BUILDING VISIBILITY WHEN FIRMS DEPEND ON SUPPLIERS: CASE OF SEAFOOD PRODUCERS IN VIETNAM[1]

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Abstract

This paper develops a model highlight the importance of visibility for mitigating supplier risk when a buying firm depends on the supplier. Our model has shown that visibility can be an important information-based capability for reducing the dependence burden on supplier risk. In particular, visibility is more needed to mitigate supplier risk when a buying firm is more dependent on its supplier. In reverse, the importance of visibility is reduced if buyer is not dependent on its supplier. Two sides of antecedents to visibility are also posited and tested. A sample of 70 seafood producers in Vietnam is used to test the model using partial least square technique. Discussions on estimated results and recommendations for further research are provided to extend the extant literature..

Key words: *Visibility, Supplier Risk, Supply Chain Management, Supply Management, Absorptive Capacity, IT Integration, Trust, Dependence.*

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1. Introduction

Manufacturing firms today depend on their suppliers for existence and growth. This is because a typical manufacturer today is more in "the assembling business than in the business of producing the components required to create the end product" (Joshi, 2009, p. 133). Around the world, manufacturing firms, small or big, are usually sourcing items and inputs for their production.

However, dependence also means exposure to risks. Thus manufacturing firms will have to deal with risks from their suppliers. One

of the risks that have attracted both practical and academic attention is the one that stems from disruptions on the supplier side but when occur may negatively impact the buying firm (Zsidisin, 2003).

Literature on the supplier risk, however, has been strong on descriptive and prescriptive accounts rather than on mechanisms to mitigate risk. A common format for many articles in the field is to start with descriptions of disruption risks in supply chains and then recommend different strategies for mitigating the risks. Though useful, such papers usually addressed only one

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or several types of disruptions, and some of these have been conducted in an experimental setting. Thus there is a gap in behavioral studies on supplier risks (Ellis, Henry, & Shockley, 2010), especially in situations of buying firms' dependence on suppliers.

Recently, the construct of transparency or visibility has been developed (Lamming, Caldwell, Harrison, & Phillips, 2001) and promisingly becomes an useful mechanism to mitigate supplier risk. Some elements of the construct have been linked to the risk (e.g.: Klein & Rai, 2009). This paper thus attempts to highlight the importance of visibility in mitigating supplier risk, especially in the situation of high dependence on the supplier. Specifically, we argue that although supplier dependence can induce supplier risk, when visibility has been developed the risk burden from dependence would be attenuated. In contrast, in case of low visibility, the negative impact of dependence on supplier risk would be highlighted. However, visibility is a relationship-specific capability that is costly and time-consuming to be developed. Building visibility thus can only be justified under high dependence situation.

The structure of the paper can be described as follows. First, we present the theoretical framework to link supplier dependence and supplier risk. Visibility would be introduced as a key relationship-specific capability to reduce the dependence burden. Then, under the knowledge transfer literature (Cohen & Levinthal, 1990; Szulanski, 1996), two mechanisms to develop visibility are modeled. Methodology and empirical results of the tested model then are presented. We conclude with discussions and recommendations for further research in the field.

2. Theoretical background

Perceived supplier risk (or supplier risk) refers to the buyer's expectation of probable disruption on the supplier's side that causes loss to the buyer due to unavailability of a sourced item. The failure of having the item may be due to disruptions which are attributed to either the supplier internal or the external business environment. The concept of perceived supplier risk here bears a close relationship with the concepts of fear (Mitchell, 1995), lack of confidence (Christopher & Lee, 2004), and the feeling of uncertainty, discomfort, and/or anxiety (Dowling & Staelin, 1994) over the availability of sourced item. Our definition also matches with definition of risk in various literatures including international business (e.g. Mascarenhas, 1982; Werner, Brouthers, & Brouthers, 1996), consumer behavior (e.g. Dowling & Staelin, 1994), and especially in supply chain management, the context of this study (e.g. Chopra & Sodhi, 2004; Harland, Brenchley, & Walker, 2003; Tang, 2006).

