Abstract

Third-party logistics (TPL) has attracted considerable research attention in the recent past. Despite the growing body of literature on this topic, precious little effort has been devoted to synthesizing the overall state of art of research on TPL. In this paper, an attempt is made to review the status of literature on TPL. A literature review scheme is presented. A total of 152 articles published between 1989 and 2006 in 33 reputable international journals are reviewed and classified into content- and methodology-related issues. Based on the review, suggestions for future research are likewise provided.

Keywords: Third-party logistics; Interorganizational relationships; Literature review

1. Introduction

In the recent past, third-party logistics (TPL), also referred to as logistics outsourcing (e.g. Knemeyer et al., 2003; Maltz and Ellram, 1997; Razzaque and Sheng, 1998), has received considerable attention from logistics scholars, resulting in a plethora of research and writing in this field. The interest of researchers in TPL should continue as several recent studies suggest that a steadily increasing number of companies across industry sectors use third-party providers for the management of all or part of their logistics operations (e.g. Lieb and Bentz, 2004, 2005a; Lieb and Miller, 2002; Lieb and Randall, 1999a).

Despite the growing body of literature on this topic, efforts to synthesize the overall state of art of research on TPL have so far been rather limited. Razzaque and Sheng (1998) provided a comprehensive review of the logistics outsourcing literature, highlighting key research findings from journals and other publications. An overview of TPL research is also offered by Skjoett-Larsen et al. (2003); being aimed at identifying the distinctive characteristics of the “Nordic School of TPL” in terms of research methodology, theoretical approaches or empirical findings, their study reviewed only the contribution of Nordic TPL researchers to the international research agenda. More recently, Maloni and Carter (2006) provided a review of the survey-based portion of the TPL academic literature to assess its progress. Their work is only based on 45 publications, i.e. it does not cover all extant articles concerning TPL.

As an attempt to fill this gap, this paper presents a review of the major literature and key findings on TPL. An extensive literature search of academic journals from 1989 to 2006 was conducted, yielding a total of 152 articles. A framework is developed for identifying the key content of the literature on TPL and used to classify the articles. The existing literature is also examined from a methodological

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point of view, providing an overview of research approaches taken in the collected articles. Hopefully, this study will serve as a roadmap of TPL literature for both academicians and practitioners and help stimulate further interest.

This paper is organised as follows. In Section 2, background is given on the concept of TPL by examining the various approaches taken in the literature for defining TPL. The applied methodology for this study is illustrated in Section 3, while Section 4 presents the results of the literature review. In Section 5, an overview of research approaches used in the examined articles is provided. Section 6 closes the paper by offering conclusions and an attempt to provide some perspectives on future research.

2. Defining TPL

One of the challenges in trying to evaluate the growing body of literature on TPL is the lack of a single consistent definition of the concept. Indeed, many definitions and interpretations of TPL can be found in the literature (Skjøtt-Larsen, 2000; Halldórsson and Skjøtt-Larsen, 2004). Van Laarhoven et al. (2000) highlight that the terminology in this field is not always consistent; in some cases TPL is used as a label for traditional “arm’s length” sourcing of transportation and/or warehousing, whereas in other instances the term is used to describe an outsourcing of a more complex character that can encompass the entire logistics process. Likewise, Ojala (2003) as well as Knemeyer and Murphy (2005a, b) point out that a number of broad and narrow approaches to defining/interpreting TPL have been used by researchers. Some examples may help illustrate the varying scope of existing interpretations of the term TPL.

According to Lieb (1992, p. 29), TPL involves “the use of external companies to perform logistics functions that have traditionally been performed within an organization. The functions performed by the third party can encompass the entire logistics process or selected activities within that process”. In a similar vein, Coyle et al. (2003, p. 425) suggest that TPL involves an external organisation “that performs all or part of a company’s logistics functions”. These “broad” definitions appear to suggest that TPL includes any form of outsourcing of logistics activities previously performed “in-house”. Alternative, “narrower” definitions link the TPL concept to some distinctive functional and/or interorganizational features of the logistics outsourcing relationship. Among them, Berglund et al. (1999, p. 59) emphasise the supply of management support in addition to operational activities by providers and the duration of the relationship as follows: “Third-party logistics are activities carried out by a logistics service provider on behalf of a shipper and consisting of at least management and execution of transportation and warehousing. In addition, other activities can be included, for example inventory management, information related activities, such as tracking and tracing, value added activities, such as secondary assembly and installation of products, or even supply chain management. Also, the contract is required to contain some management, analytical or design activities, and the length of the co-operation between shipper and provider to be at least one year, to distinguish third-party logistics from traditional “arm’s length” sourcing of transportation and/or warehousing”.

Murphy and Poist (1998, p. 26) stress the duration and win–win nature of the relationship along with the customization and broader range of logistics services in the arrangement. According to their definition, TPL involves “a relationship between a shipper and third party, which, compared with basic services, has more customized offerings, encompasses a broader number of service functions and is characterized by a longer term, more mutually beneficial relationship”. By these narrower definitions, TPL appears to be distinguished from the “traditional” outsourcing of logistics functions on a transaction-by-transaction basis presupposing that several features are fulfilled before the relationship between buyer and provider of logistics services can be characterized as TPL. These features include the provision of a broad range of services, a long-term duration, joint efforts to develop cooperation, the customization of the logistics solution, and a fair sharing of benefits and risks, and suggest that TPL incorporates strategic and not just tactical dimensions (Skjoett-Larsen, 2000).

