Factors Impacting on the Supply Chain Collaboration of the Furniture Industry in Vietnam*

Huynh Thi Thu Suong [1]

Abstract

The purpose of this research is to explore the factors affecting on Supply chain (SC). In fact, the collaborative supply chain (CSC) concept in Vietnam is quite new. Apart from obvious differences of doing business between Western versus and most of developing countries such as Vietnam, the literature suggests that collaboration in the supply chain (SC) of the furniture industry are quite low. The primary reason for such low adoption rates is low awareness of enterprises. In order to achieve the purpose of this study, a literature survey related to SC, CSC was carried out, and an empirical analysis was conducted among 276 manufacturers in this industry with the results analyzed. Using Cronbach's alpha analysis, Explore Factor Analysis (EFA) and Regression Analysis (RA) with primary data collected 276 valid samples from 393 samples in Vietnam, this paper explores and confirms that there are existed six basic factors affecting the collaboration in supply chain including: (i) Trust; (ii) Power; (iii) Maturity; (iv) Strategy; (v) Culture; and (vi) Frequency. Results of the research show strong evidences for policy makers and enterprises for management the supply chain collaboration in furniture industry as well as its contribution to literature review of supply chain management.

Keywords: Furniture industry, Supply chains, Collaboration, Vietnam.

JEL Classification Code: L10, L21, M10, M11.

1. Introduction

Regarding to restructure the business activities towards escalating competitiveness and added values, SC is considered as a key strategy for the survival and development of any enterprise, especially in furniture industry. The furniture industry in Vietnam has a great deal of potential growth demonstrating during the past decade by increasing of numbers's enterprise and export rate. In 2016, Vietnamese funiture industry was ranged as the 4th exporter in the world after China, Germany, Italy (2016) and the 2nd in the Asean just behind Malaysia, this industry has made significant progress in various aspects such as decent packaging or more efficient/time-saving assembling process. The Voluntary Partnership Agreement (VPA) on Forest Law Enforcement, Governance and Trade (FLEGT) between Vietnam and the European Union (EU) has enacted already. This is considered as a great opportunity for the Vietnam wood industry to expand competitiveness in export market. However, this industry has been showing many weaknesses whether not improving, causing substantial challenges for the development of the industry in the coming time including spontaneous production and distribution, lack of connection among stakeholders, and failure in meeting sustainability requirements for both objective and subjective reasons. To deal with this matter, the CSC should be conducted for this industry as soon as possible.

[1] Corresponding Author, University of Finance and Marketing, Ho Chi Minh City, Vietnam. [Postal Address: 2/4 Tran Xuan Soan, Tan Thuan Tay Ward, District 7, Ho Chi Minh City, Vietnam] E-mail: h.thusuong@gmail.com

2. Literature Review

2.1. Overview of Supply Chain Collaboration

2.1.1. Supply Chain Collaboration

SC is a network of production and distribution which performs the functions of purchasing raw materials, converting raw materials into finished products, and distributing them to customers (Ganeshan & Harrison, 1995). It means the SC consists of relevant, direct or indirect stages, to meet customer needs. SC not only includes manufacturers and suppliers, but also carriers, warehouses, retailers and customers themselves (Chopra & Meindl, 2001). In general, SC is considered as connections between suppliers, customers, manufacturers and service providers involved in the business process. In other words, SC is a process that starts from raw material until the end product which is made and delivered to consumers in order to achieve two basic objectives: (i) Establishing relation between suppliers of suppliers and customers of customers as they affect results and efficiency of the supply chain; (ii) Gaining effective and efficient throughout the supply chain. Therefore, building collaborative relationship is necessary to improve the business efficiency in the SC.

CSC is widely studied from many different points of view and collaboration concepts began to be widespread thorough in the areas of SC in the mid-1990s (Barratt, 2004). Collaboration is defined as a cooperation of two or more members by working together to create a competitive advantage through information sharing, joint decision making, and sharing the benefits from greater profits by satisfying the customer needs than acting alone (Simatupang & Sridharan, 2002). Simatupang and Sridharan (2005a) explain that collaboration is one what between independents but related companies to share their resources and their abilities to meet the needs of customers. Simatupang and Sridharan (2005b) defines the term of collaboration is two or more companies share responsibility to exchange information, management, implementation, and performance measurement plans. The cooperation can be described as a reciprocal relationship type, in which participants agree on investment in resources, along with achieving goals, sharing information, resources, rewards and responsibility as well as to make decisions and solve problems together. In conclusion, CSC helps a business organization to coordinate and operate efficiently, such as supply chain management, cost–saving and inventory, increasing the level of customer satisfaction (Hadaya & Cassivi, 2007; Lambert & Gardner, 2004; Bäckstrand, 2007).

