



SCHOOL OF BUSINESS

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The Effect of Supplier Integration on Firm Performance: The Role of Intra-Organizational Information Sharing and Inter-Organizational Information Sharing

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Outline

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Introduction

- *Supplier integration (SI) is defined as the degree to which firms exchange information in addition to linking their operations, processes, technology and other functions with their suppliers to make joint decisions (Huo, 2012).*
- SI is expected to result in greater firm performance (FP) benefits (Zhang et al., 2018; Duhaylongsod & Giovanni, 2018).

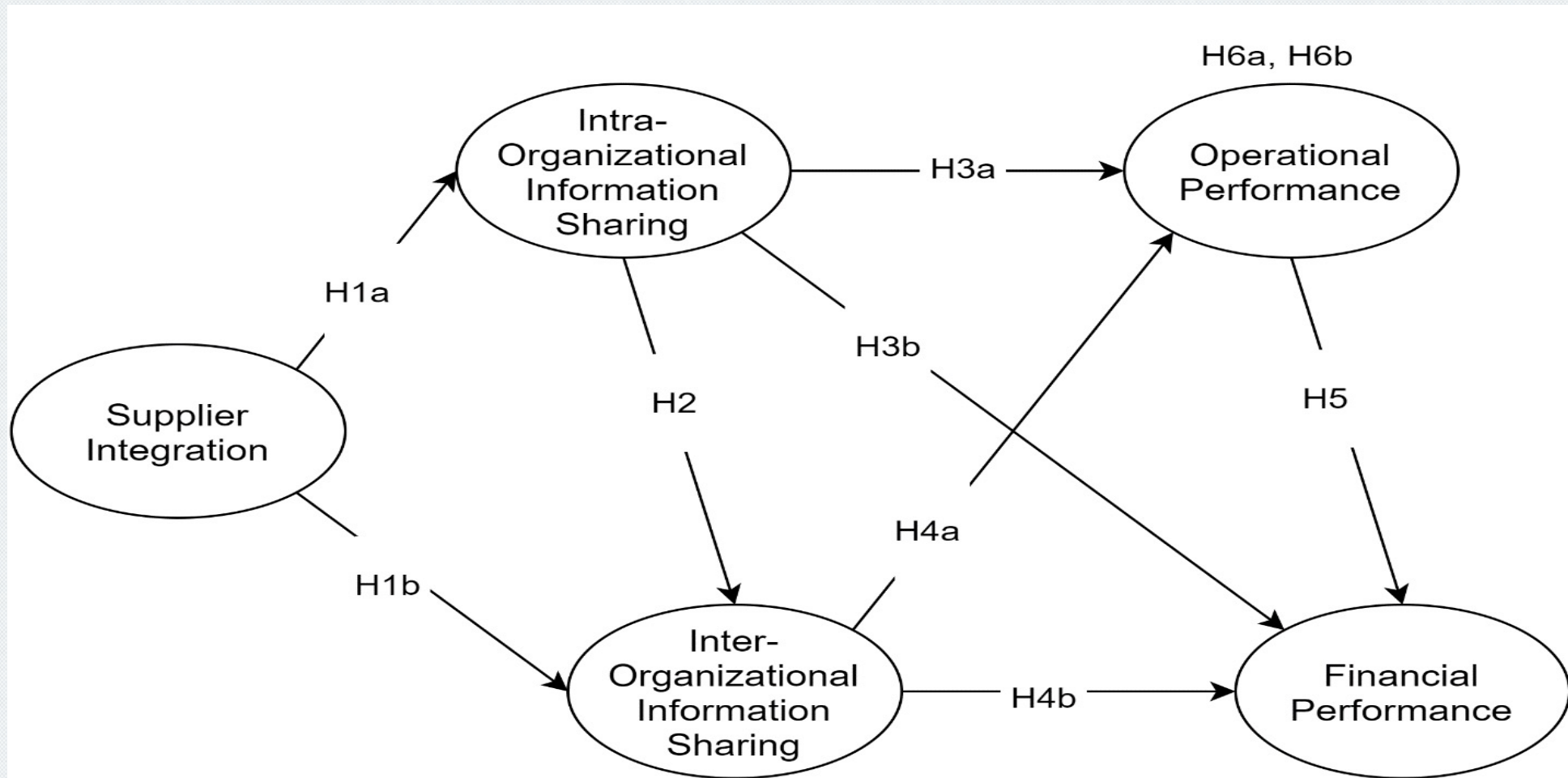
Motivation

- Empirical examination of the SI – FP relationship has yielded mixed, inconclusive and sometimes controversial results (He et al., 2017; Zhang et al., 2018).
- Call for the need for additional studies to explore covariates that better help us understand SI-FP relationship outcomes (He et al. 2017; Amoako-Gyampah et al., 2020).
- Importance of context in supply chain studies (Shou et al. 2017; He et al. 2017).
- This warrants a deeper investigation into how supplier integration enhances financial performance.

Research Question/Thesis of the Study

- *What are the mechanisms through which SI enhances FP?*
- The thesis of this study is that:
- SI first enhances the intra-organizational information sharing (Intra) and inter-organizational information sharing (Inter) capabilities of firms,
- Intra and inter-OIS can be leveraged to achieve higher operational and financial performance
- The contingency theory and the resource-based view serve as the theoretical underpinning of the study

Research model and hypotheses



Methodology: Measurement items

- Construct measures emanated from existing measures of previous studies (Zhao et al., 2011; Wong et al., 2012; Nawanir et al., 2013).
- The items were measured on a 5-point Likert scales anchored on 1 = strongly disagree and 5 = strongly agree.
- Items were refined by incorporating feedback from two supply chain academics and two industry leaders.

Methodology: Data collection