Supplier risk is a function of two factors: the probability of disruption events from the supplier side and the impacts of the events when occurring on the buying firm in terms of losses. There may be different types of losses including financial, performance, physical, social, psychological and time losses (Harland, et al., 2003; Mitchell, 1995). For this study, we will only focus on financial losses. Our contention is that many, if not all, of the losses could be converted into financial loss (Mitchell, 1995).

Supplier dependence and supplier risk

Intuitively, supplier dependence can induce supplier risk. Here dependence refers to a firm's need to maintain an exchange relationship to

achieve desired goals (Frazier, 1983). Supplier dependence or the dependence of a buying firm on its supplier then is a function of (1) the motivational investment in goals by the buying firm that is mediated by its supplier and (2) the availability of those goals to other suppliers (cf. Emerson, 1962). In this study, we examine the second component, which is the availability of goals, usually referred as the difficulty in replacing a supplier because of switching costs or the lack of alternative suppliers (cf. Geyskens, Steenkamp, Scheer, & Kumar, 1996). The former dimension would be controlled in this study.

It can be posited that a buying firm's dependence on its supplier is positively associated with perceived supplier risk. This is because a buying firm usually consider the gains and losses of leaving a relationship with its supplier (Gilliland & Bello, 2002). As the replaceability of a supplier is lower, the buying firm has fewer choices for its supply and more dependent on the supplier. In this case, the buying firm loses the ability to switch to another alternative and may lose significantly in case of supply disruptions (Wagner & Bode, 2008). Empirically, it has been proved that fewer alternatives for a supplied item and item criticality to a buyer is positively linked to the potential and impact of supply disruptions on the buyer (Ellis, et al., 2010). Formally, we can hypothesize that:

H1: For a buying firm, the higher the supplier dependence the higher the perceived supplier risk.

Visibility as the key relationship-specific capability to attenuate the dependence burden

A buyer's visibility into its supplier (hereafter

visibility) refers to the extent to which a buying firm is able to access timely, accurate, and relevant information about its supplier's operational and strategic issues (V. H. Nguyen, 2013). In fact, this concept was developed from the concept of transparency in supply relationships that has appeared in several works by Lamming and his co-authors (Lamming, Caldwell, & Harrison, 2004; Lamming, et al., 2001). Different from the concept of transparency, the concept of visibility here looks only from the buying firm's perspective.

It should be noted that the concept of visibility here does not focus on the mechanistic flows of information sharing but the outcome of such flows, which is the access that the firm have to its partner's information. Thus the flow characteristics such as bi-directional versus unidirectional, formal versus informal, direct influence versus indirect influence, and frequency of contacts among inter-firm members (Mohr, Fisher, & Nevin, 1999; Mohr & Nevin, 1990) will not be considered. Instead, the concept of visibility here only stresses the degree of access that a buying firm has over its supplier partner's information.

We posit that visibility may negatively moderate the relationship between supplier dependence and perceived supplier risk. This is because a buying firm with higher visibility into its supplier has a better control to justify the dependence it has on its supplier. Specifically, this argument can be explained as below.

As a firm highly depends on its partner, it usually has five options to choose: (1) maintaining status quo, (2) partial or complete withdrawal from the relationship, (3)

formation of coalitions, (4) extension of the power network, and (5) status enhancement of the more powerful party (Emerson, 1962; Ganesan, 1994). The first three options, however, are usually not desirable or viable in buyer-supplier settings because maintaining the status quo usually means high potential losses in the long run for the buying firm. Partial or complete withdrawal is not viable because the dependent buying firm has limited alternatives. Moreover, formation of coalitions is often not feasible because of legal or economic restrictions. The final two options are the most viable but involve the dependent buying firm making relationship-specific investments (Ganesan, 1994). Such investments, however, have no values outside the relationship and therefore could only be justified when the dependent buying firm could control the investments. Such better control can be the case when the buying firm has better visibility into its supplier (Das & Teng, 2001). In particular, two mechanisms may operate here.

First, a buyer with a high degree of supplier visibility will have accurate, updated, and relevant information and knowledge of both the supplier's operational and strategic issues. Thus it has the ability to predict and then act proactively against potentially disruptions from its supplier (Klein & Rai, 2009). The buying firm then can lower the possibility of being caught up with surprising changes from the supplier and its market environment. This line of argument has been supported by some anecdotal empirical evidence in literature. For example, Lee et al. (1997; 2004) found that shared internal data from its partner could help a firm in a supply chain better able to forecast inventory levels. Sharing operational information, therefore, may help reduce potential operational problems in supply chain (Wareham, Mathiassen, Rai, Straub, & Klein, 2005). On the other hand, sharing strategic information could enhance supply chain flexibilities (Wang & Wei, 2007).

