Outsourcing logistics activities: a transaction cost economics perspective

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Abstract:

The research work presents the determinants to the decision of logistic outsourcing in light of the transaction cost economics theory (T.C.E.). The decision is first explained thanks to the direct influence of three features of transaction: assets specificity, uncertainty and frequency. The decision is then explained thanks to the indirect influence of three contextual variables: size, level of expertise and degree of structure of the logistic function.

Keywords:

Outsourcing, logistics, transaction cost theory, moderator.

INTRODUCTION

Since the early 1990s, the worldwide practices of outsourcing logistic activities have been increasing, resulting in an annual 10% increase (Sohail & Sohal, 2003). According to "Cap Gemini Ernst & Young" survey (2002), the rates of resorting to logistic suppliers have reached 94% in Europe, 78% in North America and 92% in Pacific Asia.

The enthusiasm of management for the phenomenon of logistic outsourcing has affected scientific literature (Razzaque & Sheng, 1998). Articles and books for the layman aimed at managers often describe ready-made methods (best practices) to achieve outsourcing operations. Yet this literature is not related to any rigorous theoretical frame (Lynch, 2001) and it remains mostly descriptive (Knemeyer, Corsi, & Murphy, 2003). Existing research works are often incomplete and only deal with a particular part of the logistic chain, such as physical distribution (Aertsen, 1993; Ballou, 1999), goods warehousing (Maltz, 1994), transport or tailored logistics (Guérin & Lambert, 2000), transport for exports (Bigras & Désaulniers, 1998; Stank & Maltz, 1996), integrated logistics (Rabinovitch, Windle, Dresner & Corsi, 1999) or supply chain (Amami, 2001). In these research works what is stressed is the study of the various configurations and relations resulting from a decision of logistic outsourcing rather than the factors of decision (Amami, 2001; Kannan & Tan, 2002; Menon, Macginnis, & Ackermann, 1998; Tage, 2000).

The transaction cost economics theory (T.C.E.), based on Coase's famous works (1937) and mostly developed by Williamson (1975, 1979, 1981a, 1981b, 1985a,b) is regarded as a dominating paradigm in the study of organisations by many authors (Brousseau, 1997; Coriat & Weinstein, 1995; David & Han, 2004; Gabrié & Jacquier, 1995; Gomez, 1996; Joffre, 1999; Koenig, 1999). This theory is also the most quoted approach by academic literature to explain the decision of outsourcing (Willcocks & Lacity, 1995). However, in spite of the high potential of the T.C.E. for the study of the decision of outsourcing in logistics, the theory has not been much exploited (Ngwenyama & Bryson, 1999), except in Bienstock and Mentzer's work (1999). Yet, the T.C.E. provides a suitable scientific support for the firm's major concern in a process of logistic outsourcing that is looking for minimized production and transaction costs. Although Bullen (2004) suggests that the decision of outsourcing can be efficiently dealt with thanks to a dozen of theoretical approaches (e.g., division of labor, co-ordination theory, transaction cost theory, core competence theory, unit of competitive advantage, power, agency theory,

competitive strategy, resource-based theory, partnership, resource-dependency theory, game theory), the paradigm of rational decision remains the main reference as economic motivations seem to have priority.Given these elements and the strategic importance of the decision of outsourcing (Hamdouch, 1996; Tage, 2000), it seems appropriate to analyse the key factors for this decision in the light of T.C.E. Due to the inherent characteristics of logistics which features of the transaction are worth remembering to explain the decision of outsourcing? What kind of direct relationship can there be between these features and the decision by a company to outsource or internalise its logistic activity? What's more the relationship between the features of transaction and the decision-making process can be much more complex than a mere direct relationship, as has already been described in other articles. Other contextual factors may then influence this relationship. Hence the question 'What are these factors and what kind of influence do they have on the relationship?', 'Does their influence reduce or reinforce the relationship between the features of transaction and the decision of logistic outsourcing?'

The present article investigates these questions using the T.C.E., the influence of the features of transaction over the decision of outsourcing the logistic activity. We thus focus our attention on the economic motivations of the decision of outsourcing with a rather macro perspective.

On the whole we argue that assets specificity, the uncertainty of transaction and the frequency of transaction make up appropriate factors to explain the decision of logistic outsourcing. We suppose that low levels of assets specificity, uncertainty and frequency are definitely linked to the decision of logistic outsourcing by the company. We also argue that organisational factors such as the size of the company, its level of competence and the importance of logistics in the company loosens the relationship between the features of transaction and the decision of outsourcing. Finally we put forward the idea that a large size combined with a low level of competence and a logistic function that is little structured may reinforce in a positive way the company's decision of logistic outsourcing.

