Supply Chain Information Integration and Firm Performance: Evidence from India

Full Paper

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Abstract

Supply chain information integration (SCII), an IT-enabled capability, enhances firms' collaboration with suppliers and clients resulting in better operations and performance. Bottom-of-pyramid segments in emerging markets pose distinct challenges due to their institutional context. The benefits that domestic and foreign firms can harness from SCII differ due to the distinct set of difficulties faced by these two types of firms. We suggest that SCII has a positive influence on firm performance through client collaboration for foreign and domestic firms, but SCII's influence is stronger for domestic firms; whereas supplier collaboration is positive for foreign firms but negative for domestic firms. We test our theory by comparing the outcomes of leveraging SCII for collaboration, across domestic and foreign firms in the automotive ancillary and part manufacturing sectors in India. We use a unique dataset of 133 firms and use both partial least squares and econometric analysis to test our theorized relationships.

Keywords

Bottom of the pyramid, Supply chain information integration, supplier collaboration, client collaboration.

Introduction

The role of supply chain integration for firm operations and performance is especially salient in emerging markets, such as India, China, Brazil, and Latin American countries. Emerging markets are attractive to firms to expand their businesses globally by providing huge revenue generating potential from a wide base of new potential customers. Prior studies note that emerging markets have a segment of consumers with low-incomes, but high aspirations. This bottom-of-pyramid segment (BOP) consists of more than four billion people living with relatively limited resources and incomes below $3,000 (in 2002 U.S. dollars) in local purchasing power (estimated as $3.35 a day in Brazil, $2.11 in China, and $1.56 in India). Despite their potential, emerging markets with significant BOP segments face several challenges, because of wide diversity in the buying power, acceptability, affordability, and aspirations of suppliers and consumers; which are inherently different from those in developed markets (Fawcett et al. 2015). Furthermore, emerging markets suffer from inadequate regulations, a lack of quality infrastructure, and distribution challenges (Sheth 2011).

In recent years, many emerging markets have considerably improved their information and communication infrastructures, therefore offering a significant potential to build supply chain information infrastructure. For instance, India has more than 38% cell phone penetration, exceeding 20 million smartphone users (Rai 2016).

Hence, the constant development of technological infrastructure coupled with high economic growth, lead to a potential capability to access, collect and manage information across the supply chain efficiently and effectively. Most of India is wirelessly connected, with information technology (IT) access available across the country. Footprints of IT are seen in the business process of outsourcing firms in rural areas of India. Information and communication technology has changed features of many industries such as wheat and fishery (Ramaswamy et al. 2010). Thus, although firms in emerging markets may not be able to directly improve the efficiency of the supply chain, with the help of information technology capabilities, firms can build a visible and efficient supply chain information integration capability to leverage and improve their performance. Therein lies the premise of this study: in emerging markets with BOP segments, supply chain information integration capability impacts firm performance via client and supplier collaborations.

We propose that although supply chain information integration leads to firm performance, in emerging markets, domestic and foreign firms differ in their ability to leverage this capability. In emerging markets, foreign and domestic firms' success have been varied, calling for further investigations of the supply chain configurations that can lead firms to a superior performance. For example, Walmart and Kellogg have achieved limited success in the Indian BOP market (Padmanabhan 2012). However, other foreign firms such as Samsung, Nike, and Honda have become market leaders. These latter firms not only sell products, but have also based their manufacturing and supply chains in India to leverage the cost arbitrage. Further, there has been relatively less research in the business-to-business context in the emerging markets (Biggemann et al. 2011).

In this study, we pose the research question: *Do domestic and foreign firms differ in leveraging their supply chain information integration capabilities in emerging markets, and if so, how?* We argue that supply chain information integration (SCII) capability influences a firm's performance through client and supplier collaborations. These two collaborations are inherently the basic tenets of upward and downward supply chain management (Brinckmann et al. 2011). We propose these two types of collaborations as mediating mechanisms for information integration to influence firm performance. We also argue that these mechanisms differ for foreign and domestic firms in emerging markets.