Second, high supplier visibility may provide good bases for control ability (Das & Teng, 2001). This is because having visibility into operational and strategic information of the supplier could facilitate a buying firm to monitor supplier outputs and to understand the processes, resources, and capabilities of the supplier. Such process knowledge and output measurability are necessary for implementing output and behavior controls (Ouchi, 1979). In its turn, the ability to control output and behaviors will reduce the uncertainty over the item supply (Stump & Heide, 1996) and create the sense of confidence (Christopher & Lee, 2004). Thus high visibility into its supplier will reduce uncertainty over item supply by providing good bases for control. The second line of argument has been supported by some empirical evidence. For example, Mohr et al. (1996) found that collaborative communication between channel members are positively associated with the uses of control by manufacturers over their dealers. McEvily and Marcus (2005) found that information sharing between exchange partners enhances their abilities to jointly control problems which may arise.

In short, high visibility into its supplier can justify relationship-specific investments by the buying firm, making the buying firm's perceived significant losses less of a concern. Supplier visibility, therefore, are more needed when the supplier dependence increases. In the reverse case, if a buyer does not depend on

its supplier for the supply, supplier visibility is not necessary because the buyer could either switch to another supplier. Formally, we hypothesize that:

H2. Under high buying firm's visibility into its supplier, the relationship between supplier dependence and supplier risk will be less positive than under low buying firm's visibility.

Mechanisms to build visibility

The concept of visibility was developed from related concepts of transparency and information exchange (V. H. Nguyen, 2013). Mechanisms to build visibility thus can be explored from the related literatures. Two key mechanisms can be identified here: absorptive capacity and IT integration.

First, absorptive capacity can be defined as the ability of a buying firm to value and assimilate the external knowledge and information related to its supplier (cf. Cohen & Levinthal, 1990; Zahra & George, 2002). While absorptive capacity has been widely studied and linked to various performance outcomes, the studies have usually reflected a firm's capacity to apply received knowledge to the commercial ends with disproportionately less attention paid to the capacity to value and assimilate the knowledge (Zahra & George, 2002).

We argue that absorptive capacity can enhance a buying firm's visibility into its supplier. This is because absorptive capacity lowers the cost of valuing and assimilating supplier's information and knowledge. First, one premise of absorptive capacity is that the firm has prior related knowledge to value and assimilate new knowledge (Cohen & Levinthal, 1990). As learning is cumulative, the learning efficiency is greatest when the object to learn is related to

what is already known (Petersen, Pedersen, & Lyles, 2008). Learning is usually much more difficult in novel domains (Cohen & Levinthal, 1990). A buying firm with substantial prior related knowledge about the supplier and the supplier's business environment, therefore, are more able to absorb relevant and updated knowledge from the supplier. Empirically, Petersen et al. (2008) found that the degree that a firm could rely on prior knowledge when doing business in a foreign market is negatively associated with the knowledge gap between what the firm has and what is needed for accomplishing foreign business venture in the market.

Second, absorptive capacity may depend on the prior investment in individual absorptive capacities (Cohen & Levinthal, 1990). Such investment effort could be measured by investment in training the firm's employees (Phan, Baughn, Ngo, & Neupert, 2006). As the employees are equipped with better abilities to learn new knowledge via training, they could overcome the barriers to knowledge transfer (Simonin & Özsomer, 2009). Investment in training employees, therefore, may facilitate a buying firm to acquire knowledge regarding the supplier's business issues such as the supplier's resources, capabilities, and its strategic position. Such updated knowledge may also help the buyer's employees interpret new operational information from the supplier in a more accurate, relevant, and timely manner. Thus the updated operational and strategic knowledge transferred from a supplier can be absorbed easily if a buying firm invested adequately in its employees. Empirically, it has been found that capacity to learn and investment in training are positively related to knowledge acquisition by an affiliate firm

from its foreign parent (Lyles & Salk, 2007). Corroborating the above arguments and evidence, therefore, we formally hypothesize that:

H3: For a buying firm, the higher its absorptive capacity the higher the visibility into its supplier.

