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THE NEXUS OF HUMAN RESOURCE PRACTICES, SOCIAL BONDS, SUPPLY CHAIN COLLABORATION AND ORGANIZATIONAL CULTURE IN REDUCING SUPPLY CHAIN OPPORTUNISTIC BEHAVIOR TENDENCIES

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ABSTRACT

Objective: To investigate the nexus of human resource practices, social bonds, supply chain collaboration, and organizational culture in mitigating opportunistic behavior tendencies in crop seed enterprises supply chains.

Theoretical Framework: Study was guided by social exchange and transaction cost economics theories. Supply chain relationships are formed and based on subjective cost-benefit analysis. Further supply chain relationships are formed, shaped and sustained by the goal to minimize transaction costs.

Method: The methodology was a survey of crop seed enterprises registered in Kenya as at 2023. It was a census study of 143 enterprises. Quantitative data approach was employed to test relationships among the variables of the study. Primary data was collected from supply chain heads, operations officers or their equivalents in public and private seed companies.

Results and Discussion: The findings revealed that uncertainty avoidance culture combined with the other variables, reduces opportunistic behavior significantly while social bonds increase opportunistic behavior significantly and collaboration and human practices increases opportunistic behavior insignificantly. Power distance culture has a significant effect of increasing opportunistic behavior when combined with the three variables while the effect of the other variables is insignificant.

Research Implications: The practical implication is that crop seed enterprises should embrace uncertainty avoidance as opposed to power distance culture to reduce opportunistic behavior while minimizing over exposure during social interactions with their partners.

Originality/Value: This study contributes to literature by showing the combined effect of four behavioral aspects on opportunistic behavior in supply chains as opposed to independent effect of each variable.

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O NEXO ENTRE PRÁTICAS DE RECURSOS HUMANOS, VÍNCULOS SOCIAIS, COLABORAÇÃO NA CADEIA DE SUPRIMENTOS E CULTURA ORGANIZACIONAL NA REDUÇÃO DAS TENDÊNCIAS DE COMPORTAMENTO OPORTUNISTA NA CADEIA DE SUPRIMENTOS

RESUMO

Objetivo: Investigar o nexo entre as práticas de recursos humanos, os vínculos sociais, a colaboração na cadeia de suprimentos e a cultura organizacional na mitigação das tendências de comportamento oportunista nas cadeias de suprimentos das empresas de sementes agrícolas.

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Estrutura Teórica: O estudo foi orientado pelas teorias da troca social e da economia dos custos de transação. As relações da cadeia de suprimentos são formadas e baseadas na análise subjetiva de custo-benefício. Além disso, as relações da cadeia de suprimentos são formadas, moldadas e sustentadas pelo objetivo de minimizar os custos de transação.
Método: A metodologia foi uma pesquisa de empresas de sementes agrícolas registradas no Quênia em 2023. Foi um estudo de censo de 143 empresas. A abordagem de dados quantitativos foi empregada para testar as relações entre as variáveis do estudo. Os dados primários foram coletados dos chefes da cadeia de suprimentos, oficiais de operações ou seus equivalentes em empresas de sementes públicas e privadas.
Resultados e Discussão: Os resultados revelaram que a cultura de prevenção de incertezas, combinada com as outras variáveis, reduz significativamente o comportamento oportunista, enquanto os laços sociais aumentam significativamente o comportamento oportunista e a colaboração e as práticas humanas aumentam o comportamento oportunista de forma insignificante. A cultura de distância do poder tem um efeito significativo de aumento do comportamento oportunista quando combinada com as três variáveis, enquanto o efeito das outras variáveis é insignificante.
Implicações da Pesquisa: A implicação prática é que as empresas de sementes de culturas devem adotar a cultura de evitar incertezas em vez da cultura de distância do poder para reduzir o comportamento oportunista e, ao mesmo tempo, minimizar a superexposição durante as interações sociais com seus parceiros.
Originalidade/Valor: Este estudo contribui para a literatura ao mostrar o efeito combinado de quatro aspectos comportamentais sobre o comportamento oportunista nas cadeias de suprimentos, em vez do efeito independente de cada variável.

Palavras-chave: Comportamento Oportunista, Cultura Organizacional, Cadeia de Suprimentos, Práticas de Recursos Humanos.