2.1.2. Types of CSC

The relations of SC are mostly active vertically or horizontally. Vertical relations cover all of the relations within the enterprises, between components in difference classes. While horizontal relations are within the same class. A vertical relation completely connects the first provider in many ways to final customer. These relations occur when central factors increase influence on other factors in many different classes. Vertical alignment is always directed at both the relationship between the manufacturer and the first supplier and between the manufacturers and the final customer (Christopher & Towill, 2001). There are three forms building supply chain collaborations including vertical collaboration, horizontal collaboration and multi-dimensional cooperation (Benita, 1997; Suong, 2012).

2.1.3. Levels of CSC

The interaction in the supply chain including three main components or more, referred to transaction activity, collaboration and relationship (Suong, 2012). Each level of interaction contains a continuum type of relations as following, (i) Transaction is generally understood as the exchange or transfer of goods, services or finance to each other. A transaction relationship means the activity of exchanging discrete value, especially about price (Bäckstrand, 2007). The commercial transactions that involved price negotiation when the relationship with suppliers is a rival relationship and the goal is to increase personal profit of a member in the chain; (ii) Cooperation is like working together or cooperate with a partner to whom cannot connect immediately. In other word, cooperation can be beneficial for all of actors among SC. The types of collaborative relationships are rival cooperation or non-rival cooperation (Cox, Sanderson, Watson, & Lonsdale, 2001), partners and the cooperation between manufacturer and supplier (Harland, 1996); (iii) Linking form is often viewed as an union of the two entities into one entity for a business progress between two actors, the affiliate relationship consists of vertical link, buy back and venture, and full-ownership or merged (Togar & Sridharan, 2002).

2.2. Framework of the Factors Affecting Supply Chain Collaboration

2.2.1. Structure of Furniture Supply chain in Vietnam

Depend on each industry, there are differrent actors in its SC. In the furniture industry, there are three major actors within SC including wood supplier – manufacturer – distributor in figure 1 as below
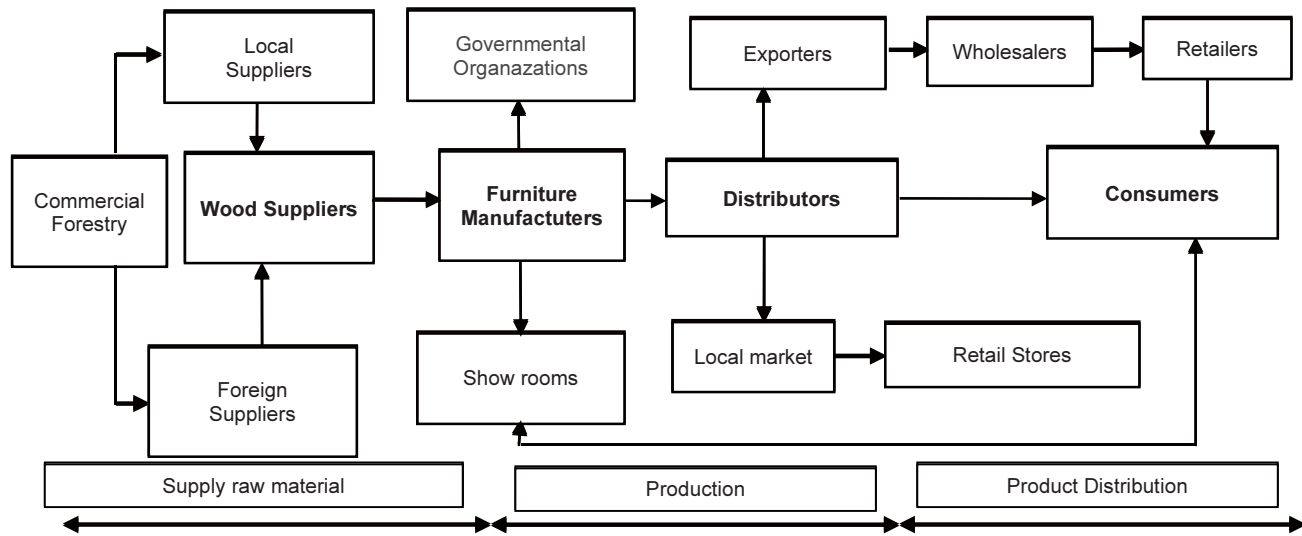
Source: Based on Surveyed and Synthesized by Suong(2011a&b, 2013)

