

Trends of Strategic Collaboration between Construction Companies and Their Material Suppliers in Vietnam

Nguyen the Van Ha¹, Hoang Thu Hien²

Corresponding Author: Nguyen Thi Van Ha

Abstract: The purpose of this research is to analyze trends of strategic collaboration between construction companies and their material suppliers in Vietnam. This study is mainly based on qualitative and quantitative research methodology to explore research objectives. This research used content analysis and questionnaire survey to explore the practices of collaboration between construction companies and their material suppliers. The study paper has shown positive changes in collaboration between construction companies and their material suppliers. These changes have implications for the development and efficient performance of construction industry in Vietnam. The analysis and evaluation of strategic collaboration between construction companies and their material suppliers will contribute to its industry development. These finding support construction companies to understand more about different trends of collaboration, level of current collaboration and viewpoints of different construction companies.

Keywords: Strategic Alliance, Collaboration, Information Sharing, Resource Sharing

Date of Submission: 24-05-2018

Date of acceptance: 08-06-2018

I. Introduction

The General Statistics Office (GSO) reported that in 2016, the construction value reached \$47.3 billion, an increase of 10.1 percent over 2015. Most of the fields in the real estate industry had growth in the year and are expected to continue to grow, as the retail market continues to perform better (though the vacancy rate has remained at 10% -12%). The reason for this high growth rate is that construction activity in 2016 was driven by stable materials prices, low interest rates, and improved real estate markets. According to statistics of Vietnam Ministry of Construction (MOC), the total number of enterprises operating in the fields of construction sector is 68.649 (46.500 construction firms, 2829 companies producing building materials, 12.681 construction consultancy and investigation companies and 6639 real estate companies). In the early years of the 21st century, Vietnam construction industry, one of the key sectors contributing to the relatively high gross domestic product (GDP) with the contribution of about 5% - 7%, has much contribution to economic development. Many construction enterprises have self-movement, corporate restructuring and reengineering, and better integration with partners in the business process to enhance business efficiency. However, construction companies have been facing some issues during their business operation, for example the case of collaboration between construction companies and their material suppliers.

There are several extensive difficulties regarding the supply chain of material, which involves the influence of their business operation. For example, the large flow of material in the construction industry is a challenge both for contractors and suppliers in order to create a cost optimized process. The material cost stand for between 40-45% of the total construction cost which further highlights the density of managing the flow of material. The construction site is generally a crowded and limited area where a lot of material is stored in an unorganized manner, which leads to costs concerning e.g. damage, theft and waste. In the past, the collaboration between construction companies and their material suppliers was regarded as shortage of adaptability and suitability because they do not focus on strengthening technical, IT, time related, legal, knowledge-based and social bonds. This may lead to the inefficient business results of construction firms.

Therefore, doing research on trends of strategic collaboration between construction companies and their material suppliers will make significant contribution to exploring different levels of strategic collaboration. If Vietnamese construction enterprises have firm and effective collaboration with their suppliers, the identification of responsibilities, duties, benefits, and collaboration is really clear, and then cost risks can be reduced and cost saving possibility is a matter of course. So it lead to the questions related to how the current trends of strategic collaboration between construction companies and their material suppliers are. The next parts include some contents related to: Literature review related to theories and perspectives of strategic collaboration

¹ Faculty of International Education, University of Transport and Communications, PhD

² Head of Technology management, Management Training Institute, PhD Candidate

in construction industry; Research methodology and design; Research findings related to strategic collaboration between construction companies and their material suppliers; Conclusions and recommendations

II. Literature review related to theories and perspective of strategic collaboration in construction industry

2.1 Theoretical foundations for relations among partners in business

For theoretical foundations, we used three main theories of transaction cost economics, the relational view, and network level approach. Transaction Cost Economics (TCE) developed by Williamson (1981) focuses on the role and effects of transaction costs on the economic behavior of individuals and organizations (Williamson, 1981). According to the TCE, managers are primarily motivated by efficiency considerations to choose governance and collaboration forms that make the sum of production and transaction cost lower. Governing collaborations can be institutionalized in different forms with three main options of governance structure: hierarchy form, hybrid form and market form based on the degree of inter-organizational relationships (Saccani et al. 2007; Todeva and Knoke, 2005).