In order to prepare later developments on the transactional explanation of the decision of logistic outsourcing, we would like to begin with a definition for 'logistics' and 'outsourcing'. First it is important to specify that we place our analysis at the level of the principal and within the organisation. Other approaches could have been adopted, though; for instance at the level of the principal but in a B to B perspective or at the level of the provider.

1. WHAT ABOUT LOGISTICS, OUTSOURCING, AND LOGISTIC OUTSOURCING?

1.1. LOGISTICS

In the field of logistics numerous works have been published (Sohail & Sohal, 2003) resulting in a host of definitions for the concept of logistics (Masson-Franzil, 2003) and the outsourcing phenomenon (Tage, 2000). In these articles (e.g., Colin & Paché, 1988; Halley, 1999; Paché, 1994; Samii, 2000), logistics is presented as a combination of physical and informational flows. We thus define logistics as the management and control of physical and informational flows, either by internal means or by outsourced means along a chain from the input to the output encompassing all the operations of transport, stock, manufacturing, packaging, distribution and so on carried out for the customer's satisfaction and in optimised performance conditions for the company.

Logistics has evolved through several stages. Seen as a supportive function in the 1960s, it slowly became a strategic function in the mid-1980s (Jones and Riley, 1985) with the emergence of the concept of Supply Chain Management (SCM), among others. SCM is a fashionable logistic strategy. Stock and Lambert (2001) define it as a component of eight businesses: customers' relationship management, customer service management, demand management, order fulfilment, manufacturing flow management, procurement, product development/commercialization and returns. SCM is dealt with in many Anglo-Saxon works, such as those by Bowersox (1997), Christopher (1998) or Larson and Hallodorson (2002).

1.2. OUTSOUCING AND LOGISTICS OUTSOURCING

At the theoretical level, the concept of outsourcing has been dealt with in many research works which have given numerous and varied definitions (Masson-Franzil, 2005). The concept has often been mentioned as a synonym of other and older notions, such as subcontracting, although they refer to other situations. We can mention here the influence of Barreyre's portent works (1968) on 'subcontracting'. He defines it as 'the action through which an economic agent entrusts another economic agent with the production of a good destined to be part of the combination of the final product of the subcontracting agent in question'. In the 1970s, subcontracting practices were rather restricted to the production of goods. However, in the 1990s, their range of

application came to encompass such functions of the company as supportive or administrative ones which had been unheard of in terms of outsourcing (Parrotin & Loubère, 2001). The decision of outsourcing has thus become a strategic action showing that firms aim at refocusing on their core activities or at looking for skills they do not have outside the company.

The increasing number of research works on outsourcing has led to some kind of stabilization of the concept today. Barthélemy (2001, p. 7-8), in his research work on outsourcing strategies, clearly distinguishes outsourcing from subcontracting, downsizing and reengineering by defining it as "the fact to entrust a supplier or an external provider with an activity and its management rather to carry it out in-house". According to the author, three crucial elements characterize outsourcing: 1) the activity used to be carried out by the outsourcer, 2) the outsourced activity usually goes together with an assets transfer, 3) the relationship between the outsourcer and the provider usually runs on the middle or long term.

As for logistics outsourcing several synonyms are often used: "outsourcing", "third party logistics" or "contract logistics" (Larson & Kulchitsky, 1999). Reviewing the definitions pointing at this concept (e.g., Langley, Dobrey, & Newton, 1997; Lieb, 1992; Lieb, Millen & Van Wassenhove, 1993; Lieb & Randall, 1996; Murphy & Poist, 1998; Tage, 2000; Virum, 1993) allowed us to define logistics outsourcing as the fact of entrusting all or part of the logistic chain, whose activities were previously performed in-house, to an external supplier on the long run, with a potential transfer of resources and with an objective of performance.

This definition, including a strategic dimension thus makes outsourcing different from the concepts of subcontracting, contracting out and so on which are often considered close or equivalent to it. According to Tage (2000: 113), it "presupposes that several characteristics are fulfilled before the relationship between buyer and seller" such as "a certain duration, joint efforts to develop further cooperation, a customerization of the solution, together with a fair sharing of benefits and risks".