Second, information technology (IT) has long been touted as an important potential resource that could help provide firms with higher performance and competitive advantage (e.g. Jean, Sinkovics, & Cavusgil, 2010; Swafford, Ghosh, & Murthy, 2008). IT integration can be defined as the extent of compatibility of IT systems that enable buyer-supplier' common operations and collaboration (cf. Grover & Saeed, 2007; Jean, et al., 2010; Ward & Zhou, 2006).

We argue that IT integration can enhance a buying firm's visibility because it lowers the cost of transferring information and reduces the needed time for sharing information from the supplier. Moreover, when trading partners integrate with each other electronically they have common supporting operations to exchange the standardized and institutionalized information faster and more efficiently (Wang & Wei, 2007). Thus IT integration will smooth out the flow of active information within and across firms (Wu, Yeniyurt, Kim, & Cavusgil, 2006) and then encourage partners to share information which may have not been available (Wang & Wei, 2007). In its turn, sharing information faster and more efficiently provides firm partners with necessary condition to be efficient in gathering accurate, relevant, and updated information (Kim, Cavusgil, & Calantone,

2006). Empirically, it has been found that inter-firm system integration could lead to better quality of information exchanged (Kim, et al., 2006). IT alignment was also found to facilitate supply chain to increase the amount of information exchange (Wu, et al., 2006). For the above theoretical reasons and empirical evidence, we formally hypothesize that:

H4: For a buying firm, the higher the IT integration with its supplier the higher the visibility into its supplier.

Control variable

Inter-organizational trust (hereafter trust) is "the extent to which members of one organization hold a collective trust toward another organization" (Zaheer & Harris, 2006, p. 170). Trust has been widely examined in different literatures including social exchange, service marketing, retailing, buyer-seller bargaining situations (cf. Morgan & Hunt, 1994), organizational research (e.g. Mayer, Davis, & Schoorman, 1995), and more recently highlighted in inter-organizational contexts (see Zaheer & Harris, 2006 for a review). In fact, trust has been theorized to be central in all relational exchanges (Morgan & Hunt, 1994) and so important that it was proposed to be an effective organizing principle, besides market and hierarchy, for example, to help solve interdependence and uncertain problems in inter-organizational contexts (McEvily, Perrone, & Zaheer, 2003). Thus we expect that a buying firm's trust in its supplier may have some impacts on the supplier risk. We include trust in our model to control for the possible effect. Our testing model can be summarized in Figure 1.

Figure 1. The testing model
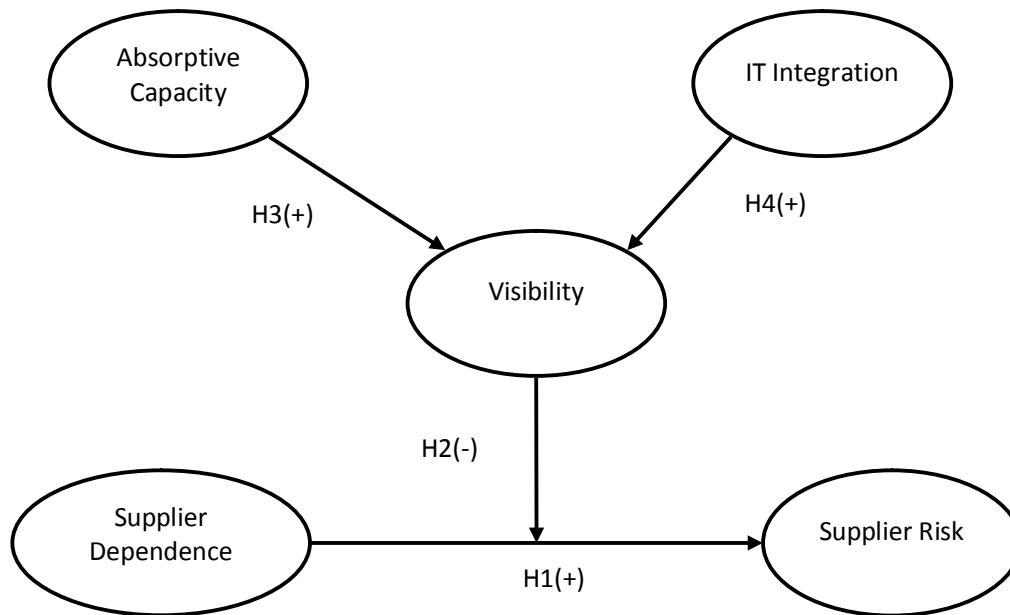
3. Methodology