The relational view emphasizes the adaptability of firms in strategic alliances to get the competitive advantages and postulates that alliances generate the benefits only as they move the relationships away from the attributes of market relationships, e.g. nonspecific asset investment, minimal information exchange, low level of interdependence of resources, and minimal investment in governance mechanism (Dyer & Singh, 1998). The relational view focuses on the generation and development of inter-organizational resources and capabilities through alliance, which are particularly difficult to replicate by rivals due to their idiosyncrasy (Gold, Seuring, Beske 2010).

Networks of enterprises allow relations to be established in all possible directions including horizontal, vertical, and lateral and diagonal relations (Kaluza et al.1999). Provan et al. (2007) postulate that an inter-organizational network at network level consists of multiple organizations linked through multilateral ties, which refers to a group of three or more organizations connecting in ways that facilitate achievement of a common goal. Inter-organizational networks can obtain their competitive advantages through the combination of complementary resources, the share of information and knowledge, the development of capabilities, and the effective governance (Dyer/Singh, 1998). The necessity for complementary resources is a key driver of inter-organizational cooperation. For example, trust, commitments, and shared values of knowledge, information, advanced technology, and learning between supply chain members are regarded as examples of strategically important resources in inter-organizational collaboration (Dyer/Singh, 1998)

2.2 Perspective of supply chain and collaboration in construction industry

The term of supply chain management is originally proposed with the objectives of designating a new form of strategic logistics management (Keith/Webber, 1982; Pfohl, 2000) The phenomena of cross-organizational integration named “the logistics of supply chain” have been fully developed through the popularity of Supply Chain Management (SCM) since the end of the 1990s (Walters, 2007). The SCM addresses new issues of the full complexities of the design, planning, operation, and control of value chains and networks that extend beyond individual enterprises and their immediate suppliers and customer relationships (Klaus, 2009). The most critical point of supply chain management is the development of collaborative approach with the increased importance of inter-functional, inter-instrumental, and inter-organizational integration (Pfohl, 2000).

Collaboration has a variety of definitions and names but is generally treated as meaning the cooperative way that two or more entities work together toward a shared goal. Collaborative interactions among businesses as a profit strategy and models of the dynamics of those relationships have been explored in the business management and networking literature. Additionally, some researchers have explored the specific nature of successful relationships within business partnerships (Ounnar & Pujo, 2005; Patil & Adavi, 2012). Collaboration among organizations in specialized industries such as electronic – electric industry and garment – textiles industry, the alliance most typically seen by evaluators, has become a key issue in research. However, a comprehensive theory of collaboration within the types of construction enterprises and their suppliers has not been studied profoundly and not been presented in the literature.

III. Research methodology and design

Research design follows mixed research method. This study consists of two main methods: Qualitative research and quantitative research. Qualitative research includes an overview of the theory and the results of previous studies on morphological relationships with suppliers of construction enterprises, as well as observation method. For literature review, this study adopted content analysis of scientific literatures of surveys and case studies to explore the practices of collaboration between construction companies and their material suppliers.

Quantitative research was carried out through conducting questionnaire survey, collecting data, and running descriptive statistics based on data collected and coded by SPSS. All data was scanned, tested and analyzed to show collaboration practices between construction enterprises and their suppliers. Survey method is also employed to understand the current practices of collaboration in supply chain. Sharing resources/information and trends of strategic alliance in supply chain among partners has been still regarded as a growing scientific field that falls short of empirical research, especially survey method. Still, survey methodology is proved a valuable research tool to approach several layers of the extended supply chain.