Beyond some conceptual and semantic differences of opinion, it seems more interesting to note that these practices are in keeping within the paradigm of intercorporate relationships incurred by the restructuring of economic activities. Faced with the pressure of uncertainty and their environment, firms have transformed and new structures combining flexibility and dynamism

have sprung up. Outsourcing practices have thus emerged as hybrid cooperation forms situated along a continuum between the market and the hierarchy.

2. TRANSACTION COST ANALYSIS

The foundations of the T.C.E. theory have been enhanced mainly in Williamson's seminal works: "Markets and Hierarchies" (Williamson, 1975) and "The Economic Institutions of Capitalism" (Williamson, 1985a). The analysis suggested by this theory makes it possible to define whether some specific activities of a firm are to be carried out in-house or outside by resorting to the market.

The transaction is the basic unit of analysis in TCE (Commons, 1932: 34). Williamson writes that «a transaction may thus be said to occur when a good or service is transferred across a technological separable interface» (Williamson, 1981b: 1544). This transaction may create costs that result of the "frictions" in the economic system. Williamson (1985a) calls this costs "transaction costs" and divides them into three main categories: (1) Information costs, which correspond to seeking information on a potential partner; (2) «Bargaining costs», related to negotiating and establishing the contracts where all possible situations in future transactions are considered, (3) «Enforcement costs», i.e. costs to enforce and control performance, resolve conflicts and renegotiate contracts.

The amount of the transaction costs may be used as an indicator for the decision of outsourcing. When the transaction costs are low it is recommended to outsource the activity whereas when they are high, it is preferable to perform the activity in-house. However, in Williamson's perspective the transaction costs must be thought through together with the production costs.

Transaction cost economics is grounded of two key behavioral assumptions (1) «bounded rationality» and (2) «opportunism». Like Simon (1947), Williamson regards bounded rationality as 'a flexible form of rationality' which accounts for the individuals' incapacity to make entirely rational decisions. Opportunism «is concerned with the economic actors' self-interest-seeking tendency, which makes allowances for guile» (Wang, 2002: 155).

For Williamson (1985a: 2), transactions are characterized by the major dimensions: (1) assets specificity, (2) uncertainty and (3) frequency. Assets specificity is the most important feature of

transaction. It is defined as «the degree to which an asset can be redeployed to alternative uses and by alternative users without sacrifice of productive value» (Williamson, 1989: 142). Assets specificity introduces changes in the relation between agents which can sometimes lead to mutual dependence that is strong enough to generate some behavioural problems related to respecting commitments, sharing responsibilities and performances.

Williamson (1985a: 55) also distinguishes four forms of specificity: «site specificity», «physical asset specificity», «human asset specificity», and «dedicated assets». Three kinds of transactions can be linked to these specificities: (1) «non specific transactions», which have low assets specificity, are related to the acquisition of commodities; (2) «idiosyncratic transactions», which corresponds to highly specialised assets that are extremely rare and even unique; (3) 'mixed' transactions which pertain both of commodities and manufacturing.

Uncertainty is the second main factor, which can influence the structures of governance. For example, for a transaction with assets specificity and high uncertainty, Williamson favours hierarchy as the most efficient organisational form. Similarly, if performance is hard to measure, resorting to internal operations may be induced by uncertainty, too. Just like assets specificity, uncertainty may take different forms. Williamson (1979) highlights the uncertainty of the environment, which can make contracts drafting as well as the respect of their claims complex. According to Williamson (1985a), when the consolidation or enforcement of the agreements between the two parties are attempted at in order to improve the performance of a function, an increasing number of contingencies are taken into account because of uncertainty. Given the increasing number of contingencies it becomes more and more difficult to build up, control and enforce the contracts' existing agreements.

Frequency, the third and last feature of transaction, accounts for the transaction repetitiveness. This feature is closely connected to the question of scale economies (Williamson, 1985a). Thus, in case of occasional or exceptional transactions, the involved parties should find non costly transactions. Conversely, in case of recurring transactions, the parties should implement procedures to limit the costs incurred when they look for a partner, define the goods or services exchanged, negotiate and so on (Brousseau, 1993). Uncertainty is also taken into account to justify the choice of an alternative in terms of mode of transaction governance. Besides, the importance of uncertainty increases because of its connection to asset specificity. Thus, for highly

frequent transactions and investments in moderately specific assets, Williamson recommends a hybrid form of governance.

