

NETWORKING MODEL FOR FISH SUPPLY CHAIN

Management

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ABSTRACT

This paper is devoted to review the main theoretical and empirical literature related to the organisation of fish supply chain. The literature review presents a description of the value chain model, resource dependency theory, clustering theory, transaction cost theory, networking theory and theory of. It is believed that these theories provide a useful basis for understanding the economic and sociological perspectives of networking in the supply chain.

KEYWORDS

Network, value chain, transaction costs, institutions

1. INTRODUCTION

No firm is in complete control of all the resources necessary for its operation. The scarcity of resources impels organizations to develop linkages with the external environment. Many businesses have realized that they can achieve a competitive advantage and improve performance by developing cooperative relations with buyers, suppliers, competitors and other firms (Helper and Sako 1995; Porter 1985). This point of adequate business relationships is also crucial in the investigation of the role of the smallholders in (fish) export chains. The following schools of thought are very relevant for our study: Global Value Chains (Gereffi et al. 2005) and Institutional Economics (North, 1990; Williamson, 2000) and Transaction Cost Economics (TCE) (Coase, 1937; Williamson, 1991).

Linkages exist not only within a firm's value chain but also between a firm's value chains, the value chains of suppliers and channels. This assumption holds true in the case of fishing industry where there are fishermen/traulers, processing firms, wholesalers and retailers. Fish farmers supply fish that a processing firm employs in its value chain. The procurement and inbound logistics activities of the processing firm interact with a fisherman's order entry system. The type and quality of fish supplied as well as its other contact points with a processing firm's value chain can significantly affect a firm's cost and differentiation.

The linkages between supplier's value chains and a firm's value chain provide opportunities for the firm to enhance its competitive advantage. It is often possible to benefit both the firm and suppliers by influencing the configuration of suppliers' value chains to jointly optimise the performance of activities, or by improving coordination between a firm's and supplier's chains. Supplier linkages means that the relationship with suppliers is not a zero sum game in which one gains only at the expense of the other, but a relationship in which both can gain. One without the other results in missed opportunities.

Networks are similar to supplier linkages. Networking has value chains through which a firm's product passes. The networks mark up over a firm's selling price often represents a large proportion of the selling price to the end user. Networks perform such activities as sales, advertising, and display that they may substitute for or complement the firm's activities.

2. LITERATURE REVIEW

2.1 Nature of Porter's value chain model:

The basic assumption of Porter (1985) is that a firm's performance depend on the industry attractiveness and its ability in positioning itself in the industry. The industry attractiveness is shaped by five competitive forces in the industry namely: rivalry among existing competitors, threat of new entrants, bargaining power of suppliers, bargaining power of buyers, and threat of substitutes. These forces influence the prices, costs, products, distribution, marketing, operations, and investment made by the firms. In order to deal with the five competitive forces, three generic strategies (overall cost leadership, differentiation and focus) are developed. For instance, a cost advantage may stem from superior production techniques, control of fishing inputs, tied production/ marketing arrangements, and

accessibility to cheaper sources of capital- e.g. from fish co-operatives. Differentiation can stem from grading which indicates the classification of fish into categories based on grade, species, or size established by formal or informal standards of quality. The firm's success depends on how well the company can defend itself against the competitive forces by selecting one or a combination of these strategies. Based on this notion, Porter (1980, 1985, 1990) introduced the concept of value chain to understand the sources of cost reduction and differentiation within a firm.

2.2 Theories of business relations

It is generally true that the scarcity of resources impels each firm to develop certain kind of linkages with buyers, suppliers, competitors and other firms. Over recent years many businesses have recognised that they can achieve a distinct competitive advantage from developing a cooperative relations with actors in the external environment. These relations can be understood from the strategic and economic motives. The strategic motives include linking products and skills, getting access to markets, investment capital, production capacity, labour force and knowledge. From an economic viewpoint, considerations such as lowering transaction costs, achieving economies of scale, and improving lead times could be the driving forces. However, economic exchange does also take place in social context and is embedded in a social network of relationships (Gulati 1998). Hence certain forms of exchange are more social, that is, more dependent on relationships, mutual interest, trust and reputation.

The theories of inter-firm relations are based on economic and sociological approaches. In our case, we will discuss both approaches to see their practical application. Accordingly, we will consider resource dependence theory, clustering theory, networking theory, transaction cost theory, and theory of institutional economics. The following discussions present the theoretical premises, practical applications and limitations of each theory.

2.3. Resource Dependency Theory

Resource Dependence Theory (RDT) argues that organisations engage in exchange because they require resources to survive and fulfil their specific functions. RDT sees the environment as a source of scarce resources and, if the resources are not brought under control, potential dependence on other organisations will result. Hence, the key to organisational survival is the ability to acquire and maintain resources. The more stable and predictable the supply of required resources is, the more likely organisations are to survive through times (Pfeffer and Salancik, 1978).

Given the underlying assumption that few organisations are internally self-sufficient with respect to their critical resources, two potential problems are created. First, a lack of self-sufficiency creates potential dependence on the parties from whom the focal resources are obtained (Emerson 1962). Second, it introduces uncertainty into a firm's decision making, to the extent that the resource flows are not subject to the firm's control, may not be predicted accurately.

For a relationship to truly exist, exchange partners must be dependent on each other. Emerson (1962) described dependence as the extent to

which (1) each party's reward or motivation is reliant up on the reward or motivation received by the other party and (2) the reward or motivation exceeds what would be available outside the relationship.