This study conducted survey with approximately 625 enterprises in the field of construction in the North of Vietnam. The authors contacted with contractors (primary contractors, sub-contractors) to conduct survey and some in-depth interviews. Enterprises were selected from some province such as Hanoi, Bac Ninh, Thai Nguyen, Nam Dinh, Thai Binh, Hoa Binh, Vinh, Nghe An. The table below is the statistics information related to the number of enterprises that the author sent the questionnaire

No.	Provinces	Number of enterprises
1	Ha Noi	189
2	Bac Ninh	64
3	Thai Nguyen	68
4	Nam Dinh	44
5	Thai Binh	65
6	Hoa Binh	75
7	Vinh	63
8	Nghe An	57
Total		625

Table 1: The number of enterprises that were sent questionnaire to for surveying

Research objects are the construction businesses with diverse forms of relationships with suppliers. There are a couple of reasons for choosing these firms. Firstly, they (general contractors and sub-contractors) have provided various types of construction works including civil construction, transport construction, industrial construction, irrigation construction, and technical construction. Secondly, sizes of these businesses are ranging from small, medium to large based on the number of employees and the amount of business working capital. Thirdly, objects include enterprises with different forms of collaboration with material suppliers.

We selected 625 enterprises following non-probability sampling technique and then sent questionnaires to 625 enterprise in September 2017 by different ways including direct contact for interview, and indirect contact through email and social internet network for interviewing. At the end of November, by all my effort, I received 157 questionnaires from construction enterprises. However, among them only 146 questionnaires is valid for coding and analyzing. Response breakdowns are presented in Table 2 with detail information about number of questionnaire invitation, number of respondents, number of valid respondents, and response rate with note.

Phase of survey	Number of questionnaire invitation	Number of respondents	Number of valid respondents	Response rate	Note
First mailing invitation	300	46	38	12.7%	Not high rate
Second mailing invitation	200	26	23	11.5%	Not high rate
Direct in-depth interview	90	85	85	94.4%	Move to direct contact
Total	625	157	146	23.4%	

Table 2: Breakdown of responses

IV. Research findings related to strategic collaboration between construction companies and their material suppliers

4.1 Profile the background characteristics of respondent companies

Using the secondary resource from public domain of Ministry of Construction, the database of the study is established with a sample frame of 625 companies with the following characteristics: Construction companies

located in North of Vietnam, of medium and large size according to Vietnam criteria, and, doing business in the construction industry as project owners, main and sub-contractors

I received 146 valid responses and used them in the analysis. This survey obtained the response rate of nearly 24.3%. Among them, 24 firms are state-owned construction companies (16.4%) and 86 firms are joint stock construction companies (58.9%). 15.1% of respondents (22 companies) completing the questionnaire are from limited construction companies. Only 8 private construction companies (5.5%), and 3 FDI construction companies involved in replying the questionnaire. Otherwise, 3 companies didn't not state their business type (See Table 3). Many of them are joint stock companies and limited companies (74%), indicating that the trend of privatization in construction industry in Vietnam. The trend also helps companies in construction industry have more freedom to make collaboration together.

Types of construction companies		Frequency	Percent
Valid	State-Owned Company	24	16.4
	Joint Stock Company	86	58.9
	Limited Company	22	15.1
	Private company	8	5.5
	FDI company	3	2.1
	Others	3	2.1
	Total	146	100.0

Table 3: Types of Construction Companies

Respondent companies dealing with building and constructing different types of works. Among them, 51.8% companies build civil construction (114 companies) in construction industry. For industrial and irrigation construction, approximately 72 companies deal with this construction, accounted for nearly 53%. Only 18 companies are working with transport construction, accounted for 13.1%. The rest ones (7.3%), around 16 companies are implementing technical construction works (Table 4).

