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Relationship quality in fish value chains: buyer - supplier management in the Pangasius industry, Vietnam

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Abstract

This study deals with the importance of investment and trust in designing an export-oriented fish value chain quality management. It analyses relationship quality in the Pangasius industry in order to improve product quality through closer supply chain coordination. According to findings from several research streams, we argue that relationship quality must be conceptualized as a construct of trust and investment. Consequently, we derived a conceptual model that commitment and trust to relationship quality. The analysis discusses assumptions and concepts of Porter's value chain, transaction cost economics, and theory of institutions.

To verify the applicability of the model, we conducted a survey in the Pangasius industry of Vietnam. The data obtained from a sample of 120 fish farmers in the Mekong Delta, Vietnam. Each interview made was taped and properly transcribed. We collected relevant information by interviewing the managers of four processing/export firms. In addition, we consulted secondary data by making use of documentary information, archival records from relevant organizations, library books and Internet facilities. Hence, using different sources of evidence we were able to triangulate our findings on the main issues under study.

Keywords: relationship quality, trust, transaction specific investments, value chain

1. Introduction

In recent years many businesses have recognized the importance of commitment and trust in improving the performance of exchanging parties (Boersma, *et al.* 2003; Nooteboom, 2002; Sako and Helper, 1998; Forsgren et al*.* 1995; Morgan and Hunt, 1994; Easton and Araujo, 1994; Williamson, 1993; Hakansson and Johanson, 1992). As a result, a great deal of attention has been paid by both economic and sociological scholars to develop concepts relevant for studying investment and trust (Williamson, 1985; Hakansson and Snehota, 1995). The economic and sociological approaches differ in their theoretical assumptions and concepts, and several efforts have been made to bridge the gap between these two perspectives, e.g. views of transaction cost economics and networking theory on the discussions of investment and trust, see Johansson and Mattson (1987) and Nooteboom (1993). Their findings show that while transaction cost approach focuses on opportunistic behavior of exchanging parties and the risk associates with it, networking theory focuses on its correlate trust. Networking theory also argues that trust minimizes transaction costs and it is a viable governance structure in a dynamic network environment (Hakansson and Johanson, 1993). Transaction cost theory explains investment in the form of credible commitment or reputation of the firm, and its discussion is limited to relationship specific investments. Networking theory notes that investment is the outcome of mutual adaptation processes and provides a broader way of measuring investments made in a relationship.

In this paper, we want to verify to what extent networking theory can integrate the main concepts of transaction cost theory on investment and trust. Our approach seems in line with Williamson's view (1992), that transaction cost economics needs to be refined and extended. It is also argued that such an integrated networking theory provides a better explanation to problems of the seafood and other industries (Anderson, *et al.* 1994; Dryer, 1996; Jarillo, 1988; Gulati, 1995; Sven and Gronhaug, 1995; Mitullah, 1999; McCormick, 1999)[1]. Based on this integrated networking theory, a comprehensive conceptual framework is developed.

In order to verify the applicability of the model derived, we made a study on the Vietnam fish industry by specifically analysing the importance of investment and trust between fish suppliers and export firms, which want to meet the demand of EU fish importers.

2. Theoretical approach

This section discusses concepts of transaction cost theory in the light of networking theory. The basic concept of transaction cost theory concerns efficiency. We observed several deficiencies of this theory in the problem under study. However, the concept of efficiency can be integrated in the networking theory. Networking theory makes a distinction between 'transfer activities', which are related to efficiency, and 'transformation activities', which are related to effectiveness (Hakansson and Johanson, 1992). However, the networking perspective indicates that instead of considering minimizing the cost of one transaction alone, the efficiency criterion should be based on a set of transactions between two parties or should be aimed at maximizing the joint transaction value of a given transaction among several value system actors (Zajac and Olsen, 1993). In this case, the unit of analysis concerns the relationship rather than a discrete transaction, which provides a strong basis for understanding the coordination of industrial activities in a

broader context. Also, the network approach considers the transaction costs as only one aspect of the total network relationships. To achieve an overall assessment of the network relationship, these costs must be compared with the total advantages of the cooperation.