EL NEXO DE LAS PRÁCTICAS DE RECURSOS HUMANOS, LOS VÍNCULOS SOCIALES, LA COLABORACIÓN EN LA CADENA DE SUMINISTRO Y LA CULTURA ORGANIZATIVA EN LA REDUCCIÓN DE LAS TENDENCIAS DE COMPORTAMIENTO OPORTUNISTA EN LA CADENA DE SUMINISTRO

RESUMEN
Objetivo: Investigar el nexo de las prácticas de recursos humanos, los vínculos sociales, la colaboración en la cadena de suministro y la cultura organizativa en la reducción de las tendencias de comportamiento oportunista en las cadenas de suministro de las empresas de semillas de cultivos.
Marco Teórico: El estudio se guió por las teorías del intercambio social y la economía de los costes de transacción. Las relaciones en la cadena de suministro se forman y se basan en un análisis subjetivo de costes y beneficios. Además, las relaciones en la cadena de suministro se forman, configuran y mantienen con el objetivo de minimizar los costes de transacción.
Método: La metodología consistió en un estudio de las empresas de semillas de cultivos registradas en Kenia en 2023. Se trataba de un estudio censal de 143 empresas. Se empleó un enfoque de datos cuantitativos para comprobar las relaciones entre las variables del estudio. Se recopilaron datos primarios de los responsables de la cadena de suministro, los responsables de operaciones o sus equivalentes en empresas de semillas públicas y privadas.
Resultados y discusión: Los resultados revelaron que la cultura de evitación de la incertidumbre, combinada con las demás variables, reduce significativamente el comportamiento oportunista, mientras que los vínculos sociales aumentan significativamente el comportamiento oportunista y la colaboración y las prácticas humanas aumentan insignificantemente el comportamiento oportunista. La cultura de la distancia de poder tiene un efecto significativo de aumento del comportamiento oportunista cuando se combina con las tres variables, mientras que el efecto de las otras variables es insignificante.
Implicaciones de la Investigación: La implicación práctica es que las empresas de semillas de cultivos deberían adoptar la evitación de la incertidumbre frente a la cultura de la distancia de poder para reducir el comportamiento oportunista y minimizar al mismo tiempo la sobreexposición durante las interacciones sociales con sus socios.
Originalidad/Valor: Este estudio contribuye a la literatura al mostrar el efecto combinado de cuatro aspectos conductuales sobre el comportamiento oportunista en las cadenas de suministro en contraposición al efecto independiente de cada variable.

Keywords: Opportunistic Behavior, Organizational Culture, Supply Chain, Human Resource Practices.

1 INTRODUCTION

The growing global integration of economic sectors since the 1990s has led to the growth of the supply chain and logistics. Vidrova (2020) defined the supply chain as connecting consumers and producers. Consequently, sourcing, manufacturing/production, warehousing, distribution, or delivery to the final customer started being managed from a single viewpoint (Shih, 2020). Juneja (2018) postulated that supply chain management plays an instrumental role in increasing the interconnectedness of firms. Therefore, companies need to understand the significance of implementing effective supply chain processes in this era of globalization. Firms working together in a supply chain benefit more than when working individually. Such firms enjoy higher economies of scale, share assets, and information, and plan jointings to maximize their supply chain surplus.

When partners work together in a supply chain, negative consequences are also manifest majorly in the form of opportunistic tendencies. Opportunistic behavior is dishonesty in transactions, as evidenced by self-interest seeking with guile (Williamson, 1975). Parties that engage in opportunistic behavior make calculated efforts to mislead, distort, disguise, or confuse their partners to take advantage of them. Further, such parties refuse to adapt to changes in the business world and bluntly violate contractual obligations (Wathne & Heide, 2000)

Due to the deceit-oriented character, opportunistic behavior can create numerous business risks. Luo (2006) argued that such conduct could increase transaction costs, disrupt confidence, heighten coupling uncertainty, and hamper reciprocity. Further, Gassenheimer et al. (1996) found that opportunism might damage the collaboration between franchisees, while Liu et al. (2021), in a study on engineering projects, found that contractors' opportunistic behavior had a significant negative impact on the value added in engineering projects. Despite the negative consequences of opportunistic behavior, there is no consensus on the factors inducing opportunistic behavior (Liu et al., 2021). Moreover, many studies have focused on mitigating the consequences of opportunistic behavior. Hence, the focus of this study is to extend the boundaries of knowledge in uncovering the causes and developing solutions to the root causes.

1.1 OBJECTIVES OF THE STUDY

The overall objective of the study was to investigative the combined effect of human resource practices, social bonds, organizational and collaboration in reducing opportunistic behavior. Specifically, the study was guided by the following specific objectives;

1. Human resource practices pursued by supply chain members reduce opportunistic behavior
2. Social bonds of supply chain members reduce opportunistic behavior tendencies of members
3. Organizational culture type pursued by supply chain members has the effect of reducing or increasing opportunistic behavior
4. Supply chain collaboration has the effect of reducing opportunistic behavior.

2 THEORETICAL FRAMEWORK

Transaction cost economics (TCE) and social exchange (SE) theories are used in this study. Overly, TCE is premised on the assumption that people will engage in opportunism given an opportunity. Literature has documented six determinants of opportunism: bounded rationality, governance structures, frequency of transactions, uncertainty, and small numbers trading (Grover & Malhotra, 2017). Under conditions of market uncertainty, market players engage in opportunism for short-term gain at the expense of future gains that cannot be guaranteed (Paswan, 2009). Furthermore, formal governance structures in business exchange relationships minimize opportunistic behavior tendencies while increasing transaction frequency increases trust and commitment, minimizing opportunistic behavior.