3. THE DETERMINANTS OF OUTSOURCING LOGISTICS

The transactional approach consists in searching a match between the features of transaction and the structure of governance: market (spot transaction), hierarchy (internal maintenance) or any other hybrid form between the two, such as contracts, licensing, franchising or brand agreements, alliances, common subsidiaries and so on (Williamson, 1985a). In the field of logistics, outsourcing may be considered as a hybrid form of governance in which each part accepts different contract provisions (David and Han, 2004). Indeed, according to Ménard (2003), this kind of task delegation, which usually means pooling resources, drawing up a contract and which maintains competition, is close to a hybrid form of governance. For 'hybrid forms', the neo-classical contract, which is 'more elastic and adaptative than classical contract law', is necessary (David and Han, 2004,p. 40). The two parties in the deal (the principal and the provider) keep their autonomy while being significantly in a state of bilateral dependence. The identity of the two parties is important because neither can be replaced without generating costs. This form of governance requires quite a range of tolerance from both parties. In case of a dispute, it is usually referred to arbitration, prior to any judicial appeal.

The previous developments have enabled us to assert the relevance of an analysis of outsourcing from the TCE perspective. The issues tackled from now on deal with the influence of the transaction features on the logistics outsourcing decision. Which transaction features are relevant to answer this question? Here we must analyse the specificities linked to the nature of the transaction costs as well as the transaction characteristics in our specific field, logistics.

3.1. NATURE OF THE TRANSACTION COSTS IN THE LOGISTICS CHAIN

In the context of an exchange there are both ex ante and ex post transaction costs all along the logistic chain. Such costs are essentially informational. Transaction costs and organisation costs related essentially in occasion to the main moments of an economic transaction: they are (1) «collect of information», (2)"bargaining" and (3) "control of performance" (Rosenbloom, 1995).

For example, for an outsourcer, any collection of information about prospective suppliers, their competence and capacities, the customers they supply provides strategic advantages but also generates ex ante costs. Similarly, during the 'negotiation', the inequality of information that may exist between a supplier with a great expertise in the field of logistics and a principal uninformed about the handlings of a supporting activity causes high direct and opportunity costs. As Paché (2002:55) highlights it, the suppliers "may deliberately conceal or distort the information they possess in order to benefit from more favourable trade conditions".

The ex post costs are made up of various costs: organisation, follow-up, control, re-negotiation of the initial agreement or for an agreement whose conditions would be more favourable (Paché, 2002).

3.2. CHARACTERISTICS OF THE TRANSACTION FEATURES IN THE FIELD OF LOGISTICS

3.2.1. Assets specificity

In the field of logistics, the degree of assets specificity is a crucial determinant. For Paché and Sauvage (1999: 108), the degree of assets specificity corresponds to the fact that the activity of physical distribution may sometimes require special handling or warehousing equipment depending on the non standard products and /or market they address. Logistic suppliers have become more and more knowledgeable and demanded. They have developed relatively standardized especially in the field of warehousing, packaging and so on, so that the degree of assets specificity tends to decrease. However, reality is not that trivial. Many relatively basic operations such as transport, handling and warehousing and so on require specific and costly investments. We can mention here refrigerated vehicles, deep freeze storing surfaces for frozen foodstuffs, sophisticated forklift trucks, guidance systems, etc. (Bienstock & Mentzer, 1999). The irrecoverable costs of such investments are high and given this situation of bilateral monopoly, the risks of opportunist behaviour are almost inevitable. On the fringe, the high degree of specificity reduces the profits of outsourcing and encourages the principal to organise the given activity in-house. This situation has been noted by several researchers in the field of logistics (e.g., Aertsen, 1993; Beier 1989; Maltz, 1993, 1994).

Another situation has been studied by Paché (2002). It describes the case when logistics suppliers, becoming more and more skilled, develop tailored services that are often very complex, for their customers. Such assets, highly idiosyncratic, little or not redeployable, will result in increased opportunism on the part of logistics professionals. Switching costs for such equipments are exorbitant for the principal.

As for the site specificities, they are to be found when the logistics supplier purchases equipment for final use which are close to his principal or client, often in a logic of geographical logistics integration. Site specificities more particularly have to do with physical logistic operations: transport, warehousing, packing, labelling and bagging. As they also depend on the nature and volume of goods, they often require heavy facilities and benefit from being completed in given places with the rational objective of cost reduction and also with the objective of improving the proposed service: quality and time (Dornier & Fender, 2001).

Finally the 'the human resources specificities' occur when a supplier develops skills resulting from learning such as 'learning by doing', often collectively, to satisfy the individual needs of a client.

