan and Cross (2012). In line with past studies, this study also controlled for age and size of the institutions in the BE. The size was measured by the number of employees, as was done by (Dogbe et al., 2020).

3.3. Reliability and Validity

The study conducted Confirmatory Factor Analysis (CFA) in Amos (v.23), and Table 2 presents the model fitness. Results demonstrated that, after number of modifications, model fitness was achieved for all indices. CMIN/DF was less than 3, GFI was greater than 0.8, TLI and CFI were greater than 0.9, RMSEA and RMR were less than 0.08 (Hair et al., 2010; Li et al., 2019).

Table 2. Confirmatory Factor Analysis

Fit Indices	**CMIN/DF**	**GFI**	**TLI**	**CFI**	**RMSEA**	**RMR**
Expected	≤ 3	≥ 0.8	≥ 0.9	≥ 0.9	≤ 0.08	≤ 0.08
Realized	2.110	0.892	0.955	0.961	0.058	0.061

To claim convergent validity, Average Variance Extracted (AVE) should be greater than 0.5, with Cronbach's alpha (CA) also being at least 0.7 (Fornell and Larcker 1981). These were achieved in Table 3. Finally, discriminant validity was assessed by comparing the square root of the AVE (√AVE) with the inter-correlation score. As indicated by Bamfo et al. (2018), to claim discriminant validity, the √AVE are expected to be higher than the respective inter-correlation scores. From Table 3, we realize that √AVE of all latent variables were greater than their respective inter-correlation scores, and therefore we conclude discriminant validity was achieved.

Table 3. Discriminant Validity

Variables	**AVE**	**α**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Age (1)	-	-	-						
Size (2)	-	-	0.469**	-					
REL (3)	0.544	0.840	0.225*	0.211*	**0.738**				
CON (4)	0.557	0.859	0.272*	0.337**	-0.477**	**0.746**			
OPP (5)	0.612	0.916	0.105	0.111	-0.506**	0.469**	**0.782**		
RISK (6)	0.540	0.843	0.214*	0.325**	0.515**	0.445**	0.458**	**0.735**	
COOR (7)	0.578	0.778	0.244*	0.288**	0.594**	-0.642**	-0.604**	0.463**	**0.760**

*** P-value significant at 1% (0.01); * P-value significant at 5% (0.05)*
√AVE are bold and underlined

4. Results and Discussion

The path coefficients were estimated using Structural Equation Modelling (SEM) approach in Amos (v.23). The estimation was based on Bias-Corrected (BC) Percentile Method, with 5000 Bootstrap sample and 95% Confidence level. The path coefficients were presented in Table 4 and Figure 2. Results pointed out that, age as a control variable had a significant positive effect on firm coordination among the pharmaceutical BE ($\beta = 0.101; C.R. = 3.012$). This suggests that older institutions we able to coordinate better than younger institutions. Firm size had a positive but insignificant effect on coordination among the pharmaceutical BE members ($\beta = 0.019; C.R. = 0.931$).

For the main paths, it was ascertained that contractual governance had a significant positive effect on firm coordination among pharmaceutical BE members ($\beta = 0.440; C.R. = 3.680$). This suggests that contractual governance actually enhanced coordination among BE members. Having relationships governed primarily by written rules and regulations, clearly stating the criteria and process for satisfactory resolution of disagreement, clearly stating the adjustment of terms due to changes in cost with our partner, and clearly stating changes as partners business changes, were very essential for coordination among the pharmaceutical BE members. Hypothesis *H1: Contractual governance is positively related to BE coordination*, was therefore accepted. This study resonates with other studies (Pomegbe et al., 2022; Pomegbe et al., 2021; Chakkol et al., 2018; Osmonbekov *et al*., 2016) that confirmed the positive effect of contractual governance on firm coordination. Further, contractual governance had a significant positive effect on opportunistic behavior among pharmaceutical BE ($\beta = 0.259; C.R. = 3.060$). This demonstrates that having relationships governed by explicit rules and regulations causes partners to seek for loopholes to exploit the relationship. This therefore increases opportunistic behavior among partners. Hypothesis *H2: Contractual governance is positively related to opportunistic behavior*, was therefore accepted. This study further corroborates the assertion of other studies (Pomegbe et al., 2021; Eriksson and Laan, 2007; Lyer and Villas-Boas, 2003) which stated that overly detailed contracts create mistrust and encourage stakeholders to cheat.