Transaction cost theory claims that the choice of governance structure is determined by attributes of transaction and assumptions on human behaviour (Williamson, 1985). The discussions on transaction cost theory also show that a high level of asset specificity leads to high sunk costs. It further implies that firms are likely to stick to a particular operating structure and therefore will not be able to respond to strategic changes in market expectations or competitive conditions. Due to the sunk costs, asset specificity can also be viewed as a variable that may have a negative influence on the development of long-term business relations. From the networking perspective, the concept of asset specificity is very closely related to the discussion of heterogeneity, mutual adaptation, power and market assets (Hagg and Johanson, 1982; Johanson and Mattsson, 1987). According to the networking approach, investment is realized as a result of a mutual adaptation process and is positively related to the development of closer relationships. Firms in the network are engaged in exchange processes, and every transaction made is considered to be an investment. This investment concept is integrated in our conceptual model as one of the key features of relationships.

Frequent exchanges between partners may be the result of a gradual development of trust that helps partners to lower transaction costs by safeguarding against opportunism. The implications of the effect of trust on governance structures are generally ignored in transaction cost theory. This limitation of social embeddedness of economic actions and trust is best dealt with in networking theory (Granovetter, 1985, Uzzi 1997, Grabher 1993). From a networking perspective, opportunism is not considered as a basic characteristic of the actor. Instead trust is an important concept in the networking approach. We share the view that informal networks reduce transaction costs because of the high level of trust in the relationships. A high level of trust enables firms to reduce negotiation costs, it helps to reduce transactional uncertainty and it creates opportunities for the exchange of goods and services. Hence, our conceptual framework relies heavily on instruments that build trust. The detailed discussion on this issue is presented in later sections.

3. The conceptual framework

Based on the theoretical discussions, we derived two strongly inter-related elements, *investment* and *trust*, crucial for analysing network processes.

Investment

If industry actors are to realize their objectives – such as getting access to resources or markets – each actor is expected to invest in relationships. The concept of investment in marketing and networking theories deserves special attention. Empirical studies, see e.g. Easton and Araujo (1994), show that Williamson's concept was a very narrow one, essentially concerning the bare minimum investment that a partner needs to make to sustain the relationship at all. They proposed a hierarchy of investments within buyer-seller relationships. Also, in Hagg and Johanson (1982) and Forsgren *et al.* (1995) three types of

market investments are analysed: general, market-specific, and relationship-specific investments. General market investment concerns overall investments made in a business. Market-specific investments refer to investments made for a specific market, product or geographical region. Finally, relationship-specific investments are investments of which the value becomes zero if the relationship comes to an end.

In our conceptual model, we considered two types of investments, namely market-specific investments and relationship-specific investments, and we adopted same arguments from Hagg and Johanson (1982) in analysing market investments. To develop business relations, firms should make market-specific investments, which are flexible by nature and do not necessarily create sunk costs. For instance, flexibility is found to be one of the most important characteristics of successful firms in the seafood industry [2]. This is because the industry mainly relies on access to marine resources, predominantly fish, and the monthly catch fluctuates. At the same time, the demand for fish also changes from time to time. In such a situation, firms are expected to be flexible enough to re-adjust to such changes by adapting their organizations in terms of size, form of production, or technology. This implies that firms do not necessarily have to invest in assets that create sunk costs. It is also possible for industry actors to invest in relationship-specific investments. This specially holds true when exporters prefer to get a regular supply of fish; to make this possible they develop business ties with individual fish suppliers by providing credit or other services.