The elements mentioned above as well as the theoretical predictions of TCE lead us to assume that a high degree of assets specificities reduces the advantages of an outsourcing operation and incites the principal to organize the logistic activities in-house. What are the results of empirical research on the issue? Several studies have confirmed the hypothesis of TCE about assets specificity. Concerning the global logistics chain, we can mention the results of Ballou's research (1999) which state that a high level of assets specificity justifies the company choice to resort to internalisation. On more specific aspects of logistics, Aertsen's study (1993) on goods shipping confirmed the transactional hypothesis, too. So did Stank and Maltz (1996) in their research work on resorting to logistics providers in the export sector as well as Bienstock and Mentzer (1999) on road transport.

Outside logistics, hypotheses related to assets specificity have found positive empirical evidence in other functions of companies; for instance, Coeurderoy and Ghertmann (1997) for international skill transfer in computer services firms, Poppo and Zenger (1998) in the field of information system outsourcing, and in the same field, Wang (2002) confirmed the assumption on specificity,

which is really linked to the relevance and success (or failure) of an outsourcing operation. Similarly, Bartélemy's PhD work (2000) relates the feature of specificity to the level of contract density, the value of the transaction costs and the duration of the contract. We have to admit that the problematics here are quite different.

In spite of the tendency to confirm the TCE hypotheses, no consensus has been reached yet, all the more so that there are still very few empirical research works in the field of logistics outsourcing (Masson-Franzil, 2005). Some empirical studies reject the theory of assets specificity. We can mention here Delmond's works (1994) in the field of applications development, Nam and al. (1996) in that of information system outsourcing, Patry and al. (1999) in human resources, Houde (2000) in information technologies.

Proposition 1: *The different activities of the logistics chain require investments that may show a high degree of specificity. In the light of TCE predictions, we should note a tendency to outsource activities requiring assets (physical, site and human resources) with a low specificity. Conversely, a tendency to keep inside the elements of the logistic chain requiring highly specific assets should be observed.*

3.2.2. Uncertainty

Uncertainty has two dimensions: an 'internal' dimension when it is related to the complexity of tasks performed in-house, 'external' or 'primary' which includes technological, legal, regulatory and tax uncertainty as well as competition uncertainty (Ghertmann, 2000). In the field of logistics, internal uncertainty has to do with, for example, the difficulty of company to estimate precisely their future needs, particularly concerning volume (Stank & Maltz, 1996). This form of uncertainty is directly connected to the uncertainty affecting the industry in which the company evolves. Consequently it is rather referred to the transactional hypothesis according to which the firms that must meet fluctuating demands are incited to resort to external resources for want of flexibility as well as for lack of capacity.

Both internal and external uncertainties appear to be closely linked in the context of logistics. In this sector indeed, some factors show evidence of the uncertain climate: (1) the institutional and regulatory context which is always becoming more complex (Dornier & Fender, 2001); (2)

globalisation, which is no new phenomenon, but whose detectable effects over the logistics organisation have become really noticeable for some years only (Sohail & Sohal, 2003).

According to Dornier P.P and Fender M. (2001), the primary effects of uncertainty are twofold: industrial and commercial destabilisation. Relocations and production units specialisation, delayed and just-on-time product differentiation, among others, have dramatically changed the traditional logistics models. Such moves generate uncertainty because they cause a fluctuation of demand.

Commercial strategies whose emergence mostly depends on extremely fluctuating consumers' needs also cause discrepancies between forecasts and reality. Ceaseless tensions as well as macro-economic evolutions, industrial or marketing tactics are sources of great uncertainty against which the search for flexibility remains the best solution.

According to the lessons of T.C.E. the link between a strong uncertainty and the decision of outsourcing has a negative dimension. As uncertainty increases, indeed, it simultaneously causes an increase of the ex ante and ex post costs. The result is ex ante costs for the search of information and information filing, negotiations and the drawing up of contracts and, on the other hand, ex post costs for re-negotiations that are too important, difficult and heavy to manage. In addition, high uncertainty results in unexpected events which in turn are responsible for further tension and restlessness between exchange agents (Hatch, 2000). Such scenarios may be transposed to the field of logistics (Bienstock & Mentzer, 1999). Nevertheless, the fact that some components of the logistic chain are not part of the key activities might nullify the T.C.E. predictions.