A sort of conciliation between the alternative broader and narrower views of TPL can be found in the definition offered by Bask (2001, p. 474), which describes TPL as “relationships between interfaces in the supply chains and third-party logistics providers, where logistics services are offered, from basic to customized ones, in a shorter or longer-term relationship, with the aim of effectiveness and efficiency”. This definition is applied in the present article, because it clearly points out the essence of the TPL concept as involving business-to-business relationships where third parties fulfil the logistics
needs of their clients in the supply chain they are operating in (Berglund, 2000), while recognizing the potentially wide range of these relationships in terms of scope, content and duration. It is to be noted that Bask (2001) conceives TPL as a set of three dyadic relationships linking seller, buyer and logistics service provider in a supply chain. However, as the author himself and Berglund (2000) observe, this triadic form of relationship cannot be considered as the normal case in that most TPL relationships are limited either to the dyadic relationship between seller (of the goods) and logistics service provider or buyer (of the goods) and logistics service provider and, accordingly, most research addresses the two-way linkage between the logistics service provider and either the buyer or supplier (of the goods). In this study, this conceptualization of TPL as a dyadic relationship between shippers (buyers or sellers of the goods) and logistics service providers in a supply chain is adopted.

3. Methodology

When conducting an investigation of the state of knowledge in a field or subject, three basic approaches have been used (Li and Cavusgil, 1995). One approach is the Delphi method through which experts who are familiar with the area are surveyed. The second approach is meta-analysis in which empirical studies on the specific subject are gathered and statistically analysed. This approach has been applied by Ashenbaum et al. (2005) for estimating the TPL growth rate in the US. The third approach, the one adopted in this study, is content analysis—a research method for systematic, qualitative and quantitative description of the manifest content of literature in an area. At a general level, the procedure for conducting content analysis is centred on two major steps (Li and Cavusgil, 1995; Seuring et al., 2005): (1) definition of sources and procedures for the search of articles to be analysed and (2) definition of categories instrumental to the classification of the collected articles. These have been applied in the present review of TPL literature and are described in detail in the following sections.

3.1. Literature search procedures

The first step of the analysis consisted of searching for articles relevant to the purpose of this study. The search was limited to academic journals and utilized several methods.

Initially, 23 journals in the areas of logistics and transportation, operations management, business/marketing and general management covering the time period 1989–2006 were searched for articles dealing with any aspect of TPL. The choice of these outlets was based on previous studies that identified and ranked the journals making the highest contribution to the transportation/logistics discipline (e.g. Fawcett et al., 1995; Ferguson, 1983). For the literature search “third party logistics”, “logistics outsourcing”, “logistics alliances” and several other relevant descriptors were used. The full text of each article was reviewed in order to eliminate those articles that were not really related to TPL. As a result of this search, 97 articles were identified. An additional search was conducted using the same descriptors in ProQuest, ScienceDirect and EBSCO databases. Thereby, 48 other papers were found. Finally, the reference sections of key articles were scanned for additional citations; this yielded 7 other articles. By these procedures, a total of 33 journals and 152 articles were identified. The reference list to this paper contains all the collected articles. Although this search may not be exhaustive, it is believed that the journals selected and the articles reviewed comprise a reasonably representative and comprehensive body of the research work being accomplished in this area.

Table 1 shows the distribution of articles in the various journals from 1989 to 2006. The indicated time frame has been divided into three periods in order to identify trends in the chronological progression of research on TPL. The figures in the table indicate that research on TPL did not begin to appear significantly in scholarly journals until the mid-to-late 1990s and has increased since. Indeed, only 11 articles have been published between 1989 and 1994, while contributions published in the last period (2001–2006) amount to 86, representing about 56% of the total number of collected articles.

It is to be noted that of the 11 articles published between 1989 and 1994, there is not any contribution published in 1989 and only three articles have been published in 1990. This suggests that the starting year of the time frame (1989) has been well chosen. Table 1 also shows that the primary publication outlets for TPL research are International Journal of Physical Distribution & Logistics Management, Journal of Business Logistics, The International Journal of Logistics Management,
Transportation Journal and International Journal of Logistics: Research and Applications, collectively publishing about 61% of the total articles. The large number of articles in the International Journal of Physical Distribution & Logistics Management is partially the result of the publication of two special issues on TPL in 2006, an event in itself indicative of the growing relevance of the topic in logistics research. Overall, the other primary operations management, business/marketing and general management journals have not served as a significant outlet for research in this area.

3.2. Definition of the content classification scheme

According to the working definition adopted in this study, TPL is conceived as an interorganizational (dyadic) relationship between shippers and providers of logistics services in a supply chain. Given this view of TPL, the approach to literature content analysis has been centred on the key dimensions defining such a relationship. In detail, it was assumed that the basic dimensions of the TPL relationship delineating why, how and with what results it develops and functions provide anchor points to organize and analyse most of TPL issues addressed in the literature. The key dimensions of the TPL relationship are encapsulated in the framework shown in Fig. 1, the construction of which was guided by a review of existing frameworks of interorganizational relationships. In the last decades, several models and frameworks of business relationships have been developed from different literature areas and theoretical perspectives (for a summary, see Cousins, 2002). Among them the work by Van de Ven (1976) and the IMP