Trust

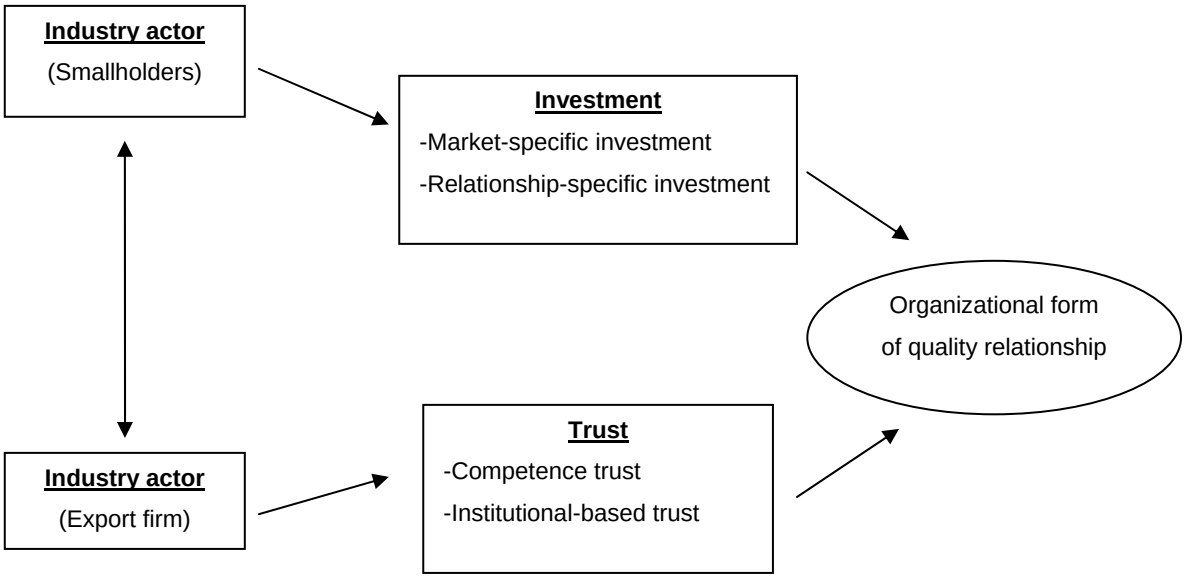
The literature clearly shows that trust creates stability and guarantees continuity in the relationships between industry actors and it is the glue that holds the relationship together. Several studies consider trust as a central feature of business relationships and propose different ways of measuring trust. For instance, Sako (1992) identified three types of trust, namely, contractual, competence and goodwill trust. Similarly, Shapiro *et al.* (1992) discussed deterrence-based, knowledge-based, and identification-based trust. Mishra (1996) focuses on competence, reliability and openness in defining trust. According to Doney and Cannon (1997), the development of trust involves five processes: a calculative, capability, predictive, intentionality and transference processes[3]. Zucker (1986) defined trust as a set of expectations shared by all those involved in an exchange and identified three dimensions of trust, namely process-based, characteristics-based and institutional-based trust. Such classification integrates most of the instruments of measuring trust as explained by other researchers and allows us to examine the concept of trust in a broader perspective. Hence, in our study, we adopted Zucker's (1986) definition and classifications of trust, with the exception that we redefined process-based trust as competence trust.

Competence trust is based on concrete experience concerning certain behavioural patterns. It results from the dynamics of past and future exchange processes and it is influenced by the reputation of industry actors. Each party gathers information on past transactions with which they can evaluate the other partner's trustworthiness. As a means of evaluation, they consider both technical and managerial competences in living up to their promises. Competence trust combines the explanations provided by Sako (1992) on the same issue, and the discussions of Shapiro *et al.* (1992) on knowledge-based trust. It

is also consistent with the discussions of Mishra (1996), and Doney and Cannon (1997). *Characteristic-based trust* refers to the influence of social norms, religion, personal bonds or friendship in the relationships between industry actors. This is similar to the discussions of Sako (1992) and Shapiro *et al.* (1992) on goodwill trust and identification-based trust, respectively. According to Williamson (2000), characteristic-based trust represents a level 1 form of institutional arrangement, which is characterized by informal institutions, customs and norms.

Institutional-based trust concerns formal social structures, which are usually backed by sanctions based on the law. These include property rights, business contracts, formation of fish cooperative and fishery legislations. This type of trust incorporates the discussion by Sako (1992) on contractual trust, and the implications of deterrence-based trust as stated by Shapiro et al. (1992). Similarly, according to Williamson (2000), institutional-based trust represents level 2 and level 3 forms of institutional arrangements, which include the rules of the game and actual play of the game itself.

