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Outsourcing of logistics functions is a business dynamic of growing importance in Australia (for example, see [1]) and elsewhere in the world (see, for example [2,3]. Third party logistics involves the use of external companies to perform logistics functions which 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.

The extent of logistics outsourcing in the USA[4] and Western Europe[5] has been examined in a number of previous studies. However, there has been no systematic study of the experience of Australian firms using third party logistics services. The purpose of this research is to provide such information.

Other case studies[6] and a limited number of commercial surveys[7] exist regarding the Australian experience. In general, these sources indicate that an increasing number of Australian firms are choosing to outsource some logistics activities (either partially or wholly). However, this is by no means a uniform trend. For example, a number of key retailers in Australia have taken the opportunity to bring back in house both outsourced transport and warehousing on the expiration of recent contracts. It is essential, therefore, to gain a clear understanding of general industry practice.

Because of the theme of this special issue, a brief description of the Australian transport environment is provided. The subsequent section describes the research methodology which is then followed by the results from the survey. The paper concludes with a summary and description of the implications of the findings.

The Australian transport environment

With an area of 7.7 million square kilometres, Australia has 82 per cent of the land mass of the USA. On the other hand, Australia's population of 18 million is less than 10 per cent of the USA's population of more than 270 million or the

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estimated 320 million plus population of the European Union. The Australian population is highly centralized in the southeast of the continent with 40 per cent living in the cities of Melbourne and Sydney. The balance of the population is dispersed across the whole continent creating pockets of habitation in need of transport service. An interesting response to this isolation has been the Australian Flying Doctor Service.

In Australia, the establishment of coastal colonies with easy access by sea slowed the development of land modes of transport, unlike the circumstances which drove the construction of the US railroads. Nor did Australia develop the canal systems of Britain or the USA. Political developments created a multitude of rail gauges similar to the differences between European countries historically.

These factors led to a road-based transport system. Costs have been compensated for by high levels of efficiency due, in part, to high levels of competition especially in interstate line haulage. With increased service expectations, many firms offering third party transport services were quick to recognize the demand for complementary warehouse facilities. The resulting efficiency and management skills of Australia's large logistics services companies (e.g. TNT, Linfox and Maynes Nickless) have enabled them to be competitive in the European and US markets.

Methodology

To determine the current usage of third party logistics services, a survey was conducted during May-June 1995. The survey instrument was based on the questionnaire developed originally by Lieb[8]. Several minor changes were made to localize the questionnaire for the Australian environment. The survey instrument focused on the following six areas: the extent to which those firms use the services of contract logistics companies; the specific contract logistics services used; the benefits which have emerged for the user firms; the obstacles encountered in implementing contract logistics relationships; the impact of the use of contract logistics services on logistics costs, customer satisfaction, and employees of the user firm; the future plans of current users of contract logistics services.

The sample population for this study was the 1994 *Business Review Weekly* list of 500 largest Australian firms. Financial, banking, real estate, and insurance organizations were eliminated from the group as they were less likely to have significant logistics needs. The exercise resulted in a list of 220 firms. The remaining firms were then contacted by telephone to obtain the name and address of the senior logistics executive for each of their most substantial operating units (e.g. Cadbury Confectionery and Cadbury Beverages). A total of 308 operating units were identified in this fashion.

Each of the senior logistics executives at the 308 operating units was then contacted by telephone to determine if there was interest in participating in the study and 127 senior logistics executives agreed to participate. Within one week of the telephone contact, a questionnaire with a cover letter and pre-paid reply envelope were mailed to the 127 executives. A total of 84 usable questionnaires were received in the following five-week period. This represented a response rate of 27 per cent, which compares favourably to response rates for other recent studies of the use of contract logistics services[9]. Analysis of the responses is presented in the next section[10].

Results

Extent of use

When asked whether or not their organizations use contract logistics services, 51 of the 84 respondents indicated that their firms did so. Of those firms currently outsourcing logistics services, two-thirds indicated that their firms employ the services of more than one contract logistics firm.