3.1. Measures and instruments

Based on the proposed model, instruments were developed for a survey with buying firms. All instruments were adapted from previous articles and paper in the field. It should be noted that because a buying firm may buy different items from one supplier, we limit the level of analysis at the firm level to one particular regularly-purchased critical item and direct our respondents to focus on this. Specifically, measurement items for absorptive capacity were adapted from Petersen et al. (2008). Items for IT integration are adapted from the items in Wu et al. (2006). Measurement items for trust were generated and adapted based from Katsikeas et al. (2009) and Klein and Rai (2009). Items for visibility construct were adapted from Nguyen (2011). Items for the construct of supplier risk were adapted from Ellis et al (2010) and Wagner and Bode (2006). Finally, one item of dependence was used from Ellis et al (2010). The generated items have been subjected to an extensive review from academic and industrial experts before large-scale surveys for a quantitative analysis.

To develop questionnaires for survey, the English items are translated into Vietnamese. Another independent expert translated it back into English for comparison. Discrepancies between the translation versions were resolved for the most appropriate Vietnamese version.

Questions were organized into a questionnaire with the flow of the model to reduce common method bias issues. In particular, all questions were presented in a questionnaire starting with respondents to be directed to think about one of the key suppliers who is providing a key item to their firms. For all the questions in the survey, respondents are reminded of the key supplier and the key item that they are referring to in the beginning. Questions are arranged in the questionnaire so that independent variables will be measured before the dependent variables and less sensitive questions will be

asked first. The questionnaire is concluded with demographic questions and any further comments from the respondents.

3.2. Data collection

We collected data from seafood producers in Vietnam because it is one of the key exporting industries in Vietnam but the supply base has been found to be a big problem recently. In fact, blessed with a long coastline of over 3000 kilometers, Vietnam's fishery industry has benefited from such natural boon to register about 6.7 billion USD in exports in 2015. This is a 16-time growth compared to it 20 years ago. Moreover, this growth has also led Vietnam to become one of the five largest seafood exporters in the world and rank third in fishery production and aquaculture (VASEP, 2015). However, recent development in the industry has shown multiple challenges including one from the supply base. According to an industry report by Vietnam Industry Bank in 2013, besides challenges in the demand market, raw materials shortage and quality can pose difficulties for seafood producers and exporters. It has been estimated that costs for input materials in the industry takes up about 70-80% of total production cost. Local supply, however, can only meet about 80% of production demand, causing firms to depend on raw material imports with related difficulties. Challenges in dealing with domestic supply have also been discussed in various reports and media (Vu, 2013).

To collect data, a list of seafood producers was provided by Vietnam Association of Seafood Exporters and Producers (VASEP). In fact, enterprise members of VASEP have been accounting for about 80% of all seafood export of Vietnam recently. About 208 enterprises as VASEP's members were contacted by telephone to be invited to take

part in a survey on supply chain management. About 120 of them were agreed to participate. The others cannot be contacted or refused to participate or reported that they were changing their businesses or they are not producers but merely traders. Two trained experts, one PhD professor and one PhD student with major in supply chain management, visited each agreed firm to do the interviews. The interviews were taken face-to-face with managers at the firms who are knowledgeable about the supply chain relationship related to their firms from the beginning of June to the end of September, 2015. All the survey costs were financially supported from Vietnam's National Foundation for Science and Technology Development (Nafosted) under the research project code II 5.1-2012.06.

Only 70 out of the 120 firms in the list could be interviewed with the full questionnaire. Others were too busy and denied to participate along the data collection process. The firms' turnovers in 2014 ranged from nearly two million to 300 million USD. All respondents are middle or top managers at their firms and are knowledgeable about their supply chains.