Figure 1: Furniture supply chain of Vietnamese enterprises

Surveying characteristics of enterprises within the furniture industry including three major actors are material suppliers, manufacturers and distributors. It was found that these enterprises do not have a close connection (both vertical and horizontal) among them. For example, they have not yet been aware of using the same technical production from raw material standards, in compliance with specification and quality standards. This reveals actors' activities in this SC are spontaneous and scattered, prefer Short-term interests than Long-term benefits. To be better understood role and relations among actors in the CSC, this paper focuses on analyzing the role of each actor as follows:

- **Suppliers**: Almost wood materials for processing has still relied on imported source and planted timber. There are two types of suppliers which are foreign (81%) and local (19%). The supplier, after reaching agreement on the price, payment method, delivery conditions, quantity and quality of the material, will deliver the goods. To supplying, foreign suppliers are often selected by the enterprises through referrals from partners or self-seeking. This relationship is rarely formed under the assistance of association or organization of government. Until now, Vietnam has not had an offical importer of wood materials. Vietnam's wood importers can be divided into three categories: (i) self-importing timber for production, (ii) imported enterprises timber for production and for sale to other domestic enterprises, (iii) timber importer for domestic production and retailing.

Although the volume of imported wood is very large, Vietnam has not a large import organization and a large-scale wood market for furniture for involving companies to make transactions so far. In reality, wood is imported in different countries in terms of custom regulations and procedure, however, the knowledge of this sector of Vietnamese timber importers is limited. Due to increasing freight leading to a high cost in wood importing, these problems reveal weaknesses of Vietnamese furniture enterprises regarding consolidation for negotiation, large-volume imported shipment, supply and inventory for production continuously.

- **Manufacturers**: All of most manufacturers' size are small and medium enterprises with basic characteristics such as: (i) Limited in capital management; (ii) Lack of long-term vision due to limited capital, technology and management capacity and lack of awareness of the logistics role in their operations; (iii) Limited ability to design product designs, most of which are ordered; (iv) Restrictions on trade promotion capacity; (v) Businesses are not actively linked together to be able to meet orders in large volume and is unwilling to share information for exploiting the market each other.

The habit of manufacturers is to order raw materials when needed, they rely less on demand forecasts for efficient inventory management. Timber is imported mainly from abroad through agents in Vietnam or signed contracts to import directly from the trading companies or sawmills. Over 80% product volume is indirect exported under agents or brokers from Taiwan, Hong Kong, China. Less than 20% remained products delivered to local market. Research of theories and realities show that Vietnamese wood

processing enterprises do not have a real linkage between manufacturers and suppliers, manufacturers and distributors in the real sense of specialization. The main relationships between the manufacturer and the supplier, manufacturer and the distributor are all not set up in the same way. As a result, each manufacturer can both import and distribute, causing a low efficiency due to lack of experience in many fields as well as limited financial capacity. And inevitably leads to a low competitiveness of enterprises compared to FDI enterprises originating from China and Taiwan.

- Distributors: Distribution of furniture is still entangled in a number of contradictions and temporary manufacturers, consumers have to accept. Specifically: (i) for export: after manufacturing process, enterprise will sell their goods with pre-approved export contracts (orders from overseas), first through a home wholesale, then to the retailers or retailers' shops, and few businesses have showrooms overseas; (ii) for local market: some enterprises are both manufacturing and retailing through their agents and showrooms and/or their products are distributed with the products of other competing manufacturers through the same distributor.

In brief, this study focused on the collaborative supply chain in which there are three basic actors: suppliers, manufacturers, distributors. Thus, the purpose of this research is to aim at the relationship between manufacturers and suppliers; manufacturers and distributors which are displayed as the diagram below Figure 2.
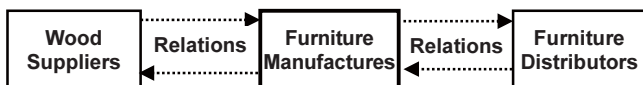
Source: Based on Research approach by Suong (2011a&b, 2012)

Figure 2: Relationship in the basic actors of the Vietnam Furniture supply chain

2.2.2. Factors Affecting Collaboration of Furniture Supply Chain in Vietnam

Focus on analyzing relationships among components within the supply chain, the research has shown eight basic factors affecting the supply chain collaboration as following:

- Trust (TRU): A positive belief, attitude, or expectation of one party concerning the likelihood of action or outcome of another will be satisfactory. This factor therefore affects positively on CSC (Handfield & Bechtel, 2001; Bäckstrand, 2007; Lambert & Gardner, 2004; Suong, 2012).