The data was collected from the firms using a primary matched-pair survey method. We conducted analysis using PLS and econometric methods. We find empirical support for our theory. In BOP segments of emerging markets, foreign firms can compete with domestic firms by leveraging supply chain information integration in their strategy and operations.

Background and Theory

In emerging markets, ownership (domestic versus foreign) can signal the unique characteristics, structure and distinct identity of a firm (Peng et al. 2004). According to the institutional theory perspective, firms with the same ownership types share a similar socially coded identity, which is distinct from firms with other type of ownership (Le Mens et al. 2011). External audiences (e.g., clients, suppliers) often perceive foreign firms as different from domestic firms (Chan et al. 2007). Thus, whether these firms are perceived as legitimate depends on extent to which their actions conform to their socially coded identities. Moreover, a firm's ownership type signals whether the adoption of a particular strategy will be considered proper in the eyes of stakeholders (e.g., clients or suppliers), in turn swaying the performance implication of the strategy (Hens 2012).

SCII through information systems helps firms to improve their agility and adapt to contextual complexities by being able to acquire, use and subsequently leverage the information for businesses; and quickly sense, change and adapt business priorities. Specific to emerging markets, research suggests that information integration using information technology can help compensate for poor infrastructure (Bingi et al. 2000). For instance, in many BOP markets, cell phones are compensating for the lack of landline telephone access and are enabling unique services such as money transfers and agricultural intermediation services (Vachani et al. 2008). However, two aspects remain unexplored. First, how information integration in supply chains aligns with firm capabilities to foster collaborations and improve performance. Second, how firms in emerging markets can leverage this alignment. Our study helps to address these gaps in the literature.

Currently, IT solutions to acquire, establish and manage supply chain information integration (SCII) are highly developed. However, some concerns have been raised that even though efficient and sophisticated IT solutions exist, firms are not able to leverage these benefits due to several obstacles (Jharkharia et al. 2005). Thus, the barriers for an efficient SCII cast doubts on the effects of SCII on improving performance. The concern about the effects of SCII on performance is aggravated in the emerging market context, due to several reasons. First,

although information and communication technologies are disseminated in emerging markets, the willingness to adapt technologies for business contexts is relatively low. Thus, SCII efforts by a firm may not have the intended positive effects on performance because of inefficiencies on the part of its suppliers. Second, firms in BOP segments of emerging markets face a difficult task regarding the dispersion of their supply chains, in terms of meeting consumer tastes and locations. BOP consumers have a tolerance for low- or moderate- quality products and services (Morgeson III et al. 2015). Furthermore, consumers in the BOP markets are dispersed and distributed across urban and rural areas (Sheth 2011). For example, 22% of India's urban population is part of the BOP market and 70% of India's rural BOP population contribute 50% of the country's gross domestic product but live in 600,000 villages, only 13% of which have a population greater than 2000 (Aithal et al. 2002). A third factor in emerging markets are the institutional gaps and challenges that hinder an efficient supply chain. In terms of information systems, perhaps the most visible feature is the lack of adoption of uniformly defined standards. Firms are often forced to adopt differing standards either coming from developed markets, or originating from the same market.

In BOP markets, to reach a highly dispersed low-income consumer base, firms need to be able to adapt to rural environments, agricultural cycles, local languages, and rural avenues such as local festival gatherings and village meetings (Kumar et al. 2013). In other words, firms need to develop *client collaboration capabilities* that facilitate business in BOP markets (Kumaraswamy et al. 2012). In addition, firms need to develop local *supplier collaboration capabilities* that facilitate business in BOP markets, including business-to-business relationships to develop a chain of firms that help overcome supply, support, and selling challenges by promoting information transfer and conflict resolution (Ravindran et al. 2015). In summary, client collaboration capabilities address requirements needed for reaching out to clients, and supplier collaboration capabilities help build a multi-firm distribution and collaboration system to deliver products and services, develop resources, and gain knowledge of local market conditions, business practices, and norms (Kumar et al. 2013).