Type of construction works	Responses		Percent of Cases
	N	Percent	
CT1: Civil construction	114	51.8%	83.2%
CT2: Transport construction	18	8.2%	13.1%
CT3: Industrial construction	30	13.6%	21.9%
CT4: Irrigation construction	42	19.1%	30.7%
CT5: Technical construction	16	7.3%	11.7%
Total	220	100.0%	160.6%

Table 4: Types of Construction Companies

With the trend of urbanization and industrialization in Vietnam for the last 20 years, the popularity and diversification of apartment building, blocks of flats, office building, and condominium have developed the type of civil construction. In order to build the civil construction, the project usually has one main owner/investors, some main or sub-contractors related to building, interior decoration and final completion. These contractors have diversified collaboration with material suppliers from short-term contract to long-term contraction. In order to minimize the cost of construction, the relationships among them nowadays are more and more connected and integrated to share information.

According to the data collected, construction companies can use some main materials for their construction works (Table 5). Due to their practices, the main materials provided from suppliers including:

Table 5: Some main materials used by construction companies

Main Material	Responses		Percent of Cases	
	N	Percent		
Types of Materials	Iron	109	16.0%	74.7%
	Cement	113	16.6%	77.4%
	Steel	97	14.2%	66.4%
	Sand	95	14.0%	65.1%
	Gravel	67	9.8%	45.9%
	Brick	103	15.1%	70.5%

	Stone	43	6.3%	29.5%
	Others	54	7.9%	37.0%
Total		681	100.0%	466.4%

Among them, many companies selected cement (16%, equivalently 113 responses), iron (16%, equivalently 109 responses), brick (15.1%, equivalently 103 responses), steel (14.2%, equivalently 97 responses) and sand (14%, equivalently 95 responses) are main construction materials.

4.2 Methods and ways of evaluating selection of material suppliers in construction companies

Related to methods and ways of selecting material suppliers in construction companies, especially for general contractors and sub-contractors, the thesis mentioned the numbers of material suppliers construction companies use for each material. According to Table 6, many respondent companies (nearly 37%, equivalent to 54 responses) have from 2 to 5 suppliers of different kinds of materials. 17.8% of respondent companies (equivalent to 26 responses) have from 5 to 10 suppliers of different kinds. They diversified materials suppliers based on their objectives and practical situation. However, a lot of them have only single material suppliers due to their strategic collaboration (nearly 37%, equivalent to 54 responses), based on only one kind of materials. By having one supplier for materials, construction companies seem to be dependent on their supplier. However, in fact, according to our interview, the single supplier is mainly the giant suppliers and distributors of materials for construction companies. They are professional and industrial suppliers with highly collaboration and integration with construction companies in supplying materials.

Numbers of Suppliers		Frequency	Percent
Valid	More than 10 suppliers	11	7.5
	From 5 to 10 suppliers	26	17.8
	From 2 to 5 suppliers	54	37.0
	Only single material suppliers	54	37.0
	Total	145	99.3
Missing	System	1	.7
Total		146	100.0

Table 6: The number of suppliers in construction companies

Construction companies have also managed and controlled material suppliers following different steps and processes. For example, in the questionnaire the author asked them 6 steps for managing and controlling material suppliers. According to Table 7, 27 respondent companies selected the work of listing potential material suppliers (equivalent to 13%). Meanwhile, only 12 respondent companies selected and evaluated their material suppliers (equivalent to 5.8%). Many companies implemented step of negotiating and signing contract with material suppliers (51.7%, equivalent to 107 responses). Some companies (27 responses, equivalent to 13%) have the lists of potential material suppliers for them to select. Not so many companies have programs for technical and financial support for material suppliers (21 responses, equivalent to 10.1% only). It means that relationships with material suppliers have not been closed and firm enough for them to support and share resources. Surprisingly, 38 respondent companies (equivalent to 18.4%) have no interests in and care of material suppliers. In their viewpoints, if material suppliers can supply materials with good quality, good price and good delivery following their demand, they can accept and make order with them without signing long-term contract or long term collaboration.