### Table 1

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<tr>
<td>International Journal of Physical Distribution &amp; Logistics Management</td>
<td>4</td>
<td>13</td>
<td>23</td>
<td>40</td>
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<tr>
<td>Journal of Business Logistics</td>
<td>4</td>
<td>12</td>
<td>3</td>
<td>19</td>
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<tr>
<td>The International Journal of Logistics Management</td>
<td>1</td>
<td>7</td>
<td>4</td>
<td>12</td>
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<tr>
<td>Transportation Journal</td>
<td>–</td>
<td>3</td>
<td>9</td>
<td>12</td>
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<tr>
<td>International Journal of Logistics: Research and Applications</td>
<td>–</td>
<td>1</td>
<td>9</td>
<td>10</td>
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<tr>
<td>Journal of Enterprise Information Management (a)</td>
<td>–</td>
<td>3</td>
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<td>Supply Chain Management: An International Journal</td>
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<td>International Journal of Logistics Systems and Management</td>
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<td>–</td>
<td>5</td>
<td>5</td>
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<tr>
<td>International Journal of Operations &amp; Production Management</td>
<td>1</td>
<td>–</td>
<td>3</td>
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<tr>
<td>Transportation Research</td>
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<td>1</td>
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<td>Transport Logistics</td>
<td>–</td>
<td>4</td>
<td>–</td>
<td>4</td>
</tr>
<tr>
<td>Asia Pacific Journal of Marketing and Logistics</td>
<td>–</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Journal of Supply Chain Management (b)</td>
<td>–</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>European Journal of Operational Research</td>
<td>–</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Industrial Marketing Management</td>
<td>–</td>
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<td>1</td>
<td>2</td>
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<td>International Journal of Production Economics</td>
<td>–</td>
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<td>Omega</td>
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<td>–</td>
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<td>2</td>
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<tr>
<td>European Journal of Purchasing &amp; Supply Management</td>
<td>–</td>
<td>–</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Harvard Business Review</td>
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<td>–</td>
<td>–</td>
<td>1</td>
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<tr>
<td>Journal of Business &amp; Industrial Marketing</td>
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<tr>
<td>Production and Operations Management</td>
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<tr>
<td>Transport Reviews</td>
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<tr>
<td>Transportation Quarterly</td>
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<td>Transportation Science</td>
<td>–</td>
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<td>1</td>
<td>1</td>
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<tr>
<td>Others (c)</td>
<td>–</td>
<td>3</td>
<td>6</td>
<td>9</td>
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<tr>
<td><strong>Total</strong></td>
<td>11</td>
<td>55</td>
<td>86</td>
<td>152</td>
</tr>
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</table>

\(a\)Formerly Logistics Information Management.
\(b\)Formerly International Journal of Purchasing and Materials Management.
Group\(^1\) (e.g. Ford, 1980; Håkansson, 1982, 1987; Håkansson and Snehota, 1995) have been particularly helpful in the move towards identifying the crucial dimensions of TPL relationships and organizing concepts and variables to describe them. Fig. 1 depicts the major components of each dimension and the relationships among them.

The first dimension describes the context within which the TPL relationship takes place. This refers to both external and internal contextual factors. Major components of the external context include characteristics of the general macro environment (e.g. economic trends, regulatory framework, technological developments) as well as of the supply chain representing the network\(^2\) in which the TPL relationship is embedded (e.g. structure, processes, types of business links among actors in the chain). This conceptualization of the external context is consistent with the prevailing view of dyads’ environment within the industrial marketing and purchasing literature according to which dyadic relationships are embedded in a network of relationships that is itself enveloped by a macro environment (Anderson et al., 1994). Some of the major features of the internal context of the relationship include organizational size, structure and strategies of the parties involved (i.e. shipper and provider of logistics services). The two sets of contextual factors combine to influence the ways in which shippers and providers structure and

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\(^1\)The International/Industrial Marketing and Purchasing (IMP) Group was formed in the mid-1970s by European researchers with interests in industrial markets and has now evolved into a research community concerned with industrial marketing and purchasing. Although the IMP Group has its origins in the marketing discipline, it also has several other antecedents of scientific inspiration, including organization theory, the new institutional economic theory and certain strands of sociology. Challenging existing models within the industrial marketing literature that assumed competitive and adversarial relationships as being the norm, the group developed a model of buyer–seller relationships in industrial markets—the interaction model—and illustrated its applicability through comparative studies of buyer–supplier relationships within and across a number of European countries. The model identifies groups of variables that describe and influence the interaction between buying and selling companies, thereby greatly advancing the understanding of buyer–supplier relationships and the factors influencing them. Emphasizing the embeddedness of single dyadic relationships in the network of connected interfirm relationships, subsequent work of the group extended the focus from individual buyer–supplier relationships to industrial networks.

\(^2\)Several authors suggested the idea of the supply chain as a confederation of partners linked together as a network (e.g. Christopher, 1992, 2000; Hertz, 2001; Lambert and Cooper, 2000).
manage their relationship, affecting, among others, those factors that determine the shipper’s logistics needs and motivation to outsource, the number of alternative relationships available for the parties, the interaction processes between the parties, and the parties’ ability to predict and forecast changes in the market that in turn may affect the relationship.

The second dimension relates to the structure of the relationship. TPL arrangements can vary widely depending on several attributes, such as scope of the activities involved, continuity, complexity, symmetry and degree of formalization. These are some of the often recurrent structural characteristics of business relationships (Håkansson and Snehota, 1995). Along with them, other behavioural attributes are comprised in this dimension that contribute to shaping the climate or working atmosphere of the TPL relationship, such as dependence, trust, equity, commitment and conflict.

The developmental process of the relationship constitutes the third dimension of the framework. Consistently with the approach taken in many studies of developmental processes of interorganizational relationships (e.g. Dwyer et al., 1987; Ford, 1980; Frazier, 1983; Ring and Van de Ven, 1994), TPL development process has been conceived as consisting of a sequence of stages, each of which goes through a number of interactions/activities. The different stages of relationship development are summarised as follows:

(a) The early build-up stage, in which potential providers are selected by shippers to negotiate and develop a (formal or informal) contract specification for the provision of logistics services.

(b) The execution stage, in which the commitments and rules of action agreed upon by the parties in the previous stage are carried into effect; in this phase, operations are organized, executed, coordinated and monitored entailing adaptations and increased experience between the companies of the respective activities.

(c) A potential long-term stage, in which routine ways of dealing tend to become institutionalized and several kind of bonds between the parties arise/strengthen as a consequence of extensive formal and informal adaptations that have occurred. These bonds have an important function in favouring the creation of long-term relations and can relate to the technologies used and shared by the parties, personal knowledge and trust, administrative routines, procedures and legal contracts (Håkansson and Johanson, 1990).

It is to be noted that the possibilities of renegotiation and/or dissolution of the relationship are implicit throughout this process conceptualization.