Conceptual Framework and Hypotheses

We anchor our conceptual framework to the *information integration and alignment* concepts discussed in prior literature (Tallon 2007; Tallon et al. 2011). We posit that, in BOP segments of emerging markets, firm*'s supply chain information integration capability will lead to improved firm performance through two mediating paths, e.g. supplier collaboration and client collaboration capabilities.* However, the implications of this alignment are different for *domestic and foreign* firms.

Prior studies suggest that collaboration oriented capabilities drive performance (Morgan et al. 2009). In BOP markets, superior collaboration capabilities help orient the firm within local norms, thus enabling it to offer clients more meaningful products and services (Subramanian et al. 2001). Collaborative relational capability with suppliers and partners improves firm performance (Kulp et al. 2004) by helping firms to collect information about potential opportunities and risks (Hoyt et al. 2007), providing firms with important market resources, and helping firms overcome key regulatory challenges (Sheng et al. 2011). Consistent with prior research, we expect positive direct effects of client collaboration and supplier collaboration capabilities on firm performance. Next, we focus on the mediating effects of these two capabilities on the relationship between supply chain information integration (SCII) and firm performance.

Information integration helps to bring flexibility, speed, and cost economies to the supply chain of a firm. This enhances collaboration with suppliers because it increases visibility of changes in demand and environment conditions due to relationship-specific information, knowledge flows, and information sharing (Rai et al. 2012) arising from collaboration with partners (Saldanha et al. 2013). SCII enables firms to meet new requirements in transaction services resulting from anticipated changes in demand and environment conditions in a scalable and rapid manner. SCII also overcomes inefficiencies arising from lack of process transparency across business partners (Chatterjee et al. 2008).

SCII enables firms to determine the requirements and preferences of its clients and relay this information to its suppliers (Lee et al. 2000). This enhances supplier collaboration to meet client demands. SCII provides some early warnings to firms regarding supply side or demand side disruptions. Thus the firm is able to plan for demand spikes or supply disruptions, thereby avoiding deleterious effects (Wakolbinger et al. 2011). However, we expect that the effects of SCII on performance through client and supplier collaborations will be different for domestic and foreign firms. Emerging markets provide challenging contextual and institutional environments for domestic and foreign firms (Simanis et al. 2014). Domestic firms are intimately and indigenously acquainted with

local settings. Foreign firms often come with developed-market supply chain experiences, along with the business models, operations, and strategies, and country of origin advantages (Sharma 2011).

Domestic firms may take greater advantage of this information and strengthen their collaboration with clients thanks to their experience and familiarity with local context and local clients (Hillman et al. 2004). In other words, the SCII works as an additional layer that augments existing collaborations for domestic firms. On the contrary, foreign firms are building collaborations with local clients, where the local context including cultural and language issues poses problems for foreign firms (Child et al. 2005).

In contrast to foreign firms, domestic firms, with their greater knowledge about local market, would typically use supply chain IT only as necessary and as it suits market needs. Moreover, domestic firms possess deeper knowledge about customers' needs and constraints and can therefore utilize the flexibility offered by SCII to collaborate with clients to address their needs (Li et al. 2008). Even though foreign firms may also understand consumer needs, the depth and breadth of information shared by consumers is less, because of a lack of thrust and loyalty. Thus, foreign firms have to bear the liability of foreignness, the additional costs that foreign firms operating in an overseas market incur compared to local firms (Zaheer 1995).