Studies on the determinants of opportunistic behavior have yielded contradicting findings. Some have found that environmental uncertainty increases opportunism (Paswan & Wittmann, 2009; Ting et al., 2007), whilst others have found a decrease (Paswan, 2009) or insignificant relationship (Handley & Benton, 2012). On culture, a lack of cultural awareness or sensitivity may escalate opportunism due to misinterpretation of verbal and non-verbal communication (Das & Rahman, 2010; Johnson et al., 1996). On the other hand, some studies show that collaboration and some cultural dimensions reduce opportunism (Ali & Larimo, 2016), whilst others increase opportunism (Stump & Joshi, 1999).

Relational norms reduce opportunistic behavior in exchange relationships, such as supply chain relationships. Relational norms are positive behaviors such as trust, information sharing, commitment, cooperation, and conflict resolution (Gundlach et al., 1995). Sharing the right information on time encourages transparency, eliminating opportunism (Ali & Larimo, 2016). While some studies have established that relational norms reduce opportunism (Ali and (Guan et al., 2020; Zhou et al., 2015), others have found an insignificant relationship (Lai et al., 2012; Tangpong et al., 2010).

2.1 HYPOTHESIS AND CONCEPTUAL FRAMEWORK

From the forgoing literature on determinants of opportunistic behavior, the following hypotheses were derived to guide this study from which the conceptual framework to guide the study as appears in Figure 1 was derived;

Ha: Human resource practices reduce opportunistic behavior

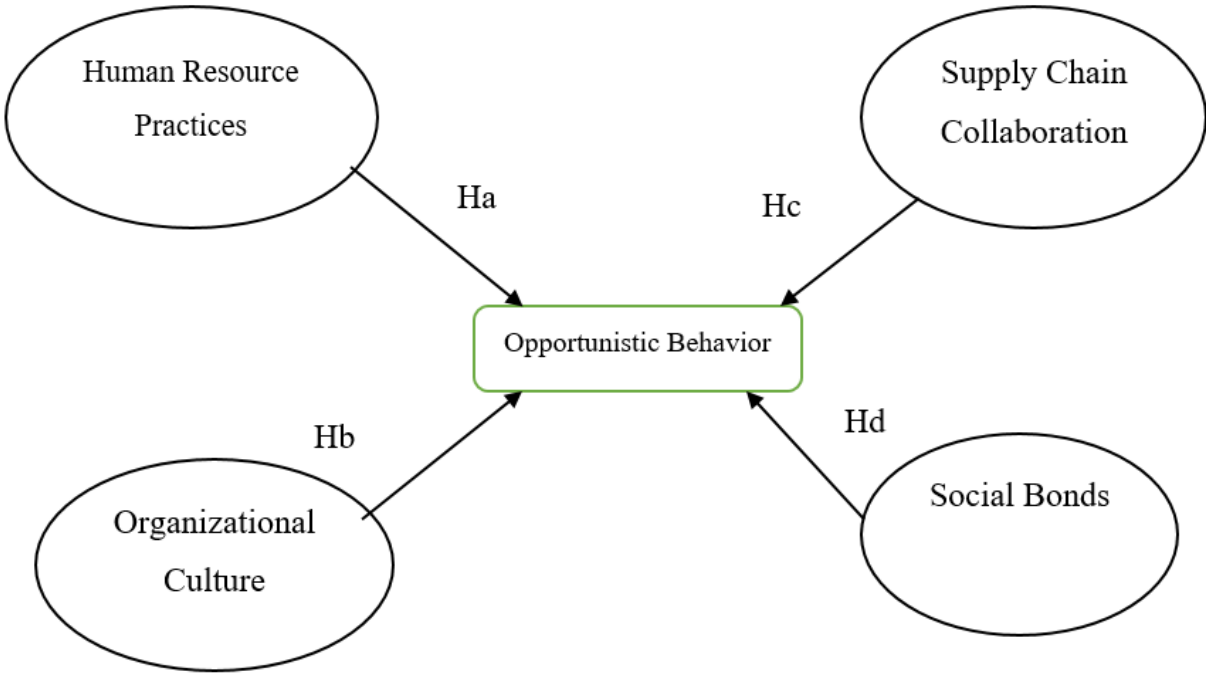
Hb: Some organization culture types reduce opportunistic behavior while others do not

Hc: Supply chain collaboration reduces opportunistic behavior

Hd: Social bonds (relational norms) reduces opportunistic behavior

Figure 1

Conceptual Framework



3 METHODOLOGY

A descriptive cross-sectional survey was used for the study. Survey research has been identified as the most dominant approach in supply chain management research. Through a literature review, Soni and Kodali (2012) posit that more than half of empirical research done in supply chain management employed a survey strategy. A survey strategy is ideal for quantitative research where law-like generalizations can be derived from data patterns. The study population comprised all 143 crop seed companies in Kenya registered by Kenya Plant Health and Inspectorate Service (KEPHIS) as of the end of April 2023 (KEPHIS, 2024). Due to the small number of crop seed enterprises, the study was a census study.