Figure 1: Conceptual framework of the importance of investment and trust in developing business relations between fish farmers and export firms



4. Research design

A research design links the data to be collected to the research question and it provides useful guidelines for analyzing data (Yin 1994, Miles and Huberman 1992). There is no single research design and which method (s) to follow depends on the research problem and its purpose (Ghauri *et al.* 1995). Our research design is aimed at selecting a research method that is relevant to finding an answer to our research question: *What is the role of investment and trust in organizing an export-oriented fish supply chain in the Vietnam fish industry?* We make use of case studies. A case study design depends on the unit of analysis. The unit of analysis may be an individual, a firm, a decision or a program (Yin 1994). In choosing the case, the most important criterion is that we learn as much as possible from the case

(Eisenardt 1995, Stake 1995). In our research, the unit of analysis refers to the business relationship that a firm has with other organizations. Accordingly, we developed a case study protocol that is in line with the model and each variable was properly classified and made operational. Each actor is asked questions specifically related to investment and trust. In order to verify the applicability of the model derived, we studied business relations between fish suppliers and export firms in Vietnam.

There are different ways of collecting data. The case study and survey methods are the two most frequently used research methods. In a survey method, samples are usually large, and the focus is not on an individual in a sample but rather on the general profiles or statistics derived from individual cases. Questionnaires, personal interviews and telephone surveys are some of the methods used in the survey method. According to Yin (1994), a case study is defined as “an empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident”. In a case study, a single subject or phenomenon which is bounded by time and activity (event, process) is explored. The case study’s strength is its ability to deal with a full variety of evidence like documents, interviews and observations.

In order to understand the view of fish suppliers, we carried out both case study interviews and survey research. A case study and survey methods may complement each other. In our research with fish suppliers, we found that it is useful to start with a case study approach and then based use a survey method. By using both a case study and survey research we managed to gather all relevant information, which allows us to present a compete case study on fish suppliers. In total, there are 11 villages in An Giang and after consultation with key fishery experts we selected 3 fish villages for a case study. Accordingly, we carried out a case study interview with twenty-six farmers. The respondents were asked about their view on the importance of investment and trust in developing business relations between themselves and export firms. Each interview made was taped and properly transcribed. To complement the case study results, we also administered a survey, through semi-structured questionnaires, with 63 fishermen selected from 26 fishing villages. In the survey, the variables were classified and the respondents were asked to rate the importance of each variable, through a five-point Likert scale: (1) not important at all, (2) not important, (3) neutral, (4) important, and (5) very important. We presented the frequency, mean and standard deviation of each response using an SPSS statistical package. The results of both case study interviews and surveys were linked to each variable under investigation and were compared with the views of partner firms. In order to verify the views of both respondents, we also referred to financial records and reports prepared by respondents and other organizations. Hence, using different sources of evidence we were able to triangulate our findings on the main issues under study.

5. Analysis

An analysis is made on the importance of making investment in the relationship between fishermen and export firms and the role of trust in maintaining the relationship. The importance of flexible supply contract as an organisational form of relationship is discussed as well.

Investment Made in Relationships

In order to gain access to credit and attractive fish prices from the export firm, fishermen have to show their willingness to make market-specific and relationship-specific investments. Regarding market-specific investment, we asked the respondents to rate two variables: the "willingness to invest in advanced quality assurance" and the "willingness to use new technology'. According to the survey, 92% of the respondents said that a "willingness to invest in advanced quality assurance" was (very) important. 62% of the respondents rated the "willingness to use new technology" as (very) important. In particular, they said they were prepared to invest in an icebox and fish preservation methods (Table 1). About 24 per cent of the respondents answered that they did not need to invest in modern quality assurance for they already had these facilities.