Uncertainty is often empirically tested in such problematics. For instance, in 1987, Walker and Weber showed that uncertainty and the decision to 'make-or-buy' were positively linked only when the competitive conditions of the market were differentiated. Bienstock and Mentzer's study (1987) confirms the uncertainty hypothesis; however, the latter was combined with the existence of specific assets. The results of Patry and al. (1999) firmly confirm this assumption when uncertainty is directed on a fluctuating and unpredictable demand. Barthélemy J. (2000) does not establish any positive link in a context of internal uncertainty; however, the link is

positive in case of an increase of the external uncertainty. The assumption on volume uncertainty has not been kept in Houde's frame (2000). Wang's research (2002) reaches a partial confirmation, whereas Nam's (1996) rejects it. In Chanson's study (2003), the feature is positive; however, its problematics focuses on the success or failure of an outsourcing operation and uses second-hand data.

Proposition 2 : *In the field of logistics, uncertainty is closely linked to the difficulty for the principals to define the needs that will satisfy an extremely fluctuating demand and the unstable and complex conditions of the external environment with certainty. In case of high uncertainty, we should witness a tendency to internalisation, while a tendency to outsource all or part of or the components of the logistics chain should take place in case of low uncertainty.*

3.2.3. Frequency

T.C.E. indeed predicts that in case of infrequent transactions, resorting to hierarchy cannot compensate for increasing administrative costs incurred by repeated tensions (Williamson, 1985a). Conversely high frequency provokes experience and synergy effects, which later reduce production costs thanks to scale economies. High frequency is often associated to a low level of assets specificity which implies that the transactions are standard. Conversely low frequency is associated to idiosyncratic assets and to complex transactions.

The empiric checking of these hypotheses is not clear. For example, while Murray and Kotabe's study (1999) validates the T.C.E. predictions when frequency is associated to a high level of assets specificity, Anderson & Schmittlein's researches (1984) as well as Anderson's (1985) do not.

In the field of logistics, in the case of products distribution, for example, the degree of frequency can provide information if the volume of merchandise hauled is high enough to justify the cost of a specific in-house equipment (Bienstock & Mentzer, 1999). In this case, it is relevant to check whether T.C.E. predictions about the decisions concerning highly frequent standard activities – such as transport which requires assets whose specificity is low but which are very costly, though – will be validated or not. The same questions may be raised about warehousing, a common

activity, which nevertheless requires human, organisational and technical skills that are more and more complex and particularly linked to the emergence of data warehousing (Preston and Brohman, 2002) which performing firms cannot ignore. Concerning ASP systems which have exploded over the last few years some attention should be given to the impact of the choice to allocate resources for them, which has not been done till now.

The empirical confirmation of this seldom-tested dimension is not clear. The study by Murray and Kotabe (1999) confirms the TCE predictions when frequency is combined with a high degree of assets specificity, while the works by Anderson and Schmittlein (1984) and by Anderson (1985) do not. The assumption was confirmed by Maltz (1994) for the logistics activity of storing-warehousing, and by Bienstock and Mentzer (1999) for road transport.

Proposition 3: *In the field of logistics, costs related to outsourcing are justified only in case of a high degree of frequency. According to theoretical predictions, we should note a tendency to outsource recurring activities. Conversely, non recurring activities should tend to be internalised.*

4. CONTEXTUAL POTENTIAL MODERATORS

The propositions described earlier have shown that the features of transaction can determine the choice by a company to outsource or internalise its logistic activities. Yet we do also acknowledge that some contextual factors can influence the decision to outsource by making it more or less possible. Indeed, although few works dealing with logistic outsourcing focused on this aspect, most works devoted to the theory of organisations have established there is a close relation between the firm's decision and its environment, whether internal or external for a long time (Ivanaj V., 2001). For the decision of logistic outsourcing it seems sensible to explore the moderating role of some organisational features typically analysed in scientific literature on decision-making, such as organisational structure, power distribution, the nature and size organisation, the features of the leader and management team and so on (Ivanaj, 2001). However, although all these factors deserve attention, we will focus on only some of the factors which are particularly important in our transactional perspective: (1) the size of the company, (2) its level of competence in the field of logistics and (3) the importance of logistics in the company.