3.1 DATA COLLECTION

The study employed primary quantitative data collected from supply chain managers, procurement managers, or their equivalents, depending on the size of the enterprise. 116 seed companies responded to the data collection tool, which yielded a response rate of 81%. Three categories of firms responded to the study: government parastatals at 7.8%, multinational seed companies at 27.6%, and private local seed companies at 64.7%.

3.2 DATA ANALYSIS

The collected data was cleaned to remove outliers and ensure all entries were complete. Then, the data was subjected to a reliability test. All constructs had a reliability score of > 0.70. The first data collection phase involved factor analysis to reduce the variables to a few themes. In the second phase, data was analyzed using structural equation modeling.

4 RESULTS AND DISCUSSION

The study aimed at finding whether four constructs, collaboration, social bonds/relational norms, organizational culture, and human resource practices when combined has the effect of reducing opportunistic behavior in crop seed supply chains. The data obtained was first subjected to Kaiser-Meyer-Olkin (KMO) for sampling adequacy, and later Bartlett

tests for the adequacy of the correlation matrix to confirm if factor analysis could be used to analyze the data. The results of the KMO and Bartlett tests are contained in Table 1.

All four constructs had KMOs greater than 0.60 (good), implying the nonexistence of partial correlation between the variables of each construct. Specifically, collaboration, human resource practices, organization culture, and social bonds had KMOs of 0.84, 0.76, 0.79, and 0.80, respectively. Bartlett's test of Sphericity was significant for all constructs, implying that the variables for each construct were not related and, hence, ideal to be reduced through factor analysis.

Table 1

KMO and Bartlett test output for collaboration, Supply chain socialization, organizational culture, and human resource Practices

Test	Collaboration	Human Resource	Organizational Culture	Social Bonds
Kaiser-Meyer-Olkin (KMO)	0.84	0.76	0.79	0.80
Bartlett test of Sphericity				
Chi-square test	2450.80	386.10	2480.97	687.85
Df	378	45	406	91
Sig.	(<0.001)	(<0.001)	(<0.001)	(<0.001)

The data had 116 respondents with 140 variables to capture human resource practices, organizational culture, social bonds, collaboration, and opportunistic behavior. Due to the large number of measurement variables, factor analysis was employed to reduce them for further analysis. Varimax rotation was used in the study for factor analysis. After varimax rotation, each factor was found to be associated with a small number of variables. Hence, overall, each construct had only a few principal factors or measurement variables to explain variation in the construct. The factor analysis of the four variables of the study are presented in the sections that follow.

4.1 HUMAN RESOURCE PRACTICES FACTORS

The Human Resource Practices (HRP) measurement variables were subjected to factor analysis, yielding only three principal factors. The three principal factors were interpreted to be Employee Empowerment (EEM), Flexible Workforce (FLW), and Teamwork (TWO), respectively. The three factors were used for the HRP construct for further analysis using structural equation modeling.

4.2 ORGANIZATIONAL CULTURE FACTORS

Organizational culture had the highest number of measurement variables, at 29. These were developed to ensure that all possible organizational culture types expected to be prevalent in all the seed enterprises were measured during data collection. The factor analysis output summarized the 29 variables into four principal prevalent organizational culture types. The themes were associated with the following organizational cultures; power distance (PDI), uncertainty avoidance (UAV), long-term orientation (LOT), and collectivist culture (COLL).

4.3 SOCIAL BONDS

Social bonds or relational norms had 14 measurement variables, which were reduced to only four principal factors. The four were interpreted to be Institutional Trust (IT), Team Cohesion (TCO), Social Bonds (SBO), and Characteristics-based Trust (CBT). The four factors identified formed the basis for detailed further analysis.

4.4 SUPPLY CHAIN COLLABORATION

Factor analysis done on collaboration measurement variables uncovered six principal factors, namely, Knowledge and Information Sharing (KIS), Information Communication Technology (ICT), Asset Sharing (AS), Communication (COM), Joint Planning (JPL), and New Product Development (NPD). The six principal factors were used to analyze the data further using structural equation modeling.

4.5 OPPORTUNISTIC BEHAVIOR

Measurement variables for opportunistic behaviour were 12. When factor reduction was applied to the variables, the analysis collapsed the 12 measurement variables into only 3 variables. The variables represented three main themes, namely, Dishonest Behaviour (DB), Contract Breaching (CB), and Honest Behaviour (HB). The three variables were used to analyze the data further using structural equation modeling.