It was identified that relational governance had a significant positive effect on BE coordination ($\beta = 0.516; C.R. = 3.696$). Having business relationship government by shared norms, mutual benefits, and trust, is essential for coordination. Hypothesis *H3: Relational governance is positively related to BE coordination*, was therefore accepted. Results indicated that, relational governance had a significant negative effect on opportunistic behavior among pharmaceutical BE members ($\beta = -0.399; C.R. = -3.609$). That is, high relational governance reduced opportunistic behavior among BE members. Relational governance helps BE members to work together to resolve disagreement as they occur, work with partners to forestall problems, to remain committed to helping partners succeed, to assist partners improve their performances, to negotiate adjustments to charges, and to provide timely and accurate information to partners. Hypothesis *H4: Relational governance is negatively related to opportunistic behavior*, was therefore accepted. This study again upholds other studies (Pomegbe et al., 2022; Pomegbe et al., 2021; Wang *et al.*, 2019; Poppo and Zenger, 2002) which stated that relying soft measures such as shared norms, commitment and trust promote coordination among firms in the business ecosystem.

Results further demonstrated that opportunistic bahavior had a significant negative effect on BE coordination in the pharmaceutical sector ($\beta = -0.378; C.R. = -3.203$). Opportunistic tendencies therefore break coordination among BE members. Opportunistic tendencies such as incompletely disclosing information to partners, misrepresentation of ability in order to increase gain, withholding full effort in cooperative relationship, etc., will reduce coordination. Hypothesis *H5: Opportunistic behaviour is negatively related to BE coordination*, was therefore accepted. Hence, the study supports other studies (Pomegbe et al., 2021; Wang et al., 2019; Xue *et al*., 2016) that that revealed that opportunistic behavior prevents BE coordination.

In determining the mediating role of opportunistic behavior, the indirect effects were calculated and presented in Table 4. The coefficient of the indirect effect of contractual governance on BE coordination, through opportunistic behavior was -0.098, which was statistically insignificant, as the lower BC was negative and upper BC was positive. By this, zero (0) could be located in-between the lower and upper BCs. Opportunistic behavior therefore did not mediate the relationship between contractual governance and BE coordination in the pharmaceutical sector. Hypothesis *H6a: Opportunistic behavior mediates the influence of contractual governance on coordination*, was therefore rejected. This study therefore confirms other studies (Lee and Cavusgil, 2006; Lu et al., 2015; Wu et al., 2007) which state that detailed contract between parties is not an effective means of preventing opportunistic behavior whereby ensuring coordination. The coefficient of the indirect effect of relational governance on coordination, through opportunistic behavior was 0.151, which was statistically significant, as both lower and upper BCs were all positive. Since relational governance had a direct significant effect on BE coordination, the mediating effect of opportunistic behavior is said to be partial.

Hypothesis *H6b: Opportunistic behavior mediates the influence of relational governance on coordination*, was therefore accepted. This study therefore support other studies (Pomegbe et al., 2021; Wang et al., 2019) that confirms the mediating role of opportunistic behaviour in the relationship between relational governance and firm coordination.

Table 4. Direct and Mediation Path Estimates

Direct Paths	UnStd. Estimate	S.E.	C.R.
Age → COOR	0.101	0.034	3.012**
Size → COOR	0.019	0.021	0.931
CON → COOR	0.440	0.120	3.680**
CON → OPP	0.259	0.085	3.060**
REL → COOR	0.516	0.140	3.696**
REL → OPP	-0.399	0.111	-3.609**
OPP → COOR	-0.378	0.118	-3.203**
RISK → COOR	-0.258	0.060	-4.299**
RIS_OPP → COOR	-0.206	0.098	-2.102*
Indirect Effect		***Lower BC***	***Upper BC***
CON → OPP → COOR	-0.098	-0.034	0.191
REL → OPP → COOR	0.151	0.060	0.298