RDT is especially useful in predicting the dynamics of the relationships. It draws the attention to intra- and inter-organisational political dynamics, as it shows how interdependencies can change overtime. It centres its argument on conflict and power assuming that goal conflict is inherent in relationships and that exchange partner's act to increase their control of and decrease their dependence on other exchange partners.

2.4 Industrial district (clustering) model:

The concept of cluster can be defined in various ways. Schmitz (1995) defined a cluster as a group of producers belonging to the same sector and operating in close proximity to each other. On the other hand, Porter (1990) uses the term cluster to designate a group of firms engaged in similar or related activities with strong vertical linkages within one country, but not always geographically close. Whereas for Schmitz geographical proximity is a defining characteristic, for Porter it is not. However, Porter acknowledges that the relationships within an industry cluster benefit from firms' being located near one another (Porter 1990, Schmitz 1995). The clustering model considers the cluster as a unit of analysis.

The industrial district model draws on two streams of literature: the economic literature on external economies rooted in the work of Alfred Marshall (1920), and the social capital literature which argues that people are better off if they co-operate on common problems (Coleman 1990, Putnam 1993).

3. Implications for networking model

A basic assumption of network study is that economic exchange is embedded in a particular social structure (Powel 1990). Embeddedness refers to the fact that exchanges and discussion with a group typically have a history, and that this history results in the routinization and stabilisation of linkages among members. The theory stresses on the role of informal, socially embedded personal relationships in producing stable relations of trust, obligation, and custom among formally inter-dependent organisations. A typical example of networking theory can be the social structure of Indian society that is based on caste system. Therefore, certain forms of exchange are more social and are based on trust and reputation. The unit of analysis in networking is the relationship between various actors in a network and emphasis on the development of long-term co-operation and ties.

The networking model comprises three main variables: actors, activities and resources. These variables are related to each other in the overall structure of networks and through these circular relationships, a network of actors, a network of activities and a network of resources are related to each other. In this case, the firm can be perceived as structures of actors, resources and activities.

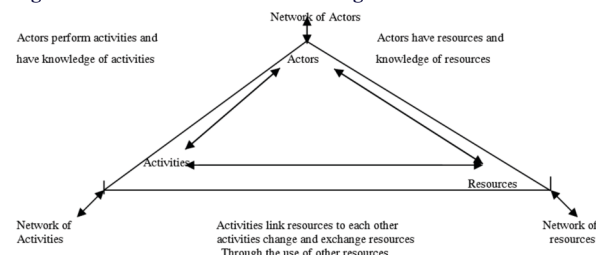
An activity occurs when one or several actors combine, develop, exchange, or create resources by utilizing other resources (Hakansson and Johanson 1992). Activities include the commercial, technical and administrative functions of an individual firm. Actors carry out two main types of activities transformation activities and transfer activities. Through transformation activities resources are change their physical form. These activities are always directly controlled by one actor. Transfer activities transfer direct control over a resource from one actor to another. These activities link transformation activities of different actors to each other and are never controlled by only one actor and are affected by the relationship between the actors involved.

The activity network is usually re-modified in the sense that new activities changes in old activities, which creates more efficiency in the flow of activities. Most of the activities are more or less repetitive in nature. The recurrent exchange and repeated interaction between the parties enable them to learn and adapt each other's needs. By adjusting to each other's needs, the parties show that they consider their mutual relations as stable and lasting, and not governed by short-term profit opportunities. This is similar to what Williamson terms "credible investments".

Resources are means used by actors when they perform activities (Hakansson and Johanson 1992). Resources include the tangible

resources of personnel, equipment, financial capacity in addition to the intangible resources of knowledge, organizational learning, market image, innovative capabilities and patent rights. The fact that resources are heterogeneous indicates that the possibilities for the use of a specific resource can never be fully or finally specified. Performing transformation activities requires transformation resources or performing transfer activities requires transfer resources. The use and value of a specific resource is dependent on how it is combined with other resources.

Figure 1: Basic structure of Networking model



Source: Adapted by author, 2018

Networking approach explains the coordination mechanisms among the various actors in the fish supply chain. It concerns with the development of long term business relations between fish suppliers and partner firms. It specifically addresses to the problem of linking the various activities and resources among the fish suppliers and partner firms.

The fact that its unit of analysis is a relationship, enable us to have a broader scope of analyzing the supply chain problems. It also considers trust as a major variable that hold a relationship together. In addition, the strong interdependence between the fishermen and processing firms and the repeated transactions that is made for a longer period of time provides a good opportunity for experiencing and evaluating each other's competence and reputation. This in turn leads to developing trustworthiness.

Most importantly, networking approach considers both efficiency and effectiveness criterion in organising industrial activities. It integrates the assumptions of resource dependence, clustering, transaction cost theories.

4. CONCLUSION

The literature review shows that theories of networking model and business relations are relevant in understanding the organization of a competitive fish industry. According to Porter, firms to be competitive may adopt a cost leadership strategy, a differentiation strategy or a combination of both. In order to identify the possibilities of cost reduction and differentiation, the model provides the basis for categorizing industry actors into different segments. Most importantly, it identifies and classifies the activities of each segment into primary and supporting activities. Identifying the activities performed by each firm is relevant in the sense that we can classify which activities are properly performed by the firm and which activities are really lacking.

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