Among the respondents, less than one-third of the non-users are looking into the use of these service providers and 70 per cent do not plan to investigate the use of such services in the near future.

Aspects of the size of the firms which responded to the survey are provided in Table I. Approximately one-half of the users and non-users of contract logistics services employ 500 or more individuals[11]. User firms reported average annual revenues of $777 million and non-users reported average annual revenues of $295 million. (All revenue figures are in Australian dollars.)

Of those using contract logistics services, most are relatively experienced with the concept. As shown in Table II, 70 per cent of the users have been doing so for more than three years. Hence, the results provided by this survey can provide insight into the long term impacts of using such services.

Table I. Characteristics of users and non-users of contract logistics services (percentages)

	Users	Non-users
Approximate current employment		
< 499	52	55
500-999	12	36
1,000-4,999	20	6
5,000+	16	3
Approximate current annual sales revenue (A$ million)		
< 100	26	50
100-499	38	35
500-999	17	4
1,000+	19	12

Table II. Length of experience with contract logistics services

Time period using contract logistics services	Percentage of respondents
Less than one year	6
One to three years	24
Three to five years	18
More than five years	52

The decision-making process

Those surveyed were asked to indicate the organizational level at which the strategic decision to use contract logistics services originated within their company. The answer varied considerably among users. While 38 per cent indicated it originated at the corporate level, 29 per cent traced it to the divisional level, and 33 per cent said it began at the local level. (Only one respondent noted multiple levels, and those were the corporate and divisional levels.)

Those using contract logistics services became aware of the services of the company or companies they employ in a variety of ways. As presented in Table III, the most common ways were sales calls by representatives of the contract logistics firms and discussions with other logistics professionals.

Managers in other functional areas are routinely involved in the decision to use the services of contract logistics companies. Of the respondents using such services, 67 per cent indicated that this was the case in their companies. Typically, managers in several other functional areas were involved. The responses, summarized in Table IV, show that marketing and finance were involved in the decision process by more than one-half of the firms. Manufacturing and human resource management (HRM) were also involved in the decision process by a number of firms. Other functions, such as information systems and engineering, were noted by several respondents (3 and 2, respectively) but were not included in the table because of the few mentions each received.

Contract logistics services used

The use of contract logistics services in Australia is primarily focused on domestic operations – 65 per cent of the firms employ contract logistics

Information source	Percentage of respondents citing that source
Sales calls by contract logistics representative	47
Discussions with other logistics professionals	38
Advertising in professional publications	6
Direct mail advertising from contract logistics firm	6
Sales contact at a logistics conference	3

Table III. Most frequently cited ways those using contract logistics services became aware of such services

Functional area	Percentage of respondents indicating that participation
Marketing	58
Finance	54
Manufacturing	38
HRM	15

Table IV. The participation of managers in other functional areas in the decision to use contract logistics services service providers for domestic operations only. The other 35 per cent use such services for both international and domestic operations. No respondent indicated that their firm uses such services for international operations only.

These large companies use a wide range of contract logistics services as is shown in Table V. Those logistics functions outsourced by at least one-third of the respondents are fleet management, warehouse management, shipment consolidation, order fulfilment, and product returns[12]. In general, it appears that the most "hard" asset intensive activities have been allocated to the contract logistics providers.

Logistics service	Percentage citing use of contract firm for that service
Fleet management	53
Warehouse management	47
Shipment consolidation	42
Order fulfilment	33
Product returns	33
Carrier selection	27
Logistics information systems	22
Order processing	16
Product assembly/installation	13
Inventory replenishment	13
Rate negotiation	11
Freight payment	9
Customer spare parts	9

Table V. The most frequently used contract logistics services

Implementation

In many instances when the possibility of outsourcing logistics activities is initially discussed, logistics managers are less than enthusiastic. Thirty per cent of the respondents noted such concerns. The most commonly expressed concerns were: the potential loss of direct control of logistics activities; uncertainties about the capabilities of the contract logistics firms; the costs of outsourcing; and the deployment of company personnel. (On the other hand, one manager noted that there were no concerns at her/his firm because the internal system was abysmal.)