4.6 OPPORTUNISTIC BEHAVIOUR PREDICTIVE OVERALL MODEL

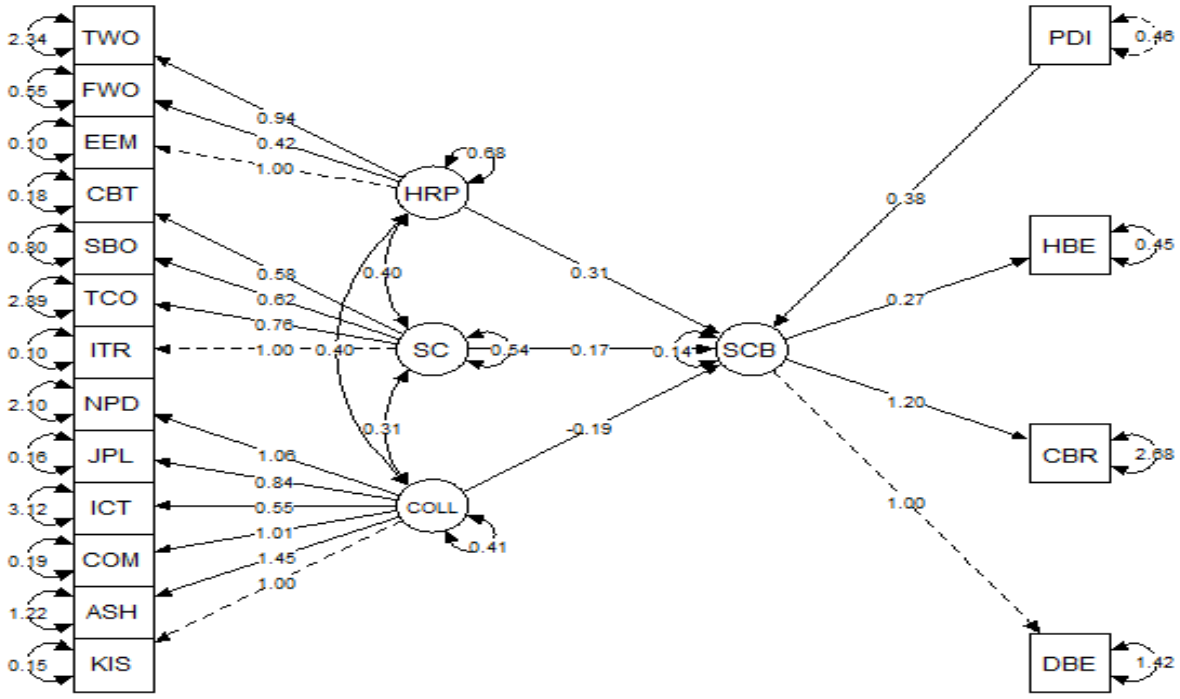
The four independent variables, collaboration, **social bonds**, human resource practices, and organizational culture, were all combined in one model to assess how they determined the opportunistic behavior of crop seed supply chains in Kenya. Four organizational culture types were identified during factor analysis: power distance, uncertainty avoidance, long-term orientation, and collectivism. The overall model was thus run in four iterations so as to gauge the effect of each culture type when combined with collaboration, **social bonds**, and human resource variables.

4.6.1 Model 1: collaboration, supply chain socialization, human resource practices and power distance culture

A structural equation model (SEM) model was run for collaboration, **social bonds**, human resource practices, and power distance culture to determine their combined influence on the opportunistic behavior of crop seed enterprises. The overall SEM model with associated path coefficients is presented in Figure 1. The model shows that three paths of the independent variables had positive path coefficients. **Supply chain socialization**, Human Resource Practices, and Power Distance Culture had path coefficients of 0.17, 0.31, and 0.38, respectively. Collaboration to opportunistic behavior path had a negative path coefficient of -0.19. The findings disclose that collaboration reduces opportunistic behavior when combined with the other variables, while the other variables increase opportunistic behavior. However, the relationships are weak because the path coefficients are close to zero.

Figure 2

SEM overall model for collaboration, social bonds, human resource practices, and power distance culture



The four variables' multiple regression analysis results are contained in Table 2. Details from the analysis identified Power Distance culture at a p-value of 0.012 as the only significant predictor of opportunistic behavior. The other three variables, Collaboration, **social bonds**, and human resource practices, were deemed insignificant predictors. The pursuit of power distance culture increases the tendency of crop seed enterprises to engage in opportunistic behavior even when they collaborate, have congruent human resource practices, or are strong on matters of social capital. The overall prediction power of the model r^2 was 49%.

Table 2

Opportunistic behavior antecedents predictive model controlled for power distance culture