The final dimension of the framework reflects the outcomes that result from the TPL relationship. As interorganizational relationships are connected, what is produced in a dyad has effects not only for the parties directly involved but also for other relationships and organizations of the overall network in which the relationship is embedded (Håkansson and Snehota, 1995). Accordingly, TPL outcomes have been divided into internal outcomes perceived by the parties directly involved (shipper and logistics service provider) and external outcomes experienced at the supply chain level. Over time, feedback on perceived outcomes of the relationship is expected to influence the other dimensions in the framework.

The four dimensions of the framework have been used as “macro categories” to review and classify articles according to the primary topic addressed. More in detail, the decision rule for placing articles into a particular category was based on the dominant or most prevalent theme addressed in the article as derived from the indicated objective(s)/purpose(s). During the classification process, the need arose to partially revise this original four-category scheme. Indeed, some of the collected articles were found to be multifaceted in that they simultaneously address aspects of the context, the structure, the process and the outcomes of TPL arrangements. Therefore, a fifth category was inserted to gather these “comprehensive” articles.

4. Classification and review of TPL literature

In this section, the results of the content analysis of TPL literature are presented. First, the distribution of the reviewed articles that come under each of the five content categories is provided. This is followed by a discussion highlighting some key findings from contributions within each category.

Table 2 offers a frequency distribution of the reviewed articles by content. It can be observed that particular emphasis has been placed by researchers on context-related issues of TPL, with about 40% of the total articles addressing these issues. Another
heavily investigated area is represented by issues of the TPL developmental process, which gathers 25% of total articles. Table 2 further shows that a considerable portion of the examined literature is constituted by “comprehensive” articles, with about 18% of the total articles falling into this category. Less published areas are on structure and outcomes of TPL, accounting for 6.6% and 9.9%, respectively.

Table 2
Distribution of articles by content

<table>
<thead>
<tr>
<th>Content category</th>
<th>Number of articles</th>
<th>Percentage of articles</th>
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<tbody>
<tr>
<td>Context</td>
<td>61</td>
<td>40.1</td>
</tr>
<tr>
<td>Structure</td>
<td>10</td>
<td>6.6</td>
</tr>
<tr>
<td>Process</td>
<td>38</td>
<td>25.0</td>
</tr>
<tr>
<td>Outcome</td>
<td>15</td>
<td>9.9</td>
</tr>
<tr>
<td>Comprehensive</td>
<td>28</td>
<td>18.4</td>
</tr>
<tr>
<td>Total</td>
<td>152</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 3
Summary of references under the content classification scheme of the literature

<table>
<thead>
<tr>
<th>Classification category</th>
<th>References</th>
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</table>

4.1. Key findings from previous research on TPL

In the sections that follow, a review of research and key findings in each of the five categories is presented. Although this review is not exhaustive, it provides some reasonable insights into the work being accomplished in the field.
4.1.1. Research on TPL context

As the distribution of articles by content has shown (Table 2), context-related issues of TPL have drawn considerable attention among researchers, resulting in a plethora of contributions devoted to the analysis of factors of the external and internal context influencing structure and development of TPL arrangements.

With regard to the external environmental factors impacting TPL, a comprehensive descriptive analysis of the several economic, regulatory and technological drivers behind the rise of TPL has been provided by Sheffi (1990). Increased global competition, deregulation of the transportation industry, rising customer expectations on superior logistical service, growing focus of companies on core competencies, increasing popularity of just-in-time (JIT), and revolution in computers and communication technology are indicated as the main forces causing TPL services to experience explosive growth. Lewis and Talalayevsky (2000) further addressed the implications of advancements in information technology (IT) for TPL development. They observed that the rapid progress in information processing and communication technology supports the outsourcing of logistics activities to third-party firms as IT allows buyers and sellers of logistics services to communicate directly over data-rich, easy-to-use information channels, thereby reducing coordination costs and fostering strategic partnerships based on mutually agreed goals.

Beside the forces of the general external environment, TPL is affected by changes in the structure, processes and strategies of the supply chain in which it is embedded, as highlighted in the works by Bask (2001) and Delfmann et al. (2002). Stressing the need for a strategic view focusing on the relationship between supply chain strategies and TPL, Bask (2001) proposed a normative framework for organizing relationships between alternative supply chain strategies and different types of TPL services. Delfmann et al. (2002) analysed implications of changes in supply chain configurations induced by e-commerce for TPL. Their work illustrated how e-commerce—through the emergence of electronic marketplaces in the upstream part of the chain and the disintermediation of the downstream chain—affects the structure of supply chains, thereby causing challenges for TPL operations and strategies.

Studies focusing on the external context of TPL may be found rather scanty when compared with the large amount of contributions addressing issues of the internal context of TPL. Indeed, of the 61 works within the context category, over 90% are devoted to the investigation of the various characteristics of TPL parties (buyers and sellers of logistics services) and their influence on the formation of TPL arrangements.

Some of these studies examined how organizational characteristics and strategies of users of logistics services are related to the decision to enter in TPL arrangements. Rao and Young (1994) identified three main characteristics of shippers’ business profile that drive their logistics outsourcing behaviour and influence the formation of a favourable or unfavourable climate for outsourcing: (a) network complexity, referring to both the geographic dispersion of the firm’s trading partners as well as the intensiveness of transactions with selected trading partners; (b) process complexity, referring to time and task compression (or lack thereof) in the logistics process; and (c) product complexity, relating to the special circumstances required by products and materials due to the complexity of the environment (temperature, humidity, etc.) governing their transportation, storage and handling. In a survey-based study of US manufacturing firms, Daugherty and Dröge (1997) explored how organizational structure in divisionalized companies is related to logistics outsourcing decisions and found differences in the anticipated usage levels of external logistics service providers between divisionalized manufacturers with a “line/staff” structure (line and staff logistics responsibilities centrally consolidated at the corporate management level) and those with a “staff-only” configuration (staff logistics responsibilities centrally consolidated and line activities decentralized within business units). Murphy and Poist (1998) investigated demographic differences (in terms of firm type, firm size and number of activities managed by the logistics department) between users and non-users of TPL services, discovering that firm size might help to differentiate between users and non-users of TPL services.