Third, domestic firms are more knowledgeable of customers' usage and constraints and therefore can better leverage on their knowledge. For example, OlaCabs, a domestic competitor of Uber in India, offers clients the flexibility to pay for taxi services in three ways: cash, app-based credit card, and pre-paid digital wallet connected to a bank account (Russell 2014). Conversely, foreign firms may receive a differential treatment from consumers, as these firms are unfamiliar with the prevailing social and political institutions (Dunning et al. 2008). Foreign firms rely on the values and societal norms of their home countries and may ignore certain customer sensitivities such as gender differences (Luo et al. 2007).

To summarize, we argue that SCII enhances the understanding of the domestic environment and encourages firms to collaborate with consumers to further understand their needs. Although foreign firms will collaborate with customers, SCII will have a lesser effect on foreign firms than in domestic firms in the client-firm collaboration relationship. Based on these arguments, we hypothesize:

> *Hypothesis 1: The positive influence of supply chain information integration on client collaboration is greater for domestic firms than foreign firms in BOP markets.*

Although SCII enhances knowledge sharing and encourages foreign firms to receive new information from supply chain partners (suppliers), domestic firms' readiness and operationalization of technological changes are not so high (Anderson et al. 2007). A domestic firm may perceive that SCII creates knowledge redundancy, which despite of SCII may be available. On the other hand, information will enable foreign firms to be perceived as more appropriate entities within the system of norms that define business conduct—at least with the new and counterpart foreign firm suppliers (Kumar et al. 2013). Therefore, suppliers may be more willing to collaborate with foreign firms. Hence, the positive influence of IT-enabled SCII on supplier collaboration capability is a strong strategy for foreign firms in the dynamics of BOP segments of emerging markets. Based on these arguments, we hypothesize:

> *Hypothesis 2: The influence of supply chain information integration on supplier collaboration is negative for domestic firms and positive for foreign firms in BOP markets.*

We further posit that both supplier and client collaboration capabilities are antecedents to firm performance, mainly due to two reasons. First, client collaboration capability helps orient the firm within domestic norms, thus enabling it to offer clients more meaningful products and services (Morgan et al. 2009). Likewise, supplier collaborative capability with partners improves firm performance by helping firms collect information about potential opportunities and risks (Hoyt et al. 2007), providing firms with important market resources, and helping firms overcome key regulatory challenges (Sheng et al. 2011). Even though the collaboration of foreign firms with consumers will have a positive influence on performance, the cultural differences between the foreign firm and BOP domestic consumers create greater conflict when implementing strategic decisions derived from client collaboration (Gupta et al. 2011). Ties with domestic suppliers grant access to trusted information in emerging markets. These ties provide information that is not available in the public domain and enable the access to trustworthy information compared to information provided by new acquaintances or strangers (Uzzi 1997). Second, domestic firms are incumbents in the domestic market and already developed long existing ties with suppliers. Tightly linked domestic firms may be constrained to the information of their existing ties. Based on these arguments, we hypothesize:

Hypothesis 3: The positive influence of SCII enabled client collaboration capability on firm performance is greater for domestic firms than foreign firms in BOP markets.

Hypothesis 4: The influence of SCII enabled supplier collaboration capability on firm performance is negative for domestic firms and positive for foreign firms in BOP markets.

Methods

Sampling and Data Collection

We collected survey-based data from automotive and auto component manufacturing firms that serve BOP segments in India. First we created a sample pool of 771 organizations by merging the directories of the automotive industry and industry associations of the states of Gujarat and Maharashtra in India. Second, we developed two survey instruments by adapting questions from existing scales after a thorough review of the relevant bodies of literature (Kim et al. 2010). We employed the back-translation method to localize the English language used in the questionnaires and ensure conceptual equivalence (Cao et al. 2009). To ensure content validity, we interviewed four senior executives and asked them questions concerning their interpretation of the questionnaire items. The revised items were then used to conduct a pretest with 15 other senior executives and the instruments were finalized based on their feedback.