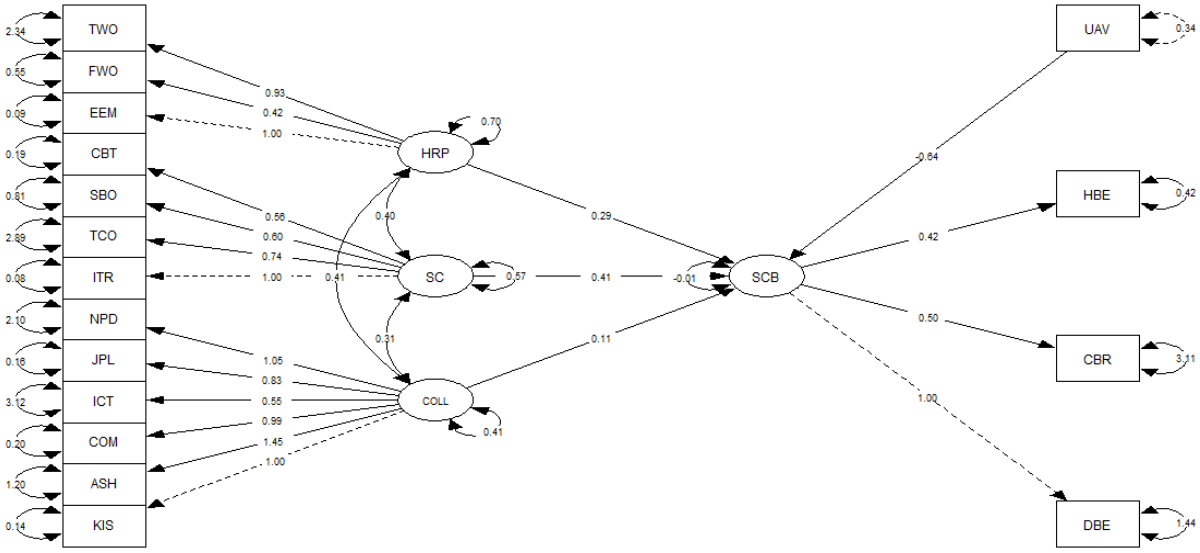
	Lhs	Op	RHS	label	est	Se	Z	P value	ci. lower	ci. upper
1	SCB	~	COLL	s1	-0.189	0.284	-0.668	0.504	-0.745	0.366
2	SCB	~	SC	s2	0.168	0.196	0.856	0.398	-0.216	0.552
3	SCB	~	HRP	s3	0.314	0.241	1.304	0.192	-0.158	0.786
4	SCB	~	PDI	s4	0.377	0.150	2.512	0.012	0.083	0.671

4.6.2 Model 2: collaboration, social bonds, human resource practices and uncertainty avoidance culture

The overall SEM model path diagram is presented in Figure 2. The diagram reveals that three independent variables - collaboration, **social bonds**, and human resource practices had positive path coefficients at 0.11, 0.41, and 0.29, respectively, while uncertainty avoidance culture had a negative path coefficient of -0.64. The findings indicated that when the model had an uncertainty avoidance culture, collaboration did not reduce but increased opportunistic behavior, though to a very small extent. However, uncertainty avoidance contributed significantly to a reduction of opportunistic behavior.

Figure 3

*SEM overall model for collaboration, **social bonds**, human resource practices, and uncertainty avoidance culture*



A multiple regression of the four variables was also developed. The results of the predictive model are contained in Table 3, which shows that **social bonds** and uncertainty avoidance culture were the only significant predictors of opportunistic behavior at p-values of 0.032 and 0.000 and slope coefficients of 0.411 and -0.638, respectively. The findings position **supply chain socialization** as a catalyst for opportunistic behavior when an uncertainty avoidance culture is present. On the other hand, uncertainty avoidance culture reduces opportunistic behavior when all other variables are present. The seed sector faces lots of uncertainty due to reliance on rain-fed seed production and the influx of pests and diseases.

Hence, to reduce the tendency to engage in opportunistic behavior, the firms need to embrace an uncertainty avoidance culture while reducing levels of collaboration and socialization. The overall explanation power of the revised model changes to r^2 of 47%.

Table 3

Opportunistic behavior predictive model controlled for uncertainty avoidance culture