Logistics managers usually have several contract logistics companies from which to select. The survey sought to determine the most important factor in making the final selection among competing companies. In answering an open-ended question, more respondents noted cost versus service factors. A total of 12 respondents noted cost considerations as the most important selection factor, while seven said that service considerations were most important. Other factors cited by respondents as being most important were personal knowledge of the contractor, coverage provided, previous experience and references, experience in project management and new systems implementation, and perceived competence.

Implementation issues were also addressed in the survey. More than 60 per cent of the users indicated that they experienced significant impediments in bringing contract logistics firms on line. In response to an open-ended question, the most often cited implementation issues included teaching the contract logistics firm about the company's policies and business requirements, and reaching agreement on service definition(s). Also noted by several firms was the need to overcome the "us versus them" attitude of internal staff. No respondent indicated that they encountered any difficulties in merging information systems.

Training

Because the introduction of contract logistics services into a company represents an important shift in the way in which business is conducted, it might reasonably be assumed that related training would occur. However, one-half of the users of contract logistics services identified in this survey indicated that implementation of those arrangements did not necessitate retraining of logistics personnel. The training efforts that have been undertaken have typically focused on information and computer systems, and new technologies. Only one firm noted that it had introduced a programme in change management, while another firm indicated that it had begun a programme in team building including personnel from the contract logistics firms.

Commitment to the concept and expenditures

While many large firms now use contract logistics services, the degree of commitment to the concept varies considerably from company to company. As shown in Table VI, 56 per cent of users indicated that their firm's commitment to the concept was "moderate" or "extensive". The other 44 per cent indicated that their firms' commitment was "limited" or "very limited".

Extent of commitment	Percentage of respondents indicating that commitment
Very limited	8
Limited	36
Moderate	34
Extensive	22

Table VI. Extent of company commitment to contract logistics services

This varying degree of commitment is also reflected in Table VII which contains information related to the percentage of the total logistics budget paid to contract logistics companies. One-half of the respondents allocate 20 per cent or less of their total logistics budget to contract logistics service providers, whereas only about one in five firms allocate more than 71 per cent of their total logistics budget to such providers.

Contract usage with services providers

Nearly 60 per cent of the user firms have signed contracts with their services providers. Of these contracts, none had been signed for periods of less than one

Table VII.
Percentage of total corporate logistics expenditures paid to contract logistics companies

Expenditure category	Percentage of respondents in that category
0-10	39
11-20	11
21-30	11
31-40	11
41-50	2
51-60	2
61-70	2
71-80	4
81-90	11
91-100	7

year nor for periods greater than five years; 83 per cent were for periods of one to three years; and 17 per cent for more than three years, but less than five years. Of these contracts, 54 per cent include performance incentives and 52 per cent contain penalties for non-performance.

Organizational impact

According to the survey respondents, companies using contract logistics services typically experience multiple benefits. The most frequently cited benefits are cost reduction, improved expertise, and a reduction in capital requirements for the user firm. Several other users noted the enhanced flexibility (particularly with respect to seasonality), access to markets that would not have been accessible otherwise, the ability to offer services that would not have been possible otherwise, and the opportunity for the user firm to focus on its core business.

Users of contract logistics services were also asked to categorize the impact of those services on their companies in terms of logistics costs, internal logistics system performance, customer satisfaction and employee morale. The responses are summarized in Table VIII. Clearly, the use of contract logistics

Table VIII.
Respondents' assessment of the impact of the use of contract logistics services (percentages)

	Nature of the impact			
Area of impact	Very negative	Negative	Positive	Very positive
Logistics costs	0	12	74	14
Customer satisfaction	4	4	71	21
Internal logistics system performance	2	9	78	11
Employee morale	2	30	64	4

services has had a strong positive impact on costs, system performance, and customer satisfaction. A minimum of 88 per cent of the respondents noted the impact as "positive" or "very positive" in each of these areas.