Third, we contacted the organizations in our sample pool and offered them an executive summary of our findings as well as a gift card as an incentive to participate. Trained interviewers were recruited to administer the questionnaires onsite. To minimize potential common method bias, we obtained information from two sources for each firm. We received matched-pair responses from 133 firms, corresponding to a response rate of 17.3%, which is similar to published studies. Response bias is not a significant concern because there were no significant differences between participating and non-participating organizations. Table 1 describes the variables, survey questions and scale.

Variables

We developed a multi-item measure for supply chain information integration (SCII) by adapting questions from relevant prior research (Table 1). Client Collaboration and Supplier Collaboration were each measured by two items that capture the number of collaboration projects in research and development, product & process improvements, new product development, market research and business research participated in during the last three financial years with the three main clients and suppliers respectively. Firm performance was measured with a four-item scale adapted from Kim et al. (2010) that captures three-year financial performance, competitive performance, sales growth and profitability. We included three control variables, IT Stock, Firm Size and Firm Age, to account for the effects of extraneous variables that may influence SCII or firm performance. IT Stock is measured as the previous year's investments in IT. Firm Size is measured as the number of full time employees and Firm Age is measured as the number of years since the commencement of the firm's India operations. We control for firm size and firm age as these can represent scale and resource availability, thereby influencing performance (Tanriverdi 2005). Correlations of the measures are reported in Table 2.

Variable	Survey Questions with retained items [Scale: 1 (Strongly Disagree) to 7 (Strongly Agree) where applicable]	Hypotheses
Firm Performance	Please indicate the extent to which you agree or disagree with the following statements about your organization's performance. • Over the past 3 years, our financial performance has been outstanding. • Over the past 3 years, our financial performance has exceeded our competitors'. • Over the past 3 years, our sales growth has been outstanding. • Over the past 3 years, we have been more profitable than our competitors.	H3, H4
Supply Chain Information Integration	Please indicate the extent to which the following statements describe your organization's information systems used in supply chain management context. • Our information systems are designed to enable our organization to easily identify and access data and information that resides within and outside the firm.	H1, H2, H3, H4

	• Our information systems connect to multiple internal and external sources of data and information. • Our information systems enable our organization to easily combine data and information that resides within and outside the firm. • Our information systems are designed to enable our organization to mix data and information from multiple internal and external sources.	
Client Collaboration	• State the number of collaboration projects in Research & Development, product & process improvements, and new product development that your organization has participated in during the last three financial years with your organization's three main clients. • State the number of collaboration projects in market and business research that your organization has participated in during the last three financial years with your organization's three main clients.	H1, H3
Supplier Collaboration	• State the number of collaboration projects in Research & Development, product & process improvements, and new product development that your organization has participated in during the last three financial years with your organization's three main suppliers. • State the number of collaboration projects in market and business research that your organization has participated in during the last three financial years with your organization's three main suppliers.	H2, H4
Domicile	Please select the response that best describes the ownership structure of your company • Foreign Subsidiary • Joint Venture between Domestic and Foreign Companies • Joint Venture between Domestic Companies • Public Domestic Company • Privately Held Domestic Company	H1, H2, H3, H4
Firm Age	Please state the year your organization founded its domestic operations.	Control variable
Firm Size	Please approximate the number of full time employees in the domestic operations.	Control variable

Table 1. Survey and Measures

Variables	Composite Reliability	Mean	SD	1	2	3	4	5	6	7
Age	1.000	32.84	20.77	1.000						
Client Collaboration	0.775	4.65	1.08	-0.096	0.773					
Firm Performance	0.917	5.30	1.04	-0.044	0.723	0.882				
IT Stock	1.000	0.075	0.048	0.024	0.208	0.214	1.000			
Supplier Collaboration	0.906	2.96	1.56	-0.014	-0.172	0.038	0.017	0.894		
SCII	0.873	5.35	0.82	-0.021	0.647	0.840	0.197	0.031	0.827	
Size	1.000	1261.27	1177.19	-0.309	0.451	0.448	0.077	0.065	0.454	1.000

Square root of Average Variance Extracted in main diagonal
Table 2. Correlations

Analysis and Results

We conducted partial least squares (PLS) analysis using Smart-PLS 3 to validate the measurement model and test the hypothesized relationships (Ringle et al. 2015). We chose PLS as an analysis technique due to three reasons: PLS makes no prior assumptions about data normality, enables assessment of measurement model within context of the theoretical model and caters to the existence of second-order formative factors and multiple data groups.