5000 Bootstrap Bias-Corrected Confidence Interval at 95%

*** P-value significant at 1% (0.01); * P-value significant at 5% (0.05)*

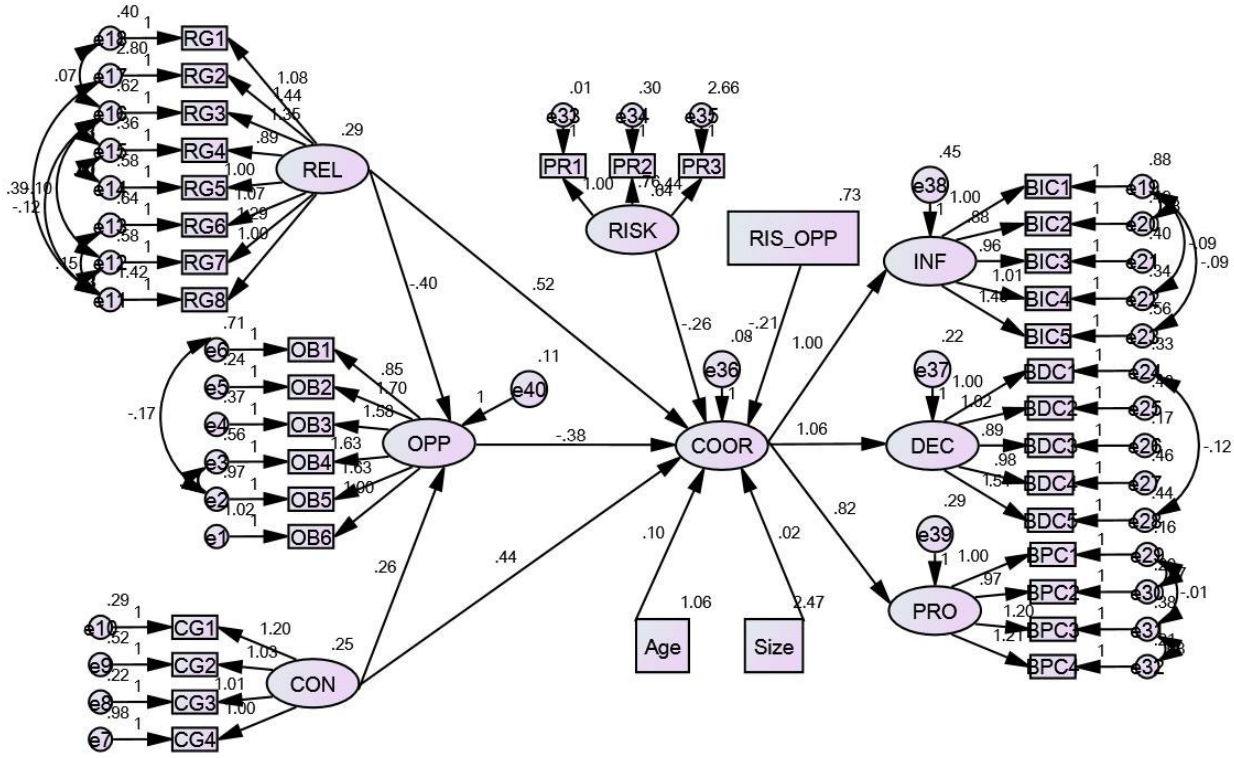

Figure 2: Structural Equation Model

To ascertain the moderating effect of perceived risk performance, an interaction term was calculated using mean centring approach. From Table 4, it was realized that perceived performance risk had a significant negative effect on BE coordination within the pharmaceutical industry ($\beta = 0.258; C.R. = -4.299$). This implies that high perceived performance risk reduced coordination among the BE members. The interaction term (RIS_OPP) also had a significant negative effect on BE coordination within the pharmaceutical industry ($\beta = -0.206; C.R. = -2.102$). This suggests that the negative effect of opportunistic behavior on BE coordination is further enhanced, when perceived performance risk is high. That is, perceived performance risk further deteriorates the negative relationship between opportunistic behavior and BE coordination. Figure 3 adds

clarity to these relationships. From the figure, highest score for coordination was achieved when both perceived performance risk and opportunistic behavior were low (blue line). On the contrary, the score of coordination was at its lowest when both perceived performance risk and opportunistic behavior were all high (orange line). This demonstrates the role of perceived performance risk in deteriorating the negative effect of opportunistic behavior on pharmaceutical BE coordination. Hypothesis *H7: The negative relationship between opportunistic behaviour and coordination is lower when perceived performance risk is low than when it is high,* was accepted. This study supports other studies that stated that parties with much information on the deficiencies of their partners' performance might opt to take advantage of these deficiencies for their maximum gain (Frazier and Rody, 1991).