While early studies have focused on users of logistics services, more recent research efforts have turned their attention to third-party logistics service providers (TPLPs). Indeed, the rapid expansion and transformation of the TPL industry during the last years has been the subject of an increasing interest to logistics scholars who have increasingly attempted to provide insights into issues on the provider
side of the industry. These include the industry’s service offerings, current status and future prospects (e.g. Larson and Gammelgaard, 2001a; Lieb and Bentz, 2005b; Lieb and Kendrick, 2003; Lieb and Randall, 1996b, 1999b; Peters et al., 1998a), operational issues of TPLPs, such as network design/optimization (Ko et al., 2006; Zäpfel and Wasner, 2002), benchmarking (Min and Joo, 2006), quality (Brah and Lim, 2006; Fung and Wong, 1998; Neo et al., 2004) and the role of these operators in logistics set-ups (Stefansson, 2006). In particular, by a review of the literature addressing TPLPs, it appears that much of the research in this area has focused on the strategic behaviour of these operators. Berglund et al. (1999) proposed a strategic segmentation of TPL providers based on two dimensions: standard services versus logistics solutions; traditional, basic logistics activities (e.g. transportation and warehousing) versus value-added logistics. Sum and Teo (1999) examined the different strategic postures of logistics services providers in Singapore using Porter’s typology of competitive strategies and analysed the business performance, technologies, operations objectives and future plans of each strategic type. Such an approach to the analysis of TPLPs’ strategies has also been used in the study by Yeung et al. (2006), which investigated the relationship of strategic choices of pure cost, pure differentiation or a combination strategy on a composite measure of financial performance for TPLPs in Hong Kong. Hertz and Alfredsson (2003) addressed the strategic development of TPL providers with a focus on the balance between general problem-solving capability and degree of customer adaptation. Carbone and Stone (2005) examined the strategic behaviour adopted by 20 leading European TPLPs, paying particular attention to their approach to mergers and acquisitions and logistics alliances.

Recent research in this area has also focused on the adoption of IT in these firms. Indeed, the ability to utilize IT has been increasingly considered one of the key determinants of success for these operators (e.g. Langley et al., 2002, 2005), and several studies have examined the current status of IT usage in the industry along with the perceived benefits and barriers to IT adoption by these companies. Piplani et al. (2004) investigated the status of IT implementation in the Singapore TPL industry and found that, while providers increasingly are incorporating IT in their operations or are planning to do so, concerns about the speed of obsolescence of advantages derived from IT and the shortage of trained personnel still hinder full-scale IT implementation. Lai et al. (2005) and Evangelista and Sweeney (2006) assessed IT usage in the TPL industry in Hong Kong and in Italy, respectively. Findings from these two studies converge in indicating that, although the importance of IT for improving performance is well-recognized by TPLPs, lack of IT expertise and insufficient financial support prevent these operators, especially small and medium companies, from moving towards its full adoption. Koh and Tan (2005) and Ying and Dayong (2005) focused on the potential of e-commerce in TPL providers, showing that the use of e-commerce applications can impact performance and competitive advantage of these companies in terms of reduction of operations’ time and costs, increase of customer service level and enhanced integration with business processes of other supply chain members.

### 4.1.2. Research on TPL structure

As the use of TPL services increased, research efforts have been made to gain a deeper understanding of the manner in which shippers and providers structure their arrangements, paying particular attention to those exhibiting cooperative behaviours between the parties. Characterization of TPL arrangements has been based on conceptual typologies (e.g. Pappu and Mundy, 2002; Zinn and Parasuraman, 1997), but has primarily relied upon empirical investigation. Empirical research aimed at providing insights into the nature and structure of these arrangements has focused on a number of attributes, such as the scope in terms of number and typology of activities outsourced, duration and frequency (e.g. Pachê, 1998; Rabinovich et al., 1999). Some of the studies in this area have also focused on the analysis of behavioural or relational attributes of TPL relationships, such as trust, commitment, dependence, conflict and equity (e.g. Gardner et al., 1994; Knemeyer et al., 2003; Knemeyer and Murphy, 2005a, b; Moore, 1998; Moore and Cunningham, 1999). Most of these studies use a relationship marketing perspective as the basis for examining differences in key behavioural elements across different types of relationships. Moore and Cunningham (1999) focused on five attributes—trust, equity, commitment, conflict and opportunism—to explore differences in behavioural elements that exist between logistics alliances and transactional (or non-alliance) relationships.
Their findings suggest that trust and commitment are major distinguishing behavioural characteristics of logistics alliances. Knemeyer et al. (2003) found statistically significant differences for the elements of trust, commitment, investment, dependence, communication and shared benefits across distinct types of partnerships previously suggested in the logistics literature. More recently, Knemeyer and Murphy (2005b) compared the perspectives of TPL users and providers with respect to the relationship marketing elements of attachment, communication, dependence, investment, opportunistic behaviour, reciprocity, reputation, satisfactory prior outcomes and trust as well as relationship marketing outcomes, including customer referrals, customer retention, service recovery and performance improvements.