- Power (POW): When designing a SC and cooperating with other companies, one has to consider the other actor's size, impact, and status. If the other actor is larger in size, which generate greater impact and higher status, it will have more power in that relation. With greater power, comes the ability to force a weaker actor to make decisions that are

merely favorable for the powerful actor (Maloni & Benton, 1999; Cox et al. 2001; Handfield, 2004b; Bäckstrand, 2007; Suong, 2012).

- Maturity (MAT): - Maturity (MAT): Increasing SC interaction maturity leads to reduced uncertainly of what improved business performance, and is the best route to follow to achieve competitive advantage. The characteristics of maturity process are predictability, capability, control, effectiveness, and efficiency (Towill & Childerhouse, 2002; Handfield, 2004a; Bäckstrand, 2007; Suong, 2012).

- Frequency (FRE): Frequency refers to how often a transaction occurs. More transactions suggest greater routinization of interaction and are hence, an implication/ incitement to form a closer relationship to make sure that transactions run smoothly (Simatupang & Sridharan, 2005b; Bäckstrand, 2007; Suong, 2012).

- Distance (DIS): Distance between the partners in the SC refers as geographical distance, cultural distance and organizational gap between partners through the SC (Cooper, Lambert, & Janus, 1997; Togar & Sridharan, 2002; Suong, 2012).

- Culture (CUL): Defined as shared values and belief that can help enterprises of SC to understand organizational functioning process and provide behavioral norms. The collective programming of their mind which distinguishes the members of one group or category of people from others. Differences in organizational or social level could create differences in opinion or conflicts of interest (Togar & Sridharan, 2004; Barratt, 2004; Suong, 2012).

- Strategy (STR): Collaborative planning refers to collaborations among trading partners to develop various plans such as production planning and scheduling, new product development, inventory replenishment, promotions and advertisement. Decision synchronization refers to a process in which SC partners orchestrate decisions in SC planning and operations that optimize the SC benefits (Simatupang & Sridharan, 2005a,b; Suong, 2012).

- Policies (POL): Governmental intervention in business activities. Local governments exert more direct influences by implementing formal and informal policies related to economic activity (Whipple & Russell, 2007; Suong, 2012).

2.3. Proposed Research Model

From the study of published research concerning, CSC showed that lots of factors affecting CSC in different industries. In this study, combining literature review and experimental basis, eight factors enable to create a model research for Vietnamese furniture industry. From the initial proposal model, the author uses survey data to process and inputs exploratory factor of analysis to identify factors that affect CSC before having final research model.
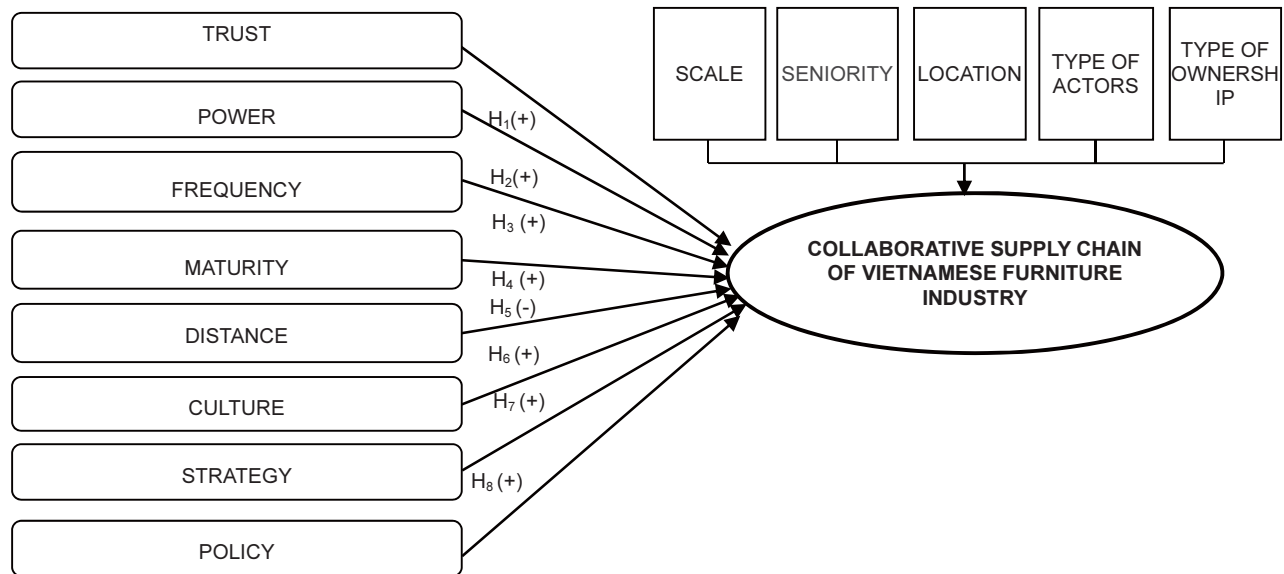
Source: Qualitative research results by Suong (2013)