- The survey targeted manufacturing and service firms that operate in Ghana.
- Firms taken into consideration by the researchers are only firms that are registered with the Registrar Generals (RG) Department of Ghana.
- The researchers randomly generated a list of 1500 from the RG database
- 600 manufacturing and service firms were randomly selected for the collection of data.
- Selected firms were contacted to seek their permission to be included in the study. Twenty firms expressed no interest in the study and also eleven firms were unreachable.
- Questionnaires were sent to the 569 firms that showed interest in the study.

Methodology: Data collection ...*cont'd*

- One respondent each from participating firms preferably supply chain managers or operations managers were requested to respond to the questionnaire.
- After three rounds of follow-up e-mails, 326 responses were successfully retrieved.
- A total of 310 usable responses were obtained from the total of 569 questionnaires issued, which represent an effective response rate of 54.48%.
- Common method bias (CMB) was assessed following the Harman's one factor test which indicates that there is CMB when a single factor explains equal or above 50% of the cumulative variance.
- The single factor explained 40.4% of the cumulative variance

Demographic Results

- Majority of the companies were limited liability companies (45.2%)
- Responses cut across over 12 sectors - 29.7% (manufacturing sector), 13.5% (pharmaceuticals/healthcare) and 12.3% (retail sector).
- 23.2% of the firms had annual revenues exceeding one million Ghana cedis (USD 168,634.06)
- Number of employees - 20.3% of the firms had 100 to 499 employees, 16.8% of the firms having 500 to 2000 employees.

Measurement model results

Construct	Cronbach's Alpha	rho_A	Composite Reliability	AVE
Inter-organizational information sharing	0.898	0.901	0.936	0.831
Financial Performance	0.963	0.965	0.973	0.900
Intra-organizational information sharing	0.956	0.960	0.968	0.884
Operational Performance	0.908	0.919	0.936	0.788
Supplier Integration	0.882	0.893	0.914	0.681

- Composite reliability and AVE exceeded their respective minimum thresholds of 0.7 and 0.5 (Hair et al., 2019).