4.1.3. Research on TPL developmental process

There has been extensive writing and model building in the area of TPL processes. Such an interest by researchers may be attributed to the problems experienced by companies in the establishment of TPL arrangements. Indeed, while TPL relationships can yield positive outcomes for the parties, the path to achieving these results is not without its difficulties (House and Stank, 2001). Impediments are likely to be encountered in all the different phases of relationship development and often lead to dissolution as witnessed by the failures reported in both academic and trade press (e.g. Ackerman, 1996; Foster, 1999). In an attempt to help companies to understand what resources and practices are needed in order to successfully establish and manage TPL relationships, various prescriptive models and decision frameworks of TPL development and implementation have been suggested in the literature. Bagchi and Virum (1996) offered a process model for logistics alliance formation, management and control, which comprises three phases: identification of the need for the alliance; planning and management; and measurement and control of operations. Sink and Langley (1997) provided a conceptual model of the TPL buying process with five stages: identify the need to outsource logistics; develop feasible alternatives; evaluate and select supplier; implement service; and ongoing service assessment. Maltz and Ellram (1997) proposed a major modification of the total cost of ownership framework, which they call total cost of relationship (TCR), to deal with logistics outsourcing decisions. Lambert et al. (1999) presented a model of partnership development and implementation based on three major elements: drivers (e.g. asset/cost efficiencies, enhanced customer service and profit growth/stability), facilitators (e.g. corporate compatibility, similar managerial philosophy, mutuality and symmetry) and management components (e.g. planning, joint operating controls, communications and risk/reward sharing). Andersson and Normann (2002) modelled and compared the purchasing process for advanced versus basic logistics services. They focused on three phases identified as particularly critical in the purchase of advanced logistics services: service definition, request for proposal and contracting. More recently, de Boer et al. (2006) presented a prescriptive model for guiding outsourcing decision processes that incorporates some basic principles of behavioural decision-making theory, in particular the satisficing concept. The model builds on the observation of some discrepancies between the assumptions of existing prescriptive models and the processes observed in practice through two cases of logistics outsourcing.

Researchers’ efforts to support managers in the establishment and management of TPL arrangements have also resulted in a variety of contributions addressing issues of specific activities of the TPL developmental process, such as partner selection, contract design, coordination, communication/information integration. By a review of these studies, it appears that a particular emphasis has been placed by researchers on the problems of partner selection and contract design.

Empirically based insights into the problem of selecting the right logistics service provider have been provided in the studies by McGinnis et al. (1995) and Menon et al. (1998), which investigated criteria for TPL selection and how the firm’s competitive responsiveness strategy and external environment affect them. Studies in this area have also relied on conceptual-type research to provide decision-making models and frameworks for the selection process of TPL service providers. Meade and Sarkis (2002) offered a decision-making model based on the analytical network process (ANP) to assist the management in the selection of providers for the reverse logistics process. More recently, Vaidyanathan (2005) proposed a conceptual framework for the selection of TPL providers built around IT and Bottani and Rizzi (2006) presented a multi-attribute approach based on the TOPSIS (Technique for Order Preference by Similarity...
to Ideal Solution) technique and the fuzzy set theory.

As to the problem contract design, Logan (2000) illustrated how the logic of agency theory can help to design the types of contracts and relationships necessary to provide and support an environment of trust and mutual satisfaction. Lim (2000) developed a game-theoretic model of how a contract may be established in order that TPL providers are encouraged to reveal their true capabilities. Chen et al. (2001) provided a framework for analysing three forms of third-party warehousing contracts with space commitments and adjustment options. Alp et al. (2003) devised an approach for designing contract parameters based on the interactions of three defined sub-problems: vehicle dispatching problem, inventory control and contract value problem.

4.1.4. Research on TPL outcomes

When successful, TPL relationships can give both parties a competitive advantage in the marketplace (Tate, 1996). In particular, extant literature has shown that involvement in TPL arrangements, especially cooperative, partnership-like relationships, can result in multiple economic, organizational and financial benefits for shippers such as reduced logistics cost, improved service levels and end-customer satisfaction, improved access to and application of technology, reduced capital investment in facilities, equipment and manpower, increased flexibility and productivity, improved employee morale, increased access to wider markets and new competencies (e.g. Bowersox, 1990; Daugherty et al., 1996; Ellram and Cooper, 1990; Larson and Gammelgaard, 2001b). Research in this area has shown that higher levels of commitment and integration typical of long-term TPL arrangements also improve third-party providers' performance. While risks exist due to capital investment in the alliance and high customization of supplied services (Bowersox, 1990), TPL providers can benefit from a long-term source of business volume, which results in a closer match between available capacity and demand, as well as from service innovation and growth opportunities stemming from synergic work and knowledge sharing with the customer (Bowersox, 1990; Halldórsson and Skjoett-Larsen, 2004).

Research in this area has also been conducted regarding the outcomes and benefits of TPL arrangements within the overall context of supply chain management. Gentry (1996) illustrated that closer relationships between suppliers, buyers and carriers in the supply chain, i.e. logistics triads, lead to operating improvements that can increase the likelihood of maximizing supply chain efficiency and improve the competitive position of the entire supply chain in the marketplace. Kopczak (1997) investigated the linkages between formation of logistics partnerships and supply chain restructuring in the computer industry. Study findings indicated that the logistics outsourcing via a partnership facilitates supply chain restructuring by allowing greater changes to be made more quickly and with less investment. Moreover, evidence was provided of the beneficial effects on supply chain performance deriving from the restructuring of the supply chain as an inherent aspect of TPL alliances. Stressing the need to view the advantages of logistics alliances within the overall context of supply chain management, Bhatnagar and Viswanathan (2000) illustrated the benefits of a strategic alliance between a manufacturer and a global logistics service provider within the context of contemporary supply chain imperatives of cost efficiency and customer responsiveness. Panayides and So (2005) found that logistics service provider–client relationships, through the adoption of relational exchange, can improve supply chain effectiveness and performance by promoting a positive climate for learning and innovation.

4.1.5. Comprehensive studies

The distribution of the reviewed works by topic (Table 2) indicates that a considerable portion of the examined literature on TPL is constituted by “comprehensive” articles. These are empirical, survey-based works that provide a descriptive picture of prevalent TPL practices in specific countries/regions. While the range of the issues under investigation may vary across these studies, these contributions typically focus on the following issues: the extent of usage of TPL services and the specific services most commonly used; the reasons for entering TPL; the length of contracts; the obstacles/problems encountered in implementing and managing TPL relationships; the benefits of using TPL services and the overall satisfaction with TPL service providers; and the future plans of current users of TPL services. These issues are generally explored from users’ perspective through multi-sector surveys of the manufacturing industry. Some of the studies falling into this area have also
attempted to regularly assess the evolution of TPL practices through longitudinal surveys (e.g. Lieb and Bentz, 2004, 2005a; Lieb and Randall, 1996b, 1999b; Lieb and Miller, 2002, Min, 2002, Murphy and Poist, 2000).