Figure 3: Initial research model for furniture supply chain in Vietnam

This study examines the furniture supply chain collaboration. Hence, the following hypotheses will be tested:

H1: The degree of trust between partners affects positively on the collaboration in the supply chain of furniture enterprises in Vietnam, (H1, +).

H2: The power of partners affects positively on the collaboration in the supply chain of furniture enterprises in Vietnam, (H2, +).

H3: The degree of maturity in the relationship between the partners affects positively on the collaboration in the supply chain of furniture enterprises in Vietnam, (H3, +).

H4: The frequency of transactions between partners affects positively on the collaboration in the supply chain of furniture enterprises in Vietnam, (H4, +).

H5: The distance between partners affects negatively on the collaboration in the supply chain of furniture enterprises in Vietnam, (H5, -).

H6: The policy of the government affects positively on the collaboration in the supply chain of furniture enterprises in Vietnam, (H6, +).

H7: The collaborative culture affects positively on the collaboration in the supply chain of furniture enterprises in Vietnam, (H7, +).

H8: The collaboration strategy of partners affects positively on the collaboration in the supply chain of furniture enterprises in Vietnam, (H8, +).

3. Research Methodology

This research was conducted basing on two methods: (1) Qualitative research aims to construct, calibrate the component scale: the trust rate among the partners; the power of partner; the maturity level of the relationship among partners; the frequency of transactions among partners; the distance among partners; the policy of the government; the cultural cooperation, them and cooperation strategy; (2) Quantitative research aims to collect, analysis survey data, as well as testing the component scale, measuring the research theory model and the hypothesis. Preliminary research is built and calibrated by scale and added the observation variables through qualitative and quantitative methods. Preliminary qualitative research is done by expert with great consideration and group discussions with furniture enterprises by the sampling method. The content of the discussion related to the factors that influence collaboration of actors in the SC which relates to factors influence on collaboration of SC's actors; comment on; give out the research model for the discussion group to comment on the factors that affect the CSC and the draft scale built up by the author group and corrected by the discussion group. After exchanging of ideas, the discussion group agreed with the proposed model. The discussion group is also recommended to calibrate some of the names in the scale components, and proposed to amend the scale, modify some observed variables. From that, the research group has agreed about the factors that affect the furniture

CSC, including: (1) the degree of trust among partners; (2) the power of partner; (3) the degree of maturity in the relationship among partners; (4) the frequency of transactions among partners; (5) the distance among partners; (6) the policy of the government; (7) collaborative culture; (8) collaboration strategy of partners. The scale of the research model included 39 observation variables measured by Likert scale 5 in which points with 1-completely disagree to 5 – completely agree.

4. Results and Discussion

The data collection instrument used a questionnaire which was administrated into a sample of 393 manufacturers who are classified in terms of business size, capital ownership, and location. Respondents are from Ho Chi Minh, Dong Nai, Binh Duong (Southern of Vietnam); Bac Ninh, Ha Tay, Thanh Hoa (Northern of Vietnam) and Binh Dinh, Gia Lai (Central, Highland of Vietnam). Datasets are cleaned after 276 samples which enough for the conditions of EFA and RA. Characteristics of sample includes Enterprise with foreign capital = 14.8%; Domestic enterprise = 85.2%; Enterprises with large capital = 8.6%, 62.7% SMEs and 28.7% super small; 81.3% enterprises form Southern, from central 10.6% and 9.1% from Northern.