Table 1: The importance of investment in the future relationship between fish farmers (N=120) and processing/export firms

Importance of investment / Factors	Very important	Important	Neutral	Not important	Not important at all	Mean	Standard deviation
Market-specific investments							
Willingness to invest in advanced quality assurance	73.0	19.0	4.8	3.2	0.0	4.62	0.73
Willingness to use new technology	25.4	36.5	14.3	20.6	3.2	3.60	1.17
Relationship-specific investments							
Willingness to deliver fish after every crop to the same processing firms	46.00	39.7	11.1	3.2	0.0	4.29	0.79
Commitment to deliver quality fish	12.7	34.9	25.4	22.2	4.8	3.29	1.09
Readiness to deliver fish in large volume	44.4	39.7	7.9	1.6	6.3	4.14	1.07
Adaptation to production schedules	15.9	30.2	27.0	19.0	7.9	3.27	1.18

Source: Survey data, 2008.

Fish farmers are also expected to make commitments to the export firm in the field of relationship-specific investments. The respondents were shown four variables and they were asked to rate each variable in terms of its importance. These variables were "willingness to deliver fish after every crop to the same processing firms", "commitment to deliver quality fish", "readiness to deliver fish in large volumes", and "adaptation to production schedules". According to the survey results, the respondents rated "willingness to deliver fish after every crop to the same processing firms" and "commitment to deliver fish in large volumes" as (very) important made up 86 per cent and 84 per cent, respectively. The respondents who rated "commitment to deliver quality fish" and "adaptation to production schedules" as (very) important made up 48 per cent and 46 per cent, respectively (Table 1). This finding shows that fish farmers know the importance of a regular supply of large volumes of fish in order to develop relationships with export

firms. However, the respondents find it less important for the relationship to deliver quality fish. According to the respondents, it requires more of an effort and more costs to culture quality fish – and above all, fish farmers cannot predict what price of fish they sell, for this is mainly a matter of luck. This prevents fish farmers from delivering quality fish within a specific time schedule.

The Role of Trust in Maintaining the Relationship

The amount of investments to be made by both fish farmers and processing/export firms may change in time and will be influenced by the level of trust developed between the parties. According to our conceptual framework, two forms of trust explain the relationship between fish farmers and processing/export firms, namely competence trust, and institutional-based trust.

Competence trust

Competence trust concerns the managerial and technical ability of a fish farmer or an export firm in dealing with its promises and agreements. From four variables the respondents were asked to select the ones that best represent the competence of export firms in the future. The variables include attractive prices, the promise of being a regular buyer, the provision of credit, and the provision of market information. The survey results reveal that those who rated 'credit provision' and 'attractive prices' as (very) important make up 84 per cent and 76 per cent, respectively. On the other hand, 52 per cent and 19 per cent rated the variables 'regular buyer' and 'provision of market information' as (very) important, respectively (Table 2). This confirms that in order to win the confidence of fish farmers and to develop trust, processing/export firms should be able to provide credit and set an attractive fish price. This may increase the number of fish farmers who regularly supply fish to the export firms.

Table 2: The importance of trust in the future relationship between fish farmers (N=120) and processing/export firms

Importance of trust / Factors	Very important	Important	Neutral	Not important	Not important at all	Mean	Standard deviation
Competence-based trust							
Attractive price	46.00	30.2	11.1	12.7	0.0	4.10	1.04
Promising to be a regular buyer	20.6	31.7	42.9	4.8	0.0	3.68	0.86
Getting access credit	44.4	39.7	12.7	1.6	1.6	4.24	0.86
Providing market information	4.8	14.3	34.9	46.0	0.0	2.78	0.87
Institutional-based trust							
Written contracts	71.4	11.1	7.9	7.9	1.6	4.43	1.04
Unwritten contracts	11.1	19.0	27.0	25.4	17.5	2.81	1.25

Source: Survey data, 2008.

Export firms stressed that the competence of a fish farmer is best evaluated by his reputation as a regular supplier and by his punctuality in meeting deadlines. However, they complained that fish farmers failed to offer the desired competence because they could not regularly supply, and also they did not adhere to quality requirements.