By a review of these works, it is observed that earlier studies have focused on developed regions such as the US, Europe and Australia, whereas recent research in this area shows more efforts to provide insights into TPL practices in developing regions, especially Asian countries, which have been shifting to an industrialized economy in recent decades. Some comparative analyses have also been undertaken to offer a cross-country view of TPL. A breakdown of these comprehensive studies by geographical focus is provided in Table 4.

5. Review of research approaches taken in TPL literature

In this section, the status of research approaches taken in the literature on TPL is illustrated. Based on the scheme developed by Olsen and Ellram (1997), the collected articles have been classified along two dimensions, from theoretical to empirical and from prescriptive to descriptive. These dimensions have been adopted within other review works (e.g. Croom et al., 2000; Luo et al., 2001) and allow a reasonably comprehensive assessment of research approaches taken in the current body of literature on the subject by highlighting both the basic methodology used and the aim or focus of studies. Within the first dimension, empirical research refers to studies that report practice by means of surveys, case studies, interviews or anecdotal information, while theoretically based works primarily develop models, concepts or conceptual frameworks. Between these two opposites, a third category exists that includes articles that are both theoretical and empirical: these works typically develop a number of hypotheses and test them empirically. The second distinction is made between prescriptive and descriptive contributions, with the first type aimed at proposing normative models (practices that organizations and individuals ought to adopt) and the latter aimed at describing, explaining and summarizing current practices. The prescriptive/descriptive dimension is really a continuum in that many articles are primarily descriptive but also give some managerial implications (Olsen and Ellram, 1997); however, in order to simplify the classification and create comparable groups of articles, the contributions have been only categorized as prescriptive or descriptive based on their main focus.

The distribution of articles by research approach is given in Table 5. It can be observed that the majority of reviewed articles (about 63%) fall into the empirical category, suggesting an empirical and more practitioner-oriented focus in the literature on TPL. Theoretical works make up about 20% of the total studies, while approximately 17% of the reviewed articles have a theoretical and empirical focus going beyond a descriptive presentation of the investigated factual situations and emphasizing explanation and evaluation through the refutation or confirmation of specific hypotheses. Table 5 further indicates that TPL literature is mostly

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<th>Geographical focus</th>
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<th>Types of methodology</th>
<th>Prescriptive</th>
<th>Descriptive</th>
<th>Total</th>
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<tbody>
<tr>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
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<tr>
<td>Theoretical</td>
<td>18</td>
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<td>Empirical</td>
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</tr>
<tr>
<td>Total</td>
<td>31</td>
<td>20.3</td>
<td>121</td>
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descriptive in nature, with about 80% of the total articles falling into this category.

Table 6 provides a summary of all the reviewed articles that correspond to the methodology classification scheme along with the indication of the specific research methods used in empirical articles (see the letters next to the references). It can be observed that empirical research on TPL is largely

### Table 6
Summary of references under the methodology classification scheme of the literature

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<tr>
<th>Methodology Classification</th>
<th>Prescriptive</th>
<th>Descriptive</th>
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*aIncludes the following methods: survey (S), case study (C), interview (I), anecdotal (A), focus group (F). The specific method is indicated next to each reference.

*bBased on empirical material collected in research projects and action research.*
based on surveys (about 64% of articles). However, results show a great use also of case studies, with 25% of total empirical articles using this methodology. Indeed, case studies represent a very useful and appropriate instrument for research on relationships as they allow an in-depth, “multi-perspectival” analysis, i.e. to consider not just the perspective of the actors within the study but also of the interaction between them (Frankel et al., 2005). Finally, only few examples of the use of the interview and anecdotal methods can be found.

In Table 7, the distribution of methodologies is arranged under the five content categories. The figures reported in this table confirm the empirical focus of TPL literature across the content categories, with the exception of the process category. Indeed, in comparison to the other content areas, this category is characterized by a prevalence of theoretically based articles, which typically propose conceptual, normative models and frameworks of TPL establishment/management. Table 7 further shows that literature on TPL context and outcomes experienced relatively more empirical contributions that account for 64% and 73.3% of all the articles addressing these issues, respectively. The structure of TPL arrangements is mostly addressed through empirical-oriented and theoretical/empirical research. The latter typically proposes hypotheses relating to lists/taxonomies of relationship’s features that are tested through surveys in order to provide a characterization of TPL relationships. Finally, it can be observed that “comprehensive” studies are exclusively based on empirical methods.

As clarified before, these contributions primarily aim at providing a general picture of TPL practices in specific countries/regions and information is gathered by means of quantitative methods with a high potentiality for descriptive purposes such as surveys.

6. Conclusion and research implications

In the recent past, the growing research interest in and the importance of TPL has engendered a plethora of contributions on this topic. This paper has attempted to provide a picture of the body of research produced in the field of TPL during the period 1989–2006. The study is not without limitations. First, only academic journal papers were included in the review, as they are generally considered to be the highest level of research for acquiring information and disseminating new findings (e.g. Ngai and Wat, 2002). Other relevant knowledge concerning this topic might also be found in conference proceedings papers, master’s theses, doctoral dissertations and textbooks. Adding knowledge from these sources might have altered the results or validated the conclusions made in this article. Second, some relevant articles published within the specified time frame may have been missed during the literature search. This may also be due to the fact that, although the number was small and negligible, there were some missing issues of volumes of some journals (e.g. for Transportation Science, there were two issues missing out of 72 issues over the 18 years, and this was the highest percentage). A third potential limitation concerns the choice of terms for the literature search. Although it is believed that the right descriptors have been used, it cannot be guaranteed that other articles dealing with this subject do exist but under different labels. Finally, though a conscientious effort has been made to identify the primary topic and research approach of each article, the review and classification of the literature are to a certain extent dependent on subjective estimation. Notwithstanding these limitations, it is believed that this study provides some reasonable insights into the state of the art of TPL literature. Moreover,
based on the review, classification and analysis of the articles, some broad suggestions for future research can be put forth. Indeed, in spite of the significant development achieved over the last decade, there remain many important issues for future investigation. Without claiming to be exhaustive, four issues are identified for immediate attention.