4.1. Reliability Analysis

The distance factor (DIS) consists of five observation variables, which run the reliability test of this factor prior to the introduction of an EFA factor analysis. Testing DIS for Cronbach's alpha = 0.445 is less than 0.5 and all 5 observed variables including DIS_1, DIS_2, DIS_3, DIS_4, DIS_5 are also less than 0.5. Using the method of trying gradually to diminish the observation variables in the DIS factor, the result is still less than 0.5. This proves that the DIS factor is not reliable because in practice it shows the gap does not significantly affect the co-operation among the actors in the flat world today. Enterprises are interested in efficient collaboration rather than geographical proximity. Similarity in organizational culture and scale of activity but not effective so this study eliminates the DIS factor and 2 observation variables TRU_1, TRU_2 are not accepted as well. Thus, the reliability of analysis results for 8 scales (7 factors influence one collaboration on the furniture supply chain in Vietnam) are achieved from acceptable level or good level. This demonstrates the scale of measurement concepts in order to achieve reliability studies, and the data collected through this achieve scale internal reliability for the next in-depth analysis.

Table 1: Cronbath's Alpha Result

Variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's alpha if Item Deleted
TRUST (TRU), alpha = 0.805				
TRU_1: Trust of enterprise basing on financial ability	24.34	34.000	0.470	0.809
TRU_2: Trust of enterprise basing on size	24.57	34.712	0.489	0.808
TRU_3: Trust of enterprise basing on commitments' implementation	23.05	38.220	0.692	0.771
TRU_4: Trust of enterprise basing on brand	23.23	37.679	0.655	0.778
TRU_5: Trust of enterprise basing on partners' shared information	23.26	37.915	0.588	0.787
TRU_6: Trust of enterprise basing on ability to flexibly respond to changing needs	23.20	37.878	0.596	0.786
TRU_7: The more trust enterprise put on partner, the greater possibility of cooperation	23.12	37.500	0.601	0.784
POWER (POW), alpha= 0.868				
POW_1: The larger the size of the enterprise, the higher power of the business	13.17	12.733	0.847	0.777
POW_2: Enterprise that has large influence in the industry has more power than partners	13.30	14.832	0.655	0.856
POW_3: The higher the position of the enterprise, the more powerful the business is	13.17	14.668	0.670	0.850
POW_4: The more power an enterprise has, the greater its ability to cooperate with a partner	12.89	13.087	0.716	0.834

MATURITY (MAT), alpha= 0.860				
MAT_1: Enterprise has ability to predict the needs of partners	13.12	12.361	0.634	0.853
MAT_2: Enterprise has ability to control their partners	13.13	12.647	0.686	0.829
MAT_3: Contracts are only formalistic between enterprise and partners due to the degree of familiarity	13.08	13.319	0.705	0.825
MAT_4: The more familiar business transaction/partner is, the higher the possibility of cooperation	13.07	10.824	0.818	0.771
FREQUENCY (FRE), alpha= 0.874				
FRE_1: Enterprise and partners basically have many similarities in their business strategies	13.48	13.659	0.747	0.832
FRE_2: Enterprise and partner have an interdependent relationship of inputs - outputs in the industry	13.46	15.541	0.681	0.858
FRE_3: Enterprise maintain regular transactions with partners whenever demand arises	13.30	14.407	0.682	0.859
FRE_4: The more frequent the transaction, the higher the possibility of cooperation	13.31	13.731	0.819	0.803
DISTANCE (DIS), alpha = 0.445				
DIS_1: Enterprise often buy raw materials from local suppliers	17.36	12.013	0.354	0.288
DIS_2: Enterprise often buy raw materials from foreign suppliers	16.79	10.860	0.367	0.267
DIS_3: Enterprise focus on distribution of the domestic market	16.28	13.332	0.423	0.270
DIS_4: Enterprise focus on distribution foreign market (Export oriented)	16.05	12.428	0.409	0.257
DIS_5: Geographic distance hinders the cooperation of enterprise with partner	18.15	21.731	-0.345	0.658
CULTURE (CUL), alpha = 0.844				
CUL_1: Enterprise has the capacity and conditions to cooperate with partner	13.01	10.153	0.720	0.788
CUL_2: Enterprise is willing to cooperate with partners to offer customers effective solutions	12.86	10.567	0.589	0.840
CUL_3: Enterprise is aware of the benefits of cooperating with partners	12.92	9.173	0.695	0.798
CUL_4: The higher cooperative culture of the enterprise, the higher the possibility of cooperation	12.78	9.772	0.728	0.782
STRATEGY (STR), alpha= 0,853				
STR_1: Companies are ready to make acquisitions or mergers for efficiency purposes	12.01	13.065	0.677	0.821
STR_2: Businesses always aim to rationalize capital and production	12.16	13.955	0.685	0.817
STR_3: Businesses actively plan to introduce new products to the market	11.99	13.423	0.652	0.832
STR_4: The more suitable the strategy, the higher possibility of cooperation is	12.11	13.254	0.772	0.782
POLICY (POL), alpha= 0.896				
POL_1: International trade policy of the government on tariffs affects cooperation ability of enterprise with partners	11.79	15.401	0.689	0.802
POL_2: International trade policy of the government on non-tariffs affects cooperation ability of enterprise with partners	11.61	17.508	0.679	0.812
POL_3: The government regulations such as FSC, CoC, Lacey, Flegt affect the cooperation ability of enterprise with partners.	11.23	14.389	0.792	0.755
POL_4: The more favorable the government regulations and policies of partners are, the higher the possibility of cooperation and vice versa	11.31	16.060	0.596	0.845
COLLABORATION (COL), alpha = 0.883				
COL_1: Supply chain collaboration helps businesses increase competitiveness	7.96	3.991	0.711	0.870
COL_2: Supply chain collaboration helps businesses to be active in business	7.83	3.485	0.823	0.766
COL_3: Supply chain collaboration helps businesses improve business efficiency	7.88	3.909	0.736	0.838