4.1. THE SIZE OF THE COMPANY

The size of the company might influence the decision of logistic outsourcing. For example, although it is not directly connected to the logistic activity, Anderson & Schmittlein's works (1984) show that the size and the decision of vertical integration are correlated, which would confirm the hypothesis that scale economies are made. Besides, Pisano (1990), in his study on the outsourcing of the Research and Development activity, considers that the size gives evidence of the internal management costs. Thus, the larger is the firms, the higher is the costs generated by a heavily administrative structure. In their survey about SMEs and logistic outsourcing in Germany, Uhlig & Gélinas (1996), too notice that large companies resort to logistic services more often than SMEs. This could be accounted for by the fear of companies with a narrow scope to lose their independence regarding the management of their resources. From then on, we can suppose that that the link between the features of transaction and the decision of outsourcing by the company may vary according to the size of the company. For example, in the case of low levels of the features of transaction, the tendency for a company to outsource its logistic activities may be expected to be stronger in larger companies. It does not mean, though, that the size goes together with assets specificity or that transactions become less frequent or that uncertainty decreases or that the measure of performance becomes easier.

4.2. THE LEVEL OF COMPETENCE OF THE FIRM

Besides the organisational size, the level of competence is important. According to Halley (1999), making the decision of outsourcing that is likely to provoke organisational slacks requires an ability, competences and skills that are above average. Similarly, the study of outsourcing in the car industry by Fine & Whitney (1996: 27) concludes "the management of the outsourcing process is a core competence". This process requires knowledge and collective abilities up to the transferred activities. Similarly, in his study on the subcontracting of the information systems, Houde (2000) shows the importance of human resources in the definition of the structuring policies. The results of his study give evidence that the extra costs generated by the decision of outsourcing induce the firm to entrust the activities towards the hierarchy and that companies enjoying high knowledge choose to keep their data processing departments in-house. At the logistic level the same situation may often occur for a principal who knows and masters

innovative technologies in transport, handling or storing and/or the new methods in integrated management of the logistic chain – supply chain management.

Therefore, as Preston and Brohman (2002) suggest it, the emergence of the complex systems of warehousing management must have impacts that are still unknown on the decision of outsourcing or internalisation. The firm holding the competence needed for the optimal execution of an activity will be tempted to keep it in-house. It will be able to assess more easily the more or less strategic characteristic (Paché & Sauvage, 1999) and consequently to internalise the segments that create value and to outsource the rest (Conner, 1991).

4.3. THE DEGREE OF STRUCTURE OF THE LOGISTIC FUNCTION

Finally the degree of structure of the logistic function in the company represents an important factor (Halley, 1999). In his works on the logistic integration in a context of network subcontracting, Halley (1999: 336) takes this variable into account and defines it as "the level of logistic formalisation in each company". Halley (1999: 338) shows that today the logistic activity gets more and more formalised and that it generates the emergence of logistic departments or functions. A company whose logistics is loosely structured would resort to outsourcing more often than a company with an efficient and performing logistics. From then on we may suppose that that the importance of logistics within the company is likely to influence the decision of outsourcing and consequently to moderate the relation between the features of transaction and the decision of outsourcing.

Proposition 4: *The relationships between the features of transaction (assets specificity, frequency and uncertainty) and the decision of outsourcing all or part of the logistic chain will be influenced by certain contextual factors such as the size of the company, its level of competence and the degree of the structure of the logistic function in the company. These relationships will be negative for small companies with a high level of competence and a well-structured logistic function. Conversely, they will be positive for large companies with a low degree of competence and a loosely structured logistic function.*

DISCUSSION

The transactional perspective developed in the present article puts stress on the economic dimension of the decision of outsourcing and proposes some features of transaction through which the economic context influences the decision of logistic outsourcing. Assets specificity, frequency and uncertainty thus seem to be the relevant transactional determinants. More specifically, we put forward that the decision made by the company to outsource its logistic activity would be much more likely for assets with a low specificity, a low frequency and uncertainty of the transactions. We also put forward that other contextual factors might influence this decisional sequence and weaken the link between the features of transactions and the decision of outsourcing: the size of the company, its level of competence and the degree of the logistic structuring within the company. These factors make up organisational characteristics and can strengthen the link either in a positive or negative way.

The concepts presented here widen the application of the T.C.E. to a field of outsourcing that has seldom been explored till now, the field of logistics. We explore the idea that the T.C.E. makes up a relevant approach to understand the phenomenon of logistic outsourcing. This thesis goes against some works which claim that the theory can only be checked in the context of transactions concerning fundamental activities (Murray and Kotabe M., 1999). Yet our demonstration proves that transactional predictions are appropriate even in a specific context and for a supporting activity such as logistics. Therefore our propositions enrich the T.C.E. by widening the validity of its field of intervention. This is not to be neglected to define more accurately the theory through the specifications of its "scope conditions" (Schoonhoven, 1981; Walker & Cohen, 1985). This actually is an urgent need because of the lack of contribution in this field (David. & Han, 2004).