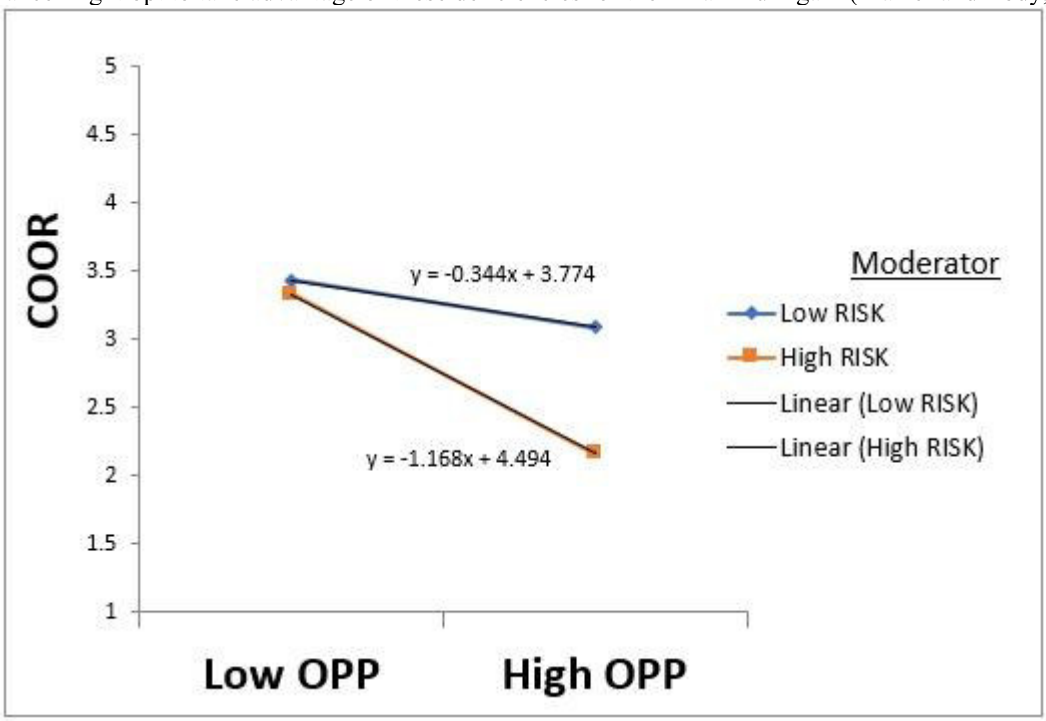

Figure 3: Structural Equation Model

5. Conclusion

This study sought to examine the effect of governance mechanisms on coordination in the pharmaceutical BE in the sub-Saharan African emerging market. The study also assessed the mediating roles of opportunistic behaviour and the moderating role of perceived performance risk. The study revealed that both governance mechanisms (relational and contractual) had positive and significant effect on coordination. Though, other studies' result support the mediating effect of opportunistic behaviour in the relationship between governance mechanisms and performance related outcomes, the current study revealed that opportunistic behaviour only mediates in the relationship between relational governance and coordination whiles opportunistic behaviour did not play a mediating role in the relationship between contractual governance and coordination. Again, the study revealed that the negative relationship between opportunistic behaviour and coordination is lower when perceived performance risk is low than when it is high.

Recently, there have been many studies (Pomegbe et al., 2022; Pomegbe et al., 2021; Osmonbekov et al., 2016) conducted to assess the influence of governance mechanisms on performance related outcomes and its associated mediating variables. Though these studies have assessed the direct effect of governance mechanisms and mediating variables on performance related outcome, not much of these studies attempted to assess the effect of moderating variables on the relationship between opportunistic behaviour and coordination. The current study therefore introduced the perceived performance risk as a moderating variable to assess, how information asymmetry, inequity, human mistakes and lack of competence stakeholder firms enhance or reduce the opportunistic behaviour of stakeholder firms. The current study thus contributes to the BE literature by the introduction of the perceived performance risk.

The current study also made some managerial implications. From the analysis, it was realized that the coefficient between relational governance and coordination is higher than the relationship between contractual governance and coordination. Based on these results, it would seem wise for managers to train their contact persons to use relational governance as opposed to contractual governance whenever possible. This will therefore represent a significant increase in the focal firms' effort to train its contact persons in using soft measures as stakeholder will prefer the use of these measures to safeguard their relationship instead of relying on

formal contract to influence their behaviour. Despite the fact that socially enforcing a contract is undoubtedly more time-consuming for the focal firms, focal firm should resist the temptation to solve their issues with stakeholders in a unilateral fashion, as contractual enforcement is likely to result in increased feelings of opportunism by the stakeholders.

6. Recommendations

The study also proposes that governance mechanisms directly affect the coordination of BE stakeholders, and uses opportunistic behavior, perceived performance risk as mediator and moderator variables respectively. Nevertheless, the influence of governance mechanisms on BE coordination could be affected by other mediating and moderating variables. Future research can therefore focus on other influencing variables like information asymmetry, environmental uncertainty, relational risk etc.

The current study focused on governance mechanisms as substitute rather than complementary to determine their individual effect on coordination in the context of BE. Though, this is one of the few studies that assessed relational and contractual governance in the Ghanaian Pharmaceutical BE, the study believes that results obtained could have been different if the constructs were adopted as complementary. Hence, future studies should pay attention to the complementary use of the governance mechanisms as was done by Wang et al. (2019) and Poppo and Zenger (2002) on BE coordination.

Again, as was done by other scholars like Wang et al. (2019) to assessed the effectiveness of the various governance mechanisms at different stages in mega construction projects in China, this study nonetheless did not evaluate the effectiveness of governance mechanisms at different stages. Future research could pay much attention on the effectiveness of governance mechanisms at various stages of the exchange relationship in the context of BE.

Declaration of Interest

We declare that there was no potential or real conflict of interest that could affect the reliability of the study.

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