4.2. Explore Factor Analysis and Regression Analysis

The Cronbach's alpha was conducted to assess the reliability of each scale. Alpha values contains over 0.8 for one dependent variable and the other seven independent variables without Distance. This indicates all scales can be considered reliable (Creswell, 2002). For each of the item scales, factor analysis was used to reduce the total number of items to manageable factor. Principal components analysis is used to extract factors with eigenvalue greater than 1. Varimax rotation is used to facilitate interpretation of the factor matrix. Sampling adequacy measurement tests are also examined via the KMO statistics to validate the use of factor analysis. The composition of independent variable scales, with sig. = 0.000 and KMO = 0.769, the variables converge to 7 differentiating factors such as the original hypothesis and the total deviation of 60.89% for the deduction of 60.89%. Measurement variables with weighting factors of variables are greater than 0.5. Similar to dependent variables, gives the result KMO = 0.717, the variables converge to an original factor with a total deviation of 68.21% for the meaning that extracted 68.21% of variables and weights Variable factor variables are greater than 0.5. From the above results, the weighting factors of variables and the total deviation satisfy the theoretical conditions so it can be concluded that the appropriate EFA model, the variables will continue to be included in the regression analysis.

Table 2: Results of Exploratory Factor Analysis with six-factor model

Concept	Variables	Observers	Cronbach's alpha	Cumulative Variance (%)
Collaboration (COL)	Trust (TRU)	5	0.805	75.605
	Power (POW)	4	0.868	
	Frequency (FRE)	4	0.874	
	Maturity (MAT)	4	0.860	
	Policy (POL)	4	0.896	
	Culture (CUL)	4	0.844	
	Strategy (STR)	4	0.853	
Furniture Supply Chain Collaboration (COL)		3	0.883	78.413

Using Pearson's correlation coefficient to analyze the correlation between independent variables, including Power, Frequency, Maturity, Culture, Strategy, and Policy. The results show the correlation between independent variables and dependent variables were positive, except for Policy. Next, conducting a regression analysis, results of the model confirmity assessment are as follows:

Table 3: Model Summary[b]

Model	R	R Square	Adjsted R Square	Std. Error of the Estimate	Durbin-Watson
1	.810[a]	.653	.641	.696	1.684

a. Independent Variable: POW, TRU, MAT, FRE, POL, CUL, STR
b. Dependent Variable: COL

Table 4: ANOVA[a]

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.222	8	27.370	153.759	.000[b]
	Residual	107.338	267	.488		
	Total	149.560	276			

a. Independent Variable: POW, TRU, MAT, FRE, POL, CUL, STR
b. Dependent Variable: COL

Using F test for the fit of the model in variance analysis with Sig. = 0.000 (< 0.05), thus rejecting the hypothesis that all regression coefficients are zero (0) in which it shows the overall suitability of the regression model. In addition, 1 < Durbin-Watson (= 1.684) < 3 showed no first-order self-correlation and the VIF coefficients were less than 2 indicating that the independent variables are not closely related.