4. Main findings

Before testing the structural model, steps are taken to check (1) reliability; (2) discriminant validity; and (3) convergent validity of the measures. Thus we started by estimating exploratory factor analysis and Cronbach's α with the threshold of 0.7 (Nunnally & Bernstein, 1994) using SPSS version 20 to determine the items to be used. However, Cronbach's α is based on the restricted assumption of equal importance of all indicators. Thus following Hair et al. (1998), the composite reliability (CR) and average variance extracted (AVE) of multiple indicators of construct are also used to

assess reliability of a construct. AVE is greater than 0.5 and CR is greater than 0.7 imply that the variance by trait is more than by error components (Hair, et al., 1998). Estimation of the indices was carried out using SmartPLS 3.0 (Ringle, Wende, & Becker, 2015). Results for item loadings, Cronbach's α, CR, and AVE for the finalized items are reported in Table 1. The results seem to show acceptable reliabilities and validities of the measures used.

Table 1. Measure reliabilities and validities

Construct	Items	Loading	Cronbach Alpha	Composite Reliability	AVE
Absorptive Capacity	In doing business with our key supplier, we rely on our familiarity of the business culture in our key supplier's market.	.94	.85	.90	.76
	We commit resources to acquire new knowledge from our key supplier.	.85			
	We commit resources to understand our key supplier's processes.	.81			
IT Integration	My firm's IT system is compatible with our key supplier's IT system.	.73	.94	.95	.82
	My firm's IT system is aligned with our key supplier's.	.97			
	My firm and our key supplier have invested in our IT systems to make them interoperable.	.96			
	Both my firm and our key supplier work together to integrate our IT systems.	.95			
Trust	Our key supplier tends to be candid in our dealings with it.	.90	.85	.92	.80
	We would characterize our key supplier as being fair in its dealing with us.	.86			
	Overall, our key supplier keeps its commitments.	.92			
Visibility	The operational information we have about our key supplier is relevant to our operation.	.76	.94	.95	.77
	Our key supplier shares with us the information regarding its process issues in a timely manner.	.90			
	We believe that the strategic information we have about our key supplier is accurate.	.92			
	The strategic information we have about our key supplier is up-to-date.	.93			
	The strategic information we have about our key supplier is relevant to our business.	.90			
	We have access to long-term plans of our key supplier in a timely manner.	.86			
Supplier dependence	How substitutable is the key supplier of the key item to your firm?	NA*	NA*	NA*	NA*
Supplier Risk	We fear that potential disruptions from our key supplier may result in significant losses for us.	.94	.85	.89	.74
	We fear that our key supplier's vulnerabilities may expose us to significant loss.	.95			
	We fear that our key supplier may expose us to potential disruptions.	.67			

* single-item construct

Reliable and valid measures then were used to test the structural model. To test the moderation effect, we were using two-stage approach for estimating latent variable model (Bollen, 1996). The estimation was done by SmartPLS 3.0 (Ringle, et al., 2015). Bootstrapping protocol with 500 samples was used to provide precision of the estimates (Chin, 1998). The estimation results are reported in Table 2.

First, the estimated coefficient from supplier dependence to supplier risk is .138 which is positive as we hypothesized in H1. However, the coefficient is not significant. Hypothesis 1 thus is not supported.

Second, the estimated coefficient for the moderation term between visibility and supplier dependence to supplier risk is-.703 which is negative and significant and in the reverse sign with the path from visibility to supplier risk. This result means that the higher the visibility the less positive the relationship supplier dependence between and supplier risk. Thus hypothesis 2 is strongly supported.

Third, the path from absorptive capacity to visibility is-.105 which is contrary to our hypothesis 3. However, the path is not significant. Thus hypothesis 3 is not supported.

Fourth, the path from IT integration to visibility is .426 and significant. Thus hypothesis 4 is strongly supported.

It should also be noted that the R^2 to explain the variation of supplier risk and visibility in our model are 53% and 21%, respectively. These results thus demonstrate the acceptable fitness of our model.