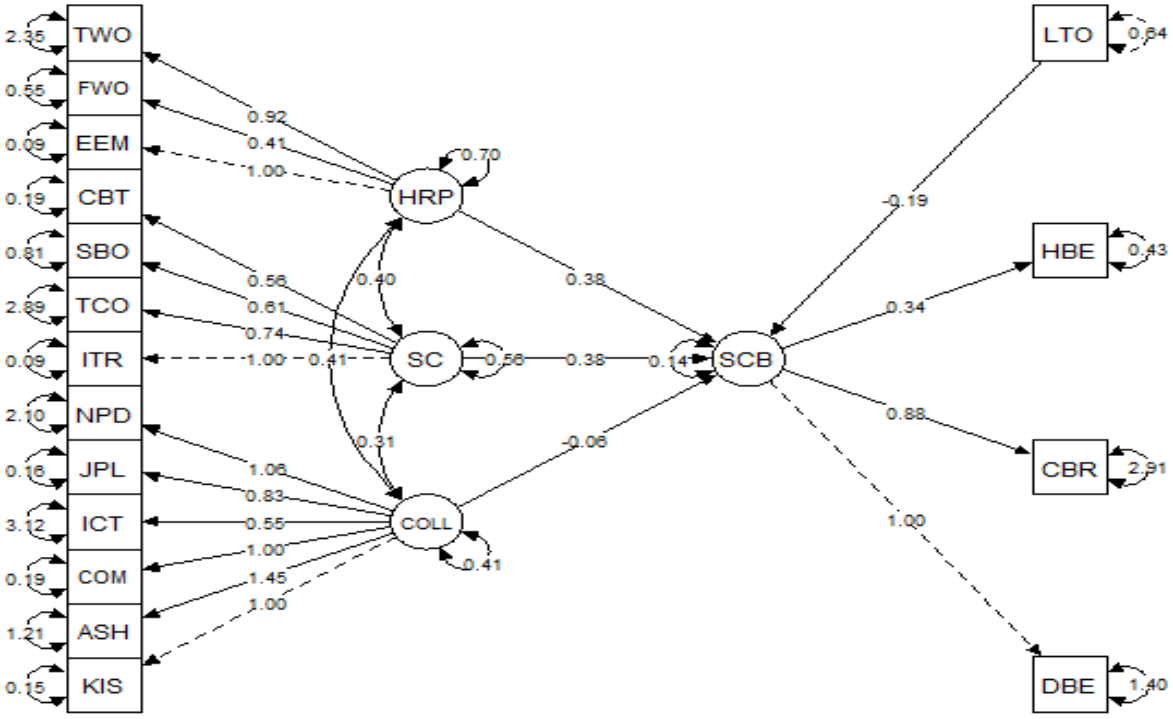
	Lhs	Op	RHS	label	Est	Se	z	pvalue	ci.lower	ci.upper
1	SCB	~	COLL	s1	0.114	0.272	0.421	0.674	-0.419	0.647
2	SCB	~	SC	s2	0.411	0.192	2.143	**0.032**	0.035	0.787
3	SCB	~	HRP	s3	0.291	0.220	1.321	0.186	-0.141	0.723
4	SCB	~	UAV	s4	-0.638	0.162	-3.949	**0.000**	-0.955	-0.321

4.6.3 Model 3: opportunistic behavior predictive model controlled for long term orientation organizational culture

The three variables were further controlled for Long Term Orientation culture. The SEM path coefficient diagram was extracted to analyze the relationships between the dependent and independent variables when long term orientation culture was introduced as the fourth variable. The SEM path diagram shows that two paths had positive coefficients**: supply chain socialization** and Human Resource Practices at 0.38 and 0.38, respectively, Figure 3. On the contrary, two paths had negative coefficients, collaboration at -0.06 and long term orientation Culture at -0.19. The findings reveal that opportunistic behavior is reduced when embracing Long Term Orientation Culture. Moreover, a long-term orientation culture and collaboration jointly make a crop seed enterprise reduce opportunistic behavior. However, the impact of the reduction is not great because the path coefficients are close to zero.

Figure 4

Overall SEM for collaboration, social bonds, human resource practices, and long term orientation culture



When a multiple regression model was developed for the independent and dependent variables (Table 4), the results indicated that none of the independent variables significantly predicted opportunistic behavior. However, the model r^2 was 69%.

Table 4

Opportunistic behavior predictive model controlled for long-term orientation culture

	Lhs	op	Rhs	label	est	Se	z	pvalue	ci.lower	ci.upper
1	SCB	~	COLL	s1	-0.058	0.292	-0.199	0.842	-0.631	0.515
2	SCB	~	SC	s2	0.379	0.206	1.843	0.065	-0.024	0.782
3	SCB	~	HRP	s3	0.384	0.242	1.587	0.113	-0.090	0.859
4	SCB	~	LTO	s4	-0.189	0.117	-1.619	0.105	-0.418	0.040

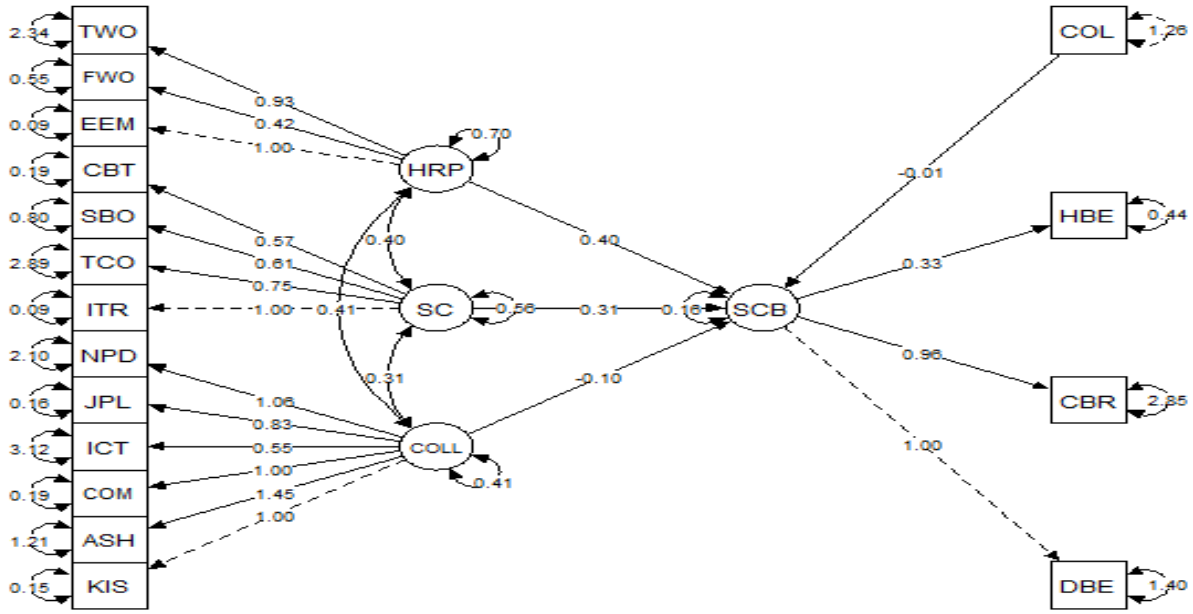
4.6.4 Model 4: opportunistic behavior predictive model controlled for collectivism organizational culture