Table 4: Fornell-Larcker criterion

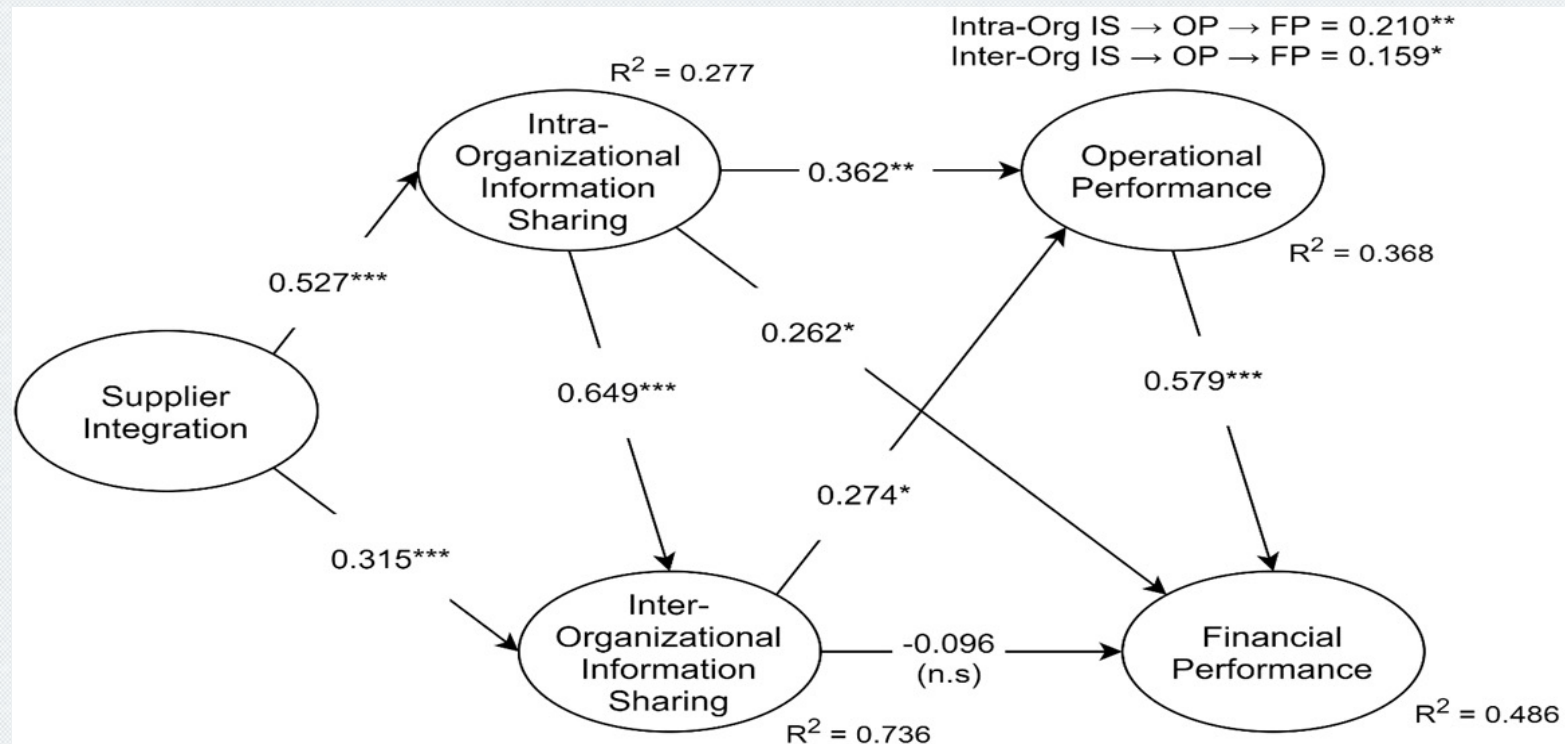
	I	II	III	IV	V
Inter-organizational information sharing (I)	0.911				
Financial Performance (II)	0.730	0.949			
Intra-organizational information sharing (III)	0.817	0.783	0.940		
Operational Performance (IV)	0.814	0.880	0.785	0.887	
Supplier Integration (V)	0.796	0.640	0.609	0.711	0.825

Table 5: HTMT results

	I	II	III	IV	V
Inter-organizational information sharing (I)					
Financial Performance (II)	0.780				
Intra-organizational information sharing (III)	0.877	0.814			
Operational Performance (IV)	0.899	0.938	0.841		
Supplier Integration (V)	0.889	0.684	0.649	0.780	

Structural model results

- The co-efficient of determination (R^2) of the constructs ranged from 0.277 to 0.736, which represent moderate levels of determination (Hair et al., 2019).
- Q^2 values ranged from 0.213 to 0.574, confirming the predictive relevance of the model (Hair et al., 2019).