Table 7: Ways of Managing and Controlling material suppliers

Steps of Managing and Controlling material suppliers		Responses		Percent of Cases
		N	Percent	
Managing and Controlling Materials	List potential material suppliers	27	13.0%	20.6%
	Select and evaluate material suppliers	12	5.8%	9.2%
	Negotiate and sign contract with material suppliers	107	51.7%	81.7%
	Technical and financial support for material suppliers	21	10.1%	16.0%
	No Interest and care in material suppliers	38	18.4%	29.0%
	Only interest and care in each situation	2	1.0%	1.5%
Total		207	100.0%	158.0%

The thesis also determines the suitability of construction enterprises with supplier collaboration by evaluating material suppliers. Many companies used criteria of suitable price (107 responses, equivalent to 14.7%), suitable quality of materials (114 responses, equivalent to 15.7%), convenient conditions of transport and payment (101 responses, equivalent to 13.9%), material supply in right time, right place, right quality according to contract (63 responses, equivalent to 8.7%) (Table 8)

Table 8: Criteria for selecting material suppliers

Criteria for selecting material suppliers	Responses		Percent of Cases
	N	Percent	
Suitable price	107	14,7%	73,3%
Suitable quality of material	114	15,7%	78,1%
Relationship of strategic alliance	98	13,5%	67,1%
Convenient conditions of transport and payment	101	13,9%	69,2%
Frequent relationship and transaction	61	8,4%	41,8%
Material supply: in right time, right place, right quality according to contract	63	8,7%	43,2%
Distance between material suppliers and construction companies	52	7,1%	35,6%
Professional staff and means of transport of material suppliers	49	6,7%	33,6%
Healthy financial situation of material suppliers	40	5,5%	27,4%
Good management approach of material suppliers	43	5,9%	29,5%
Total	728	100,0%	498,6%

4.3 Evaluating trends of strategic collaboration between construction companies and their material suppliers

According to the questionnaire form, the author mentioned 5 main trends and forms/models of collaboration between construction companies and their material suppliers, including:

- 1.XHHT1: Maintain short term collaboration through supply contracts
- 2.XHHT2: Maintain long term collaboration through frame supply contract and specific annexes
- 3.XHHT3: Establish strategic alliance in long term supply: information share and integration
- 4.XHHT4: Establish strategic alliance in long term supply: sharing and supporting financial resources, capital investment
- 5.XHHT5: Establish strategic alliance in long term supply: merger and acquisition, joint venture

The trends and models of collaboration between construction companies and their material suppliers come from the lowest level of collaboration (XHHT 1: Short term collaboration and supply contract) to the highest level of collaboration (XHHT 4: strategic alliance with sharing and supporting financial resources and capital investment; XHHT 5: strategic alliance with merger and acquisition, joint venture).

The author also want to explore the which of the construction enterprise-supplier collaboration model are having the highest agreement based on the type of construction companies related to state-owned company, joint stock company, limited Company, private company and FDI company.

According to Table 9, with the model of short term collaboration through supply contract (XHHT1), the average level of agreement is 3.93 point, indicating that it has normal agreement of supply contract. Among them, state-owned construction companies have rather higher agreement than joint stock and private companies. This is the highest result among other companies related to joint stock companies, limited company and private companies, indicating that state-owned construction companies normally having huge construction works and they seem to have many material suppliers for material provision at any time.

Table 9: Selection of trends and model of collaboration between construction companies and their material suppliers

Trends and Models of Collaboration		Types of construction companies					Total	
		State Owned Company	Joint Stock Company	Limited Company	Private Company	Joint Venture / FDI		Other Companies
		Count	Count	Count	Count	Count		Count
XHHT 1	1.00	0	1	0	0	0	1	
	2.00	0	10	1	0	0	11	
	3.00	3	16	5	2	0	1	