As has been underlined by David & Han (2004), many authors that are not specialised in economics or management claim they use the T.C.E. but they do not bring any theoretical justification nor strict operationalisation of their findings. This is all the more true in the field of logistic outsourcing where this kind of works proliferate that deals with a major phenomenon worldwide (Dornier & Fender, 2001; Whiteing, 2000). The theoretical distanciation of this article about the relevance of the T.C.E. in the field of logistics is for us an essential contribution, which grants a strong theoretical basis to this issue. Stronger theoretical bases and a wider consensus

among researchers about the meaning of findings and contributions will make it possible to progress more consistently and convincingly (David & Han, 2004).

Besides, it is crucial to take into account some contextual factors as moderating factors insofar as at would make it possible to explore the conditions under which the T.C.E. can be checked. Such variables as the size of the company, its level of competence and the degree of structure of any given function are seldom taken into account by research. As David and Han underline it when they deal with T.C.E. (2004:55) taking into account those contextual variables "would shift the debate from one of empirical "success vs. non-success" to one of 'success under certain circumstances". In spite of its contributions, the scope of the present article is limited. First of all, as far as theory is concerned, other theoretical trends should be referred to in order to grant a better understanding of the decision of outsourcing (Chéon, Grover, & Teng, 1995): the resources theory, the power theory, etc. the decision of outsourcing is very complex (Baldwin, Irani & Ped, 2001; Hood & Stein, 2003). While most managers apparently give a primary importance to the economic dimension (Van Laarhoven, 2001) which T.C.E. may deal with efficiently, other factors are to be taken into account: the strategic aspects (re-focus on the core competence and performance differential), the aspects of organisational learning (competences, routines and so on); the social and cultural aspects may also prove important. These factors represent as many research tracks to be explored in scientific literature (Chéon & al., 1995; Wang, 2002). Besides, according to David and Han (2004), it would be very interesting for the success of the T.C.E. itself to compare it with these theoretical approaches in order to measure the capacity of each one to account for the decision of outsourcing.

The scope of this article is also limited because it does not take into account other types of effects than the direct and moderating ones to explain the decision of outsourcing. According to Boal & Bryson's classification (1987) such effects would be those of interaction taking place in the various features of transactions and/or between the features of transaction and the contextual factors. We could study the effect of interaction between assets specificity and uncertainty, assets specificity and frequency, uncertainty and the difficulty to measure performance, among others (David & Han, 2004); the effects deriving from frequency in the relation assets specificity-outsourcing, or from size in the relation assets specificity-outsourcing … At last, the final decision may be considered beyond the dichotomy between outsourcing and internalisation, even

market and hierarchy; hybrid forms of governance are also to be taken into account, the choice would then be made between hierarchy and hybrid or hybrid and market (David & Han, 2004).

The rapid development of E-commerce has led to the development of on-line freight marketplaces and a lot of spot freight markets companies emerge (Regan & Song, 2001). This way, some questions would deserve to be asked: How can spot transactions be categorized? What is the nature and what are the sources and the importance of the transaction costs? What are the risks for the principal? Similar research in the light of TCE would be especially interesting.

Eventually, and more generally, the limits of the present article are closely linked to the very limits of the transactional approach, which require to be explored by the theory of organisation. Thus some limits are subjective (Bullen, 2004) and show the limits of the conceptual approaches to comprehend the issue of outsourcing as a whole. For example the morale of the staff, which can be affected during such operations (Philipps, 1992) may generate organisational disorders. Gosse, Sargis, Roussel, & Sprimont (2002) quote other factors such as "the working community burst", "the loss of the sense of the collective", and so on. Other more obvious 'barriers' may consist in unemployment (Elmuti, Kathawala, & Monipallil, 1998), in an underestimated extra ex ante working time during the drawing up and control of contracts (Gareiss, 2002), in a loss of knowledge and competence (Beaumont & Costa, 2002), etc.. Such considerations could be transferred to the field of logistics. Others appear that are more specific to this field; for example, Grand (1997) shows that road haulage is often entrusted to professional haulers because of severe constraints linked to regulation but also because of the fluctuation of demand. Similarly, in exports logistics, Bigras & Desaulniers (1998) notice the principal's strong motivations in favour of outsourcing: easy access to a network of distributors abroad, to highly specialised services regarding transport and to export markets.

The theoretical propositions in the present article as well as the ensuing teachings make up as many questions, which require from – and offer academic research a broad field of investigation that is theoretical as well as empiric.

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