*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; n.s = not significant

Hs	Hypothesized path	Beta	t value	p value	Decision
H1a	Supplier Integration → Intra-Organizational Information Sharing	0.609	6.150	0.000	Supported
H1b	Supplier Integration → Inter-Organizational Information Sharing	0.474	4.348	0.000	Supported
H2	Intra-Organizational Information Sharing → Inter-Organizational Information Sharing	0.529	4.996	0.000	Supported
H3a	Intra-Organizational Information Sharing → Operational Performance	0.362	2.934	0.003	Supported
H3b	Intra-Organizational Information Sharing → Financial Performance	0.294	1.597	0.110	Not supported
H4a	Inter-Organizational Information Sharing → Operational Performance	0.518	3.725	0.000	Supported
H4b	Inter-Organizational Information Sharing → Financial Performance	-0.115	0.737	0.461	Not supported
H5	Operational Performance → Financial Performance	0.743	7.386	0.000	Supported
H6a	Intra-Organizational Information Sharing → Operational Performance → Financial Performance	0.269	2.222	0.026	Supported
H6b	Inter-Organizational Information Sharing → Operational Performance → Financial Performance	0.385	3.867	0.000	Supported

Discussions

- This finding indicate that supplier integration serves as an antecedent for intra- and inter-OI sharing capabilities (Koçoglu et al., 2011; Asamoah et al., 2016).
- The result further revealed that intra-OI sharing has a positive and significant effect on inter-OI sharing capability (Huo et al., 2014).
- Intra-OI sharing directly improves the operational and financial performance of firms (Wong et al., 2012)
- Inter-OI sharing directly improves operational performance but not on financial performance (Premus and Sanders, 2008).

Discussions ...*cont'd*

- Sharing information with supply chain partners improves operational performance (i.e. minimizes lead times, minimizes the costs of inventory, enable firms to offer more customized products at reasonable prices) (Huo et al., 2014), but this comes at significant costs to the organization, eroding profits, and accounting for minimal direct financial gains from inter-OI sharing (Ye and Wang, 2013).
- Operational performance partially mediates the effect of intra-organizational sharing on financial performance.
- Operational performance plays a full mediation role in the effect of intra-OI sharing on financial performance.

Implications of the study

- The study identifies IT-enabled organizational information sharing as an important mechanism for explaining the outcomes of supplier integration.
- Operational performance is observed as an important mediating variable in understanding how intra-OI sharing and inter-OI sharing may enhance the financial performance of firms.
- Firms practicing intra-OI sharing can expect a direct improvement of their bottom line, and an indirect improvement through improved operational performance.

Implications of the study

- Firms practicing inter-organizational information sharing on the other hand can only expect improved financial performance outcomes through improved operational performance.
- Managers seeking to maximize the benefits of their supplier integration initiatives should build their intra-OI and inter-OI sharing capabilities.
- Managers must make the appropriate investment in information technology such as ERP systems to achieve intra and inter-organizational information sharing (Asamoah et al., 2021; Asamoah et al., 2019).

Conclusion

- The study examined the mechanisms through which supplier integration enhances performance of firms by highlighting the role of inter-organizational and inter-organizational information sharing.
- There were some limitations of the study. Data for the study was obtained from one developing African country. The findings of the study may therefore not be generalizable to firms in other regions.
- Future research should focus on getting data from more diverse contexts to examine if these findings hold true in different contexts.
- Control variable should be looked into

Thank you