Institutional-based trust

Institutional-based trust is associated with property rights, laws and mechanisms of enforcing laws that influence the relationship of fish farmer with processing/export firms. So far, contractual agreements between fish farmers and export firms were almost non-existent, and the few agreements that did exist consisted of oral promises. The respondents were asked to evaluate the importance of written and non-written contracts in the future. 83 per cent rated “written contracts” and 30 per cent “non-written contracts” as (very) important (Table 2). The managers of export firms think that written contracts are better than unwritten ones because they can be used as a reference document in case one of the parties refuses to act according to the agreement.

Fish farmers were shown five variables of importance in the design of a flexible supply contract and they were asked to rate each variable in terms of its importance. The variables included realizing a reasonable profit margin, fixing the duration of the contract, quality specifications, quantity specifications, and just-in-time delivery. The results are shown in Table 3. They confirm that fish farmers are more interested in profitable contractual agreement, which allow them to supply fish in large volumes to the export firms.

Table 3: Flexible supply contract

Importance of trust / Factors	Very important	Important	Neutral	Not important	Not important at all	Mean	Standard deviation
- Importance of designing flexible supply contract							
Gaining reasonable profit margin	77.8	17.5	4.8	0.0	0.0	4.73	0.54
Fix a specific contract in advance	17.5	44.4	19.0	11.1	7.9	3.52	1.15
Fish quality specification	9.5	25.4	36.5	25.4	3.2	3.13	1.01
Quantity specification	36.5	39.7	9.5	7.9	6.3	3.92	1.17
Just-in-time delivery	14.3	44.4	27.0	7.9	6.3	3.52	1.04

Source: Survey data, 2008.

The export firms pointed out that apart from gaining a reasonable profit margin, the contract should also stress just-in-time delivery as well as quality specification. This also shows the preference for the delivery of quality fish over quantity, because the export firms prefer to buy specific species that have high demand on the world market. The managers considered demand conditions, cost of fishing supplies, fixing lifetime of the contract, and exchange of market information as relatively less important. To

conclude, the main finding is that both fish suppliers and exporters are willing to enter into a flexible supply contract that is profitable for them.

6. Discussion

The case study and survey results indicate a number of findings. The findings also show the importance of making investments to develop business relations between fish farmers and processing/export firms. The responding fish farmers pointed out their willingness to invest in advanced quality assurance, to use new technology, and to deliver in large volumes to the one and the same export firm.

The size of the investment made by fish farmers and export firms through time is also influenced by the level of trust developed between the parties. The case study and survey results confirm that providing credit and setting attractive fish prices are not only the reasons for fish farmers to develop a relationship with an exporter, they are also major criteria to evaluate the competence of an exporter. According to the export firms, the competence of a fish farmer is best evaluated by his reputation as a regular supplier and his accuracy in meeting deadlines. It is also found that both fish farmers and exporters are willing to use a written flexible supply contract that is profitable to both of them. Such a contract can be realized by linking the main activities performed by fish farmers and export firms and by developing commercial ties related to pricing decisions, credit ties that are concerned with sanctioning loans, technical ties related to the adaptation of production processes.

7. Conclusions

This paper attempts to bridge differences between the transaction cost theory and networking theory by integrating the assumptions and limitations of transaction cost theory into the discussion of networking theory. The theoretical discussions and the field research confirm the usefulness of networking theory in dealing with supply chain problems. In order to verify the applicability of the framework derived, we considered the features of investment and trust in developing business relations between fish farmers and processing/export firms in a new business environment: the Vietnam fish industry. We wanted to contribute to the existing discussions on networking theory by exploring to which extent such concepts could be applied in totally different setting just as the Vietnam fish industry. The framework considers market-specific investment, relationship-specific investment, competence trust, and institutional-based trust. The case study and survey results demonstrated that the variables included in the framework were instrumental in analyzing supply chain problems in the Vietnam fish industry. Industry actors acknowledged the importance of market-specific and relationship-specific investments in order to realize each other's objectives. Through time the relationship between both actors is influenced by the level of trust and extent of resource control exercised by exchanging parties. Managerial and technical competences of partners, compliance with formal and informal mechanisms of enforcing laws, and the existence of balanced bargaining power are also important factors for maintaining the relationship. The same concepts can also be applied in dealing with problems of the fish industry of other developing economies.

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