	4.00	11	37	9	5	2	1	65
	5.00	10	22	7	1	1	1	42
Mean XHHT1		4.29	3.80	4.00	3.88	4.33	4.00	3.93
XHHT 2	2.00	0	3	0	0	0	0	3
	3.00	4	36	5	2	1	1	49
	4.00	4	21	7	3	0	1	36
	5.00	16	26	10	3	2	1	58
Mean XHHT2		4.50	3.81	4.23	4.13	4.33	4.00	4.02
XHHT 3	2.00	0	4	1	0	0	0	5
	3.00	2	21	2	0	1	0	26
	4.00	0	17	2	1	0	0	20
	5.00	22	44	17	7	2	3	95
Mean XHHT3		4.83	4.17	4.59	4.88	4.33	5.00	4.40
XHHT 4	1.00	0	1	0	0	0	0	1
	2.00	0	5	2	0	0	1	8
	3.00	0	23	0	1	0	0	24
	4.00	2	14	6	0	0	2	24
	5.00	22	43	14	7	3	0	89
Mean XHHT4		4.92	4.08	4.45	4.75	5.00	3.33	4.31
XHHT 5	2.00	0	8	0	1	0	0	9
	3.00	5	33	4	0	1	1	44
	4.00	4	18	6	1	0	0	29
	5.00	15	27	12	6	2	2	64
Mean XHHT5		4.42	3.74	4.36	4.50	4.33	4.33	4.01

The trend and model of maintaining long term collaboration through frame supply contract and specific annexes (XHHT2) is also got the highest agreement from state-owned construction companies. Average level of XHHT 2 for all respondent companies is 4.02, meanwhile the mean for state-owned construction companies is 4.50. With the state mechanism and policy, it seem that state-owned construction companies has still maintained the monopoly of state in construction industry and therefore have a lot of power.

With the trend of model of strategic alliance (XHHT 3, XHHT 4, XHHT 5), there are three levels including long term supply with information share and integration (XHHT3); long term supply with sharing and supporting financial resources, capital investment (XHHT4); long term supply with merger and acquisition, joint venture (XHHT5). Long term supply and contract with information and resource sharing gets the higher agreement from almost types of construction companies especially for state-owned companies (4.83/4.92), joint stock companies (4.17/4.08), private companies (4.59/4.45) and FDI/Joint venture companies (4.88/4.75). However, model of strategic collaboration with resource sharing has lower level of agreement than information sharing, especially for the case of joint stock construction companies. They showed the lower agreement for strategic collaboration model, especially for the case of long term supply with merger and acquisition as well as joint venture (3.74). Meanwhile, the value for other companies is equivalently in turn of 4.42, 4.36, 4.50 and 4.33, indicating also the lower level of agreement in comparison with XHHT3 and XHHT4

Therefore, the result presented that the model of strategic collaboration with information sharing is the trend and requirement of implementing construction business operation in 21st century with 4.0 industrial revolution for all types of construction companies. Almost construction companies need the support from partners in strategic collaboration to reduce business operation costs.

For the model of strategic collaboration at level of sharing resources, financial supports, and capital investment as well as merger and acquisition, joint venture (XHHT4 and XHHT 5) also has lower level of agreement than strategic collaboration with XHHT3. This indicate that the higher level of strategic collaboration between construction companies and their material supplier has not been fully developed because of the old and traditional construction industry.

4. Recommendations and Conclusions

We used a quantitative research method with in-depth interviews and email survey to explore the current practices of collaboration trends and understand trends of strategic collaboration between construction companies and their material suppliers. Almost companies are moving to higher level of collaboration with more information and resource sharing like strategic partnering or relationships. The trend of strategic alliance between construction companies and their material suppliers with information sharing and integration has been highly accepted to develop by 65% of the respondent companies. The finding indicate that companies in

construction supply chain nowadays collaborate with each other through more strategic corporate agreements than only short-term contract.

With the changes of business environment and mindset, construction companies and their material suppliers have paid more attention to identifying possible activities of collaboration, formalizing their strategic agreement and commitments, and developing collaboration options. They have increasingly concerned in sharing information and resources beyond arm's length contract or frame contract. They solved the issues related to returned materials through the operations of after-sales customer services in marketing or sales departments with quick and convenient procedures. Otherwise, many interviewers said that they have not developed a separate comprehensive strategy for collaboration with material suppliers, they have still worked with suppliers through their strategies of production and operation. Developing strategic network for material suppliers has not been formally established in many respondent companies.