Collectivism organizational culture was introduced into the SEM overall model to gauge the effects of the new configuration of independent variables on opportunistic behavior. Overall, the SEM diagram in Figure 5 outlines the path coefficients. Results indicate that **social**

bonds and human resource practices had positive path coefficients of 0.31 and 0.40, respectively, while collaboration and collectivism culture had path coefficients of -0.10 and -0.01, respectively.

Figure 5

*SEM overall model for collaboration, **social bonds**, human resource practices, and collectivism culture*



A Multiple regression model was derived to measure the predictive power of the independent variables on opportunistic behavior. The output results for the model are contained in Table 5. At the 5% level of significance, all independent variables had p-values that were not significant. When collectivism culture was embraced, all four variables; collaboration, **social bonds**, human resource practices, and collectivism culture were not significant predictors of opportunistic behavior.

Table 5

Opportunistic behavior a predictive model controlled for collectivism culture

	Lhs	op	Rhs	Label	Est	se	z	pvalue	ci.lower	ci.upper
1	SCB	~	COLL	s1	-0.104	0.296	-0.351	0.726	-0.684	0.476
2	SCB	~	SC	s2	0.311	0.206	1.508	0.132	-0.093	0.715
3	SCB	~	HRP	s3	0.398	0.252	1.582	0.114	-0.095	0.891
4	SCB	~	COL	s4	-0.012	0.081	-0.149	0.882	-0.171	0.147

5 CONCLUSIONS

The study was guided by four objectives. Objective one was to establish of effect of human resource practices pursued by supply chain members on reducing opportunistic behavior. It's established that human resource practices has an insignificant effect in increasing opportunistic behavior irrespective of the organization culture type pursued by supply chain members.

The second objective was to determine whether social bonds of supply chain members had the effect of reducing opportunistic behavior tendencies of members. Irrespective of the organization culture embraced by supply chain members, social bonds were found to increase opportunistic behavior but also insignificantly. Practical implication of the finding is that even when supply chain members have strong relational bonds there still exists an opportunity to engage in opportunistic behavior. This could be as a result of past interaction experiences or relational exchanges which were not founded on sincerity. On theoretical stand point, social exchange theory is supported on the grounds that even when social bonds exist parties evaluate social-cost benefit of the exchange and are driven majorly by pursuit of individual goals.

The third objective involved checking the effect of organizational culture in reducing or increasing opportunistic behavior. Power distance culture was found to significantly increase opportunistic behavior when combined with the other three variables while uncertainty avoidance culture significantly reduced opportunistic behavior. Further, long-term orientation and collectivism cultures had an insignificant effect of reducing opportunistic behavior when combined with the other variables. Practical implication is that power asymmetry is a catalyst to opportunistic behavior and should be avoided in crop seed supply chains. The findings support transaction cost economics theory. Parties in a supply chain will engage in opportunistic behavior if they have more power than counterparts so long as its advantageous to them in reducing supply chain costs.

The fourth objective involved determining if supply chain collaboration had the effect of reducing opportunistic behavior when combined with the other variables. Findings revealed that collaboration reduced opportunistic behavior insignificantly when power distance, long-term orientation and collectivism culture were embraced while it increased opportunistic behavior also insignificantly when uncertainty avoidance was embraced.

5.1 STUDY LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The study suffers from the following limitations which can have the potential of affecting the generalizability of the findings across industries, sectors of an economy or regions/countries.

1. The study was done in the crop seed sector which is quite unique give the uncertainties firms face due to rain feed crop seed production especially in Africa. There is hence need to do replication studies in other sectors to confirm the findings.
2. The crop seed sector is in Kenya is a highly regulated sector and hence has a few dominant public seed enterprises. This aspect limits comparison with other countries which have more entrenched private seed actors.
3. The population of the study was small at 143 firms. It will be necessary to carry out similar studies in settings which have more enterprises and compare the findings.

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