Measurement model assessment and construct validity. We assessed the measurement model through PLS to examine the convergent validity, discriminant validity and reliability of our measures. All variables

exhibited sufficiently high reliability and convergent validity. Cronbach's alphas were above the value of 0.80 recommended for mature research models (Nunnally 1978) and loadings of all indicators were significant (p<0.01) and exceeded the recommended 0.7 threshold. The model also exhibited sufficiently high discriminant validity. Items had low (<0.3) and nonsignificant cross-loadings. Further, average variances extracted (AVE) were greater than 0.50 and the square roots of AVE exceeded the highest shared variances in the construct correlation matrix. Composite reliability values for all constructs were above 0.775.

Structural model assessment. To assess the hypothesized PLS structural model, we conducted a bootstrapping procedure with replacement using 5,000 subsamples to calculate the statistical significance of the parameter estimates. For the analysis, we created two data groups, one containing data points from Domestic Firms and the other containing data from Foreign Firms. We also conducted PLS Multi Group Analysis (PLS-MGA) to test if the data groups have significant differences in their group-specific parameter estimates (Sarstedt et al. 2011). Figure 4 shows the results of the structural model assessment.

Hypotheses 1 proposed that SCII has a positive influence on Client Collaboration for both Foreign firms and Domestic firms, and that the effect is greater for Domestic firms. However, while we observed a significant, positive relationship between SCII and Client Collaboration for both Foreign (β = 0.674, T-value = 10.723, p < 0.001) and Domestic Firms (β = 0.705, T-value = 7.953, p < 0.001), there was no statistically significant difference in the path coefficients (difference = 0.032, p-value = 0.366, not significant) across the two groups. **Hypothesis 1 is therefore not supported.**

Hypotheses 2 proposed that SCII has a positive influence on Supplier Collaboration for Foreign firms, but a negative influence for Domestic firms. We observed that SCIIC had a significant, positive relationship with Supplier Collaboration for Foreign Firms (β = 0.680, T-value = 8.616, p < 0.001) and a significant negative relationship with Supplier Collaboration for Domestic Firms (β = -0.686, T-value = 5.985, p < 0.001). These observations are supported by the PLS-MGA results (difference = 1.375, p-value = 1.000). **Hypothesis 2 is therefore supported.**

Hypotheses 3 suggested that Client Collaboration has a greater effect on Firm Performance for Domestic firms as compared to Foreign firms. The PLS results demonstrated a significant, positive relationship of Client Collaboration with Firm Performance for Domestic Firms (β = 0.589, T-value = 6.187, p < 0.001) and no relationship for Foreign Firms (β = 0.143, T-value = 0.994, p > 0.10, not significant). PLS-MGA results showed a statistically significant difference in the path coefficients (difference = 0.447, p-value = 0.001) across the two groups. **Hypothesis 3 is therefore partially supported.**

Finally, Hypotheses 4 suggested that Supplier Collaboration has a positive influence on Firm Performance for Foreign firms, but a negative influence for Domestic firms. We found a statistically significant difference in the path coefficients (difference = 0.823, p-value = 1.000) across Domestic and Foreign firms for the relationship between Supplier Collaboration and Firm Performance, and the directionality of the relationships was as per expectations. Specifically, we observed a significant, positive relationship of Supplier Collaboration with Firm Performance for Foreign Firms (β = 0.583, T-value = 4.545, p < 0.001), and a significant, negative relationship for Domestic Firms (β = -0.233, T-value = 2.377, p < 0.05). **Hypothesis 4 is therefore supported.**