With highly complicated supply chain management, e.g. many stakeholders, many processes, and a lot of activities of construction chain, firms should select an appropriate strategy that optimal exploits both internal and external resources. Relationship between construction companies and their material suppliers should be given special resource attention in this case due to the high initial resource investments for direct involvement. The transaction cost economics can be applied here to support firms in evaluating current resources and internal capabilities for in-house operations of construction. Moreover, developing a specific construction plan (e.g. construction processes in project, stakeholder involvement, material supply plan, time schedule), and collaboration networks (e.g. relationship networks with material suppliers, main contractors, and sub-contractors; transportation mode, location of handling, storage, and process, and relationships with material & service providers) may also help firms to make decision of the involvement level. The current development of specialized material providers and increased inter-organizational collaboration in construction operations can help firms dealing with different and complicated processes of construction management more proactively and efficiently. Integrating both internal and external resources and capabilities for construction operations between construction companies and their material suppliers may be the best solution for firms in practices to reduce costs and obtain higher profitability

References

- [1]. Dyer, J., & Singh, H. (1998). The relational view: Cooperative strategy and sources of interorganizational competitive advantage. *Academy of Management Review*, 23(4), 660 - 679.
- [2]. Gold, S., Seuring, S., & Beske, P. (2010). Sustainable supply chain management and inter-organizational resources: A literature review. *Corporate Social Responsibility and Environmental Management*, 17, 230-245.
- [3]. Kaluza, B., Blecker, T., & Bischof, C. (1999). Networks – A cooperative approach to environmental management. Klagenfurt.
- [4]. Klaus, Peter. (2009). Logistics research: A 50 years' march of ideas. *Logistics research* 1, 1, 53-65. Retrieved from Springer-Verlag
- [5]. Keith, O., & Webber, M. D. (1982). Supply-chain management: Logistics catches up with strategy. In M. Christopher (Ed.), *Logistics - The strategic issues* (pp. 63-75). London: Chapman & Hall.
- [6]. Ounnar, F., & Pujo, P. (2005). Evaluating suppliers within a self-organized logistical network. *The International Journal of Logistics Management*, 16(1), 159–172. <https://doi.org/10.1108/09574090510617402>
- [7]. Patil, S., & Adavi, P. . (2012). A Survey Study Of Supplier Selection Issues In Construction Supply Chain. *International Journal of Engineering Research Adn Applications*, 2(5), 1806–1809.
- [8]. Pfohl, H.-C. (2000). Supply chain management: Concepts, trends and strategies (In German). In H.-C. Pfohl (Ed.), *Supply Chain Management: Logistics plus* (pp. 1-200). Erich Schmidt Verlag.
- [9]. Provan , K. G., Fish, A., & Sydow, J. (2007). Interorganizational networks at the network level: A review of the empirical literature on whole networks. *Journal of management*, 33(3), 1-65. Sage Publications.
- [10]. Saccani, N., Johansson, P., & Perona, M. (2007). Configuring the after-sales service supply chain: A multiple case study. *International Journal of Production Economics*, 110(1-2), 52-69.
- [11]. Todeva, E., & Knoke, D. (2005). Strategic alliances and models of collaboration. *Management Decision*, 43(1988), 1-22.
- [12]. William, J. O. (1998). *Construction Supply-Chain Management: A Vision for Advanced Coordination, Costing, and Control*.
- [13]. Waters, D. (2007). Trends in the supply chain. In D. Waters (Ed.), *Global logistics - New Directions in Supply Chain Management* (5th ed., pp. 1 - 429). London: Kogan Page Limited.
- [14]. Williamson, O. E. (1981). The economics of organization: The transaction cost approach. *American Journal of Sociology*, 87(3), 548

Hoang Thu Hein "Trends of Strategic Collaboration between Construction Companies and Their Material Suppliers in Vietnam." *IOSR Journal of Business and Management (IOSR-JBM)* 20.6 (2018): 81-88.