Table 2. Structural model estimation

Independent variables and model indices	Path to Visibility		Path to Supplier Risk	
Absorptive capacity	-0.105			
IT integration	0.426	**		
Trust			-0.128	
Supplier dependence			0.138	
Visibility			0.174	
Visibility x Supplier dependence			-0.703	**
R^2	21%		52.9%	
* significant at 0.05 level				
** significant at 0.01 level				
N = 70; Bootstrapping = 500				

5. Discussions and recommendations for further research

The estimation results have shed light to the issue of supplier risk in several ways. First, as firms depend on their suppliers, they are exposed to supplier risk. In this case, a manufacturing firm with less alternatives to change its supplier would perceive the risk more significantly (Ellis, et al., 2010). The relationship between dependence and risk, however, may not hold true in all situations. In particular, contrary to findings from Ellis et al. (2010), we did not find a significant positive relationship between supplier dependence

and supplier risk in our seafood producing firm sample in Vietnam (hypothesis 1 is not supported).

Second, visibility can be an important proactive approach in mitigating supplier risk for a buying firm. Interestingly, the importance of building up visibility into a supplier can be highlighted when a buying firm depends highly on its supplier. Our tested model results have shown that visibility may have the important reducing impact on the relationship between supplier dependence and supplier risk (Hypothesis 2 is strongly supported). Thus, when a buying firm finds it hard to substitute for its key supplier that visibility into the supplier becomes a vital issue. In the reverse case, when a buying firm can easily find other suppliers to replace the key supplier, it may be too costly to keep developing visibility into the supplier. In fact, that can be the case for many buying firms in the seafood processing industry in the emerging economy of Vietnam where the relationships between buyer and seller can be easily broken with or without contract. Enforcement of contract in such an economy is usually costly and even not feasible (T. T. M. Nguyen, Jung, Lantz, & Loeb, 2003).

Notably, our tested model results provide evidence that developing visibility into a supplier may depend on both soft and hard sides of information exchange. In this study, we found evidence for the impact of IT integration, the hard side, between a buying firm and its supplier (Hypothesis 4 is strongly supported). Our hypothesis on the relationship between absorptive capacity, the soft side, and visibility was not supported (Hypothesis 3 is not supported). This result may be due to the fact that knowledge in our sample of the

seafood producing firms in Vietnam may be not too sticky (cf. Szulanski, 1996) and can be relatively easy for buying firms to master. In fact, the absorptive capacity in our buying firm sample is pretty high with the mean of 5.8 out of 7. Moreover, all firms in our sample reported to have the absorptive capacity from 4 to 7 (out of 7).

Thus our paper contributes to the literature in several important ways. First, our paper contributes to the literature on supplier risk from behavioral (Ellis, et al., 2010) rather than from descriptive and prescriptive perspective (e.g.: Zsidisin & Ellram, 2003; Zsidisin, Ellram, Carter, & Cavinato, 2004). Different from extant literature which can consider dependence as a risk burden in all situations, we provide evidence to the contrary. In particular, in situations of high dependence of a buying firm on its supplier, our model suggests developing visibility into a key supplier. In fact, this concept has been discussed in a buyer-seller relationship (Lamming, et al., 2001) but has not been applied in the context of a buying firm mitigating risks from a key supplier. Second, we further develop and test the ways that visibility can be developed. Those include both soft and hard sides of facilitating information exchange from supplier to its buyer: absorptive capacity and IT integration, respectively. Third, our model is also contributed to the literature of dependence by developing and testing when developing visibility can be important and effective and when it is not. In fact, our model has shown that dependence structure between trading partners could influence strategies by a buying firm to develop visibility as it can influence other strategies in the partner relationship (e.g.: Anderson & Narus, 1990;

Gundlach & Cadotte, 1994). Our model thus further confirms the importance of developing visibility in buyer-supplier relationship but such importance should be contingent on power-dependence structure between the partners.

Our paper is not without limitations. First, the model in this paper has been tested with a sample of seafood processing firms in Vietnam. Although it is useful and helps provide initial evidence for the model, testing the models with firms in other industries can enhance the generalizability of the model. Second, all the measures used in this paper were taken only from the buyer side. Although the reliabilities and validities of the measures have been qualified by the tests, future research with some measures taken from both sides of buyer-supplier pairs may further enhance the reliability of the model. Finally, a sample of 70 buying firm may be considered small. Our bootstrapping protocol which generated 500 samples from that original sample helps enhance the precision of the estimated coefficients. Still, future research with larger sample size will definitely help increase the reliability of our model.❑

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