To alleviate concerns regarding common methods bias, we took three steps. First, we conducted Harman's one-factor test (Podsakoff et al. 1986) which did not result in the emergence of any single major factor. Second, we conducted a marker variable test (Lindell et al. 2001) and correlations among variables did not change significantly after accounting for common method variance through a theoretically unrelated construct. Third, the partial correlation method (Podsakoff et al. 1986), in which the highest factor from the factor analysis was added to the PLS model as a control variable, did not produce a significant change in variance explained. Although our use of matched pair data minimizes common method bias, results of these three tests further suggested that common method bias is not a significant concern. Finally, we also assessed the sensitivity of our PLS results to alternate econometric analysis such as Ordinary Least Squares models (OLS) and Tobit regression models. These results, omitted for brevity, are qualitatively similar to the PLS results.

Discussion

While information integration in supply chains has generated substantial attention in both theoretical and empirical studies, the literature provides limited evidence about the differing impact of supply chain information integration in BOP segments of emerging markets across domestic and foreign firms (Fawcett et al. 2015). Our

study seeks to fill this gap by examining the effect of SCII on firm performance mediated through supplier and client collaboration capabilities. To summarize our results, we find that although SCII influences collaborations and firm performance, foreign firms are better equipped to leverage the SCII capability on the supplier side collaborations. On the contrary, overall results show that domestic firms are somewhat able to leverage SCII better for client collaborations than foreign firms are.

The theoretical implications of this study are significant. Whereas previous research highlights the important role of information integration in supply chains, conflicting views exist about whether firms can really reap the benefits of such integration, and if not, what are the contingencies (Devaraj et al. 2007). This study takes an institutional theory based view of the difference in effects of SCII in a BOP market context (Wright et al. 2005) and contributes to SCM and IS literatures. Second, unlike earlier SCII related studies, we demonstrate that the impacts of SCII are visible at finer levels of detail by making conceptual and empirical distinctions between two mediating mechanisms-client and supplier collaborations. Although supply chain management literature has noted these mechanisms, empirical investigation is sparse. Third, scholars have noted the need to study the SCM issues in non-US and BOP contexts (Fawcett et al. 2015). Our sample consists of respondents from the BOP segment in India, where competition, supply chain constraints and collaboration have intensified. Thus, our study deepens scholarly understanding of the SCM and IS issues that lead to competitive advantage in BOP markets.

In terms of managerial implications, our findings suggest that SCII can enable a firm to achieve higher performance, by fostering collaborations, subject to contingencies of emerging markets. In emergent and BOP markets, managers need to consider contextual and institutional factors of the market to orient their supply chain information systems implementation strategies effectively. A second implication is that while existing relationships may help domestic firms, they need to be cognizant of foreign firms entering these markets, as they may prove to be a disrupting force as they come to learn about the domestic market. For example, when cell phone providers enter BOP markets, they bring differentiated value-added services that provide them with a winning strategy against local competitors. Domestic firms need to learn about and adopt some of the developments relevant to supply chain systems to remain competitive with entering foreign firms.

Our study has limitations, which can be starting points for future research. First, our data is collected only from firms in BOP segments in India, which enhances internal validity, but limits generalizability. Future work can extend the analysis to other BOP markets. Second, this study utilizes cross-sectional data, which calls for further studies to assess and establish causality.

In conclusion, this study examines performance implications of supply chain information integration in a BOP segment of an emerging market. We theorized and found mediating roles of collaboration capabilities on the SCII and firm performance linkage; and differentiated these relationships across foreign and domestic firms. This study contributes to a better understanding of supply chain information integration, a key SCM issue, in BOP economies, and sheds light on differentiated performance implications of such integration across foreign and domestic firms.

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