Table 5: Result of Regression Analysis by Entering Method

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
Constant	1.018E-14	0.032		0,000	1.000		
TRU	0.305	0.042	0.415	9.508	0.002	0.216	1.463
FRE	0.241	0.029	0.138	7.525	0.003	0.243	1.291
POW	0.540	0.028	0.590	16.855	0.000	0.427	1.905
MAT	0.483	0.024	0.403	15.075	0.001	0.186	1.726
CUL	0.037	0.032	0.165	1.145	0.253	0.293	4.539
STR	0.144	0.048	0.234	4.488	0.008	0.175	1.274

a. Dependent Variable: COL

The results showed that all six independent factors have positive impact on the statistical significance of Furniture supply chain collabolation (Sig. < 0.05) and collaboration to the level of impact from the strong to the weak as follows: Power (0.59), Trust (0.415), Maturity (0.403), Strategy (0.234), Culture (0.165), and Frequency (0.138). In addition, if hypotheses are determined at the significant level of 5%, six independent variables will reach statistical significance in this model. Consequently, 6 independent variables have

statistical significance for this regression model. Therefore, we can conclude that 6 above variables have a strong relationship with the dependent variable. Basing on unstandardized Beta column, variables can be explained by the following linear equation:

$$COL = 1.018E\text{-}14 + 0.54\ POW + 0.483\ MAT \\ + 0.305\ TRU + 0.241\ FRE + 0.144\ STR \\ + 0.037\ CUL$$

5. Policy Implication

5.1. Policies Implication for Manufacturers

Empowering and the capacity of enterprises to consolidate power for the partners: Building up enterprises image to enhance the degree of trust in their dealings with partners: through the implementing measures, enterprises maintain and develop their capacity. If the enterprise always focuses on developing these above aspects, its capacity will have a high evaluation and through that, the enterprises are eligible to consolidate and increase its power to partners in order to attract the collaboration voluntarily. Thanks to power, manufacturer can have pressure the partners to be proactive in cooperation with enterprises within the chain. Vietnamese furniture industry efforts to affirm the brand value by applying advanced technology, improving production capability, and improving the quality of the product, diversifying the design. Thus, manufacturer will be active in sourcing, processing and selling as well.

The manufacturers must be maintained regularly trading activities with partners in order to enhance the level of maturity, and making convenience to promoting collaborating relationship: through the relation between the enterprises and partners in the industry reaching the maturity in the relationship means that enterprises have the ability to predict supply and demand and therefore firm could control effectively partners through aspects such as the habits, customs transactions regarding the method of payment, terms of delivery. Therefore, it would help the relations of enterprises getting economic efficiency.

The manufacturers must proactively enhance the frequency of transactions among the actors in the supply chain: Enhancing the frequency means to increase the number of transactions between enterprise and partner in the chain. Once the transaction takes place regularly, it is able to reinforce the level of cooperation between enterprise and partner.

The manufacturers have to plan an appropriate cooperation strategy in order to cope with new business conditions: first of all, enterprises in the industry have to identify their goals when participating in the transactions. To determine this goal, enterprises should analyze the benefits which they aim to achieve. Merging and requisitioning enterprises can take place with difference scale and forms based on the structure of the enterprises, purpose, and the relationship among the parties.

5.2. Policies Implication for Government and Other Authorities

Recommendations for the Government: Authorities need to enact legal soon for the enterprises to be convenient in business activities.

Recommendations for furniture industry association: The Association must be a real bridge for the enterprises in the industry to talk, share information as well as give feedback about obstacles, hardship of the enterprise during business process. The Association will certainly be the playground of any enterprise in the industry whatever their size is. With that, the Association will truly become a forum for enterprises to share information with each other as well as to share and bind information with each other. Besides, it creates the base for the enterprises to increase the cooperation to grow together. At the same time, the Association will also really become a bridge of the enterprises reflecting their distress to the Government Administration in time as the implementation.

6. Conclusion and Research Limitations

Overall, Vietnamese furniture industry has grown in size, export turnover and quality as well. However, this industry has been shown many weaknesses without improving causing a lot of challenges for the development of the industry in the coming time. It is the spontaneous manufacturing and distribution. Due to objective and subjective reasons, this industry reveals there has weak connection between the actors in the supply chain and this matter hardly matches sustainable development. Therefore, the effective relation of factors involved in the production process is an indispensable trend to enhance the vitality in the context of international economic integration today. It is a big challenge for this industry to compete and meet the strict requirements of the global market.

This research has mainly used qualitative research methodology to simulate the model of the Vietnam furniture industry of the supply chain, thoroughly research on supply chain collaboration which is through a cooperative relationship among 3 major actors as above mentioned

while a supply chain has lots of actors in multi relationship. Besides, these research samples are mainly manufacturing enterprises instead of supplying enterprises and distributors. So the multidimensional picture of cooperative relationships among actors in the furniture supply chain has still not really covered yet.

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