The first concerns implications of e-commerce for TPL. The rise of e-commerce has been impressive in the past decade, impelled by the rapid development of telematics and computing power. Its influence as a driving force of change in logistics is undeniable both within companies and within supply chains. It is therefore surprising that little attention has been paid to investigate and assess direct as well as indirect implications of e-commerce for TPL. In particular, from the review of TPL literature it appears that extant studies have mostly focused on the potential of information technologies and e-commerce applications for TPL providers to reduce costs, increase productivity and improve customer service (e.g. Evangelista and Sweeney, 2006; Koh and Tan, 2005; Lai et al., 2005; Lynagh et al., 2001; Piplani et al., 2004). However, the influence of e-commerce and related information and communication technology (ICT) developments on TPL can take other paths that deserve further exploration. By influencing the operation and organization of supply chains, e-commerce impacts the demand for TPL services, in many cases creating new demands on fulfilment. E-commerce also provides the buyer and seller of logistics services a wide array of tools and systems for communication and information management, which are expected to have a substantial effect on the interaction between the parties and the nature of TPL relationships. Moreover, by offering new management tools and transparency of logistics service markets, e-commerce gives rise to new forms of intermediation for logistics services, such as the transportation or logistics exchanges that provide one-stop websites for accessing transportation and logistics services from multiple suppliers (Chow and Gritta, 2001). These issues of e-commerce implications for TPL provide researchers with numerous opportunities for further enhancing the field.

Another area with potential for further research and understanding concerns the role of organizational culture in the formation and development of TPL arrangements. Organizational culture plays a relevant role in the development as well as in the maintenance over the time of TPL arrangements—especially of the close, partnership-like ones—as highlighted, for example, in the study by House and Stank (2001). While the influence of organizational culture on TPL relationships is not debatable, there have not yet been many attempts to capture the implications of various culture dimensions on the formation and management of TPL relationships. Potential advancements concerning this issue are of particular interest given the increasing internationalization trend in logistics outsourcing, which boosts the problem of coping with cultural asymmetries within TPL relationships (Voss, 2003).

Further research within the TPL field is also needed to develop a deeper understanding of the behavioural complexities that emerge through the interaction between the buyer and provider of logistics services. Increasingly, it is believed that successful and lasting relational exchanges are those in which partners go beyond short-term transactional benefits and incorporate behavioural factors such as trust and commitment (e.g. Dwyer et al., 1987; Gundlach et al., 1995; Morgan and Hunt, 1994). This belief, which strongly pervades marketing thought and studies, has also informed recent TPL research such that many scholars have begun to approach TPL from a relationship marketing perspective in order to investigate behavioural attributes of TPL arrangements and their link with outcomes of such relationships (e.g. Knemeyer et al., 2003; Knemeyer and Murphy, 2005a, b; Moore and Cunningham, 1999). Although these studies have generated significant knowledge on the behavioural issues associated with TPL, yet little empirical evidence exists on the dynamics of formation of such behavioural complexities over time. Given the dynamic nature of TPL arrangements, deeper insights into the evolution of behavioural aspects of TPL arrangements could be provided by relying on more longitudinal approaches that allow to take into account the temporal dimension of relationships.

A related area that needs closer investigation concerns bonding processes and philosophies within TPL arrangements. This concept, bonding, has been identified as an important concept for examining and explaining successful buyer–seller relationships (e.g. Håkansson and Snehota, 1995; Wilson, 1995). Stability and overall performance of TPL arrangements are likely to be severely affected by the multiplicity of economic, technical and social bonds that develop during the relationship between the
parties. TPL studies would benefit from more research designs aimed at identifying and explaining integrative processes that serve to bond partners and strengthen relationships. With an increasing trend towards creating, managing and enhancing long-term cooperative logistics arrangements (e.g. Murphy and Poist, 2000; van Laarhoven et al., 2000), organizations increasingly need to learn about and invest in bonding processes.

Besides the opportunity for additional research in the above areas, an overall suggestion for future research in the TPL field can be advanced concerning the need for a more comprehensive conceptual basis. The literature review has shown a relative lack of theoretical work in the field when compared with empirically based studies. Consistent with the early stages in the development of a scholarly body of work, much of the literature on TPL has been largely exploratory and descriptive. Further development of the field requires greater emphasis on the development of theory, constructs and conceptual frameworks in order to build a conceptual foundation for subsequent empirical studies—a point strongly supported by Skjoett-Larsen et al. (2003) and Maloni and Carter (2006). In particular, our concern with the finding that TPL literature is primarily empirical-descriptive regards the lack of a guiding conceptual base incorporating a systematized set of definitions, constructs and models to be used in order to investigate, describe and explain TPL relationships and the factors influencing them. The review conducted in this paper has shown that efforts intended to develop models, conceptualizations and frameworks are limited to specific aspects of TPL, especially concerning its developmental process. Also, extant conceptual-type research relating to specific TPL issues has been conducted from various perspectives and is often based on different definitions or interpretations of what is meant by TPL. Therefore, it can be argued that advancements in the field would benefit from the development of a systematized conceptual base consisting of common definitions of important constructs and variables—such as the IMP’s interaction model—capable of explaining and describing TPL relationships and the relation among the constructs. Such a basis, when recognized by a large number of researchers in the field, would provide a robust structure that enables a more comprehensive understanding of TPL relationships also through greater sharing and comparison of analyses and research results.

Acknowledgements

The author is most grateful to the anonymous reviewers for their comments that helped improving readability and contents of the paper and would also like to thank Dr. Alfonso Morvillo for his guidance and support in starting and completing this research.

References