Interestingly, 68 per cent of the respondents noted the impact of the use of contract logistics service providers as having a "positive" or "very positive" impact on employee morale. This level is somewhat surprising in that 50 per cent of these firms indicated that their use of contract logistics service providers had permitted their organization to reduce the number of full-time logistics positions. Data on the extent of these reductions is provided in Table IX. Of those indicating that a reduction had occurred, for the most part the reduction was 20 per cent or less. No firms reported eliminating more than 80 per cent of the positions in logistics.

Percentage of full-time positions eliminated	Percentage of respondents indicating that category
0-20	59
21-40	19
41-60	15
61-80	7
81-100	0

Table IX. Percent of full-time logistics positions eliminated through the use of contract logistics services

A variety of methods have been used in addressing the displacement of logistics personnel. The typical company responded with several programmes; 41 per cent reported transfers within their firm; 30 per cent offered employment with the contract firm; 52 per cent terminated employees; and 11 per cent employed other approaches, such as attrition and early retirement.

Plans for the future

Almost all of the firms using contract logistics services are at least satisfied with the performance of those companies. A total of 33 per cent indicated that they were "very satisfied" with the performance of their contract services providers. Another 63 per cent indicated they were "satisfied". Only one firm indicated that it was "dissatisfied" and another firm indicated that it was "very dissatisfied" with performance of the contract logistics firms. Not surprisingly, 94 per cent of the respondents indicated that the use of contract logistics services had been a positive development.

Users were also asked how they would modify their use of contract services if they were given complete corporate responsibility to make that decision, and this data is provided in Table X, where 84 per cent indicated they would moderately or substantially increase use. Conversely, 16 per cent indicated they would moderately or substantially decrease use of contract logistics services.

Summary and implications

Results reported in this study indicate that a number of operating units at many of the largest Australian firms are utilizing the services of contract logistics providers, and have been doing so for several years. Many of these organizations employ the services of more than one contract logistics firm to provide a wide variety of services. Furthermore, many non-users are interested in this approach as evidenced by the 30 per cent who are exploring the idea.

Table X.
How respondents would modify their companies' use of contract logistics services if given complete responsibility for the decision

Nature of modification	Percentage of respondents indicating that modification
Moderately increase use	64
Substantially increase use	20
Moderately decrease use	7
Substantially decrease use	9

Those operating units utilizing contract logistics services providers have substantial experience with this practice as evidenced by more than one-half having done so for more than five years. The decision to utilize contract logistics firms is almost as likely to originate at the corporate, divisional or local level. However, wherever the idea originates, managers from other functional areas will usually be involved in the decision to outsource.

The level of commitment to the utilization of contract logistics providers varies across firms, but more than one-fifth of the firms responding to this survey characterize their commitment as extensive. Additional evidence of this high level of commitment is provided by the one-quarter of the firms allocating more than 50 per cent of their total logistics budget to contract providers.

In almost all cases, senior logistics executives view the use of contract firms as having had a positive impact on logistics costs, logistics systems performance, customer satisfaction, and employee morale. Based on these results, more than 80 per cent of the managers would at least moderately expand their companies' use of contract logistics firms.

To those logistics executives considering outsourcing, this very positive feedback should be reassuring. The number of experienced organizations provide an important source of information about how to proceed and what to expect.

Consideration of the use of contract logistics services providers will bring logistics managers in contact with colleagues in finance, marketing, manufacturing, and other areas, potentially expanding the logistics influence throughout the organization. This should improve the scope of the analysis, as well as subsequently facilitating implementation.

The experience of the firms in this study also provides insights as to how to plan for implementation; for example, the need to educate the third party logistics services provider about the firm's requirements. Programmes to place redundant employees must also be developed.

The survey also contains useful information for the providers of contract logistics services. The most important means for establishing contact with potential customers are through sales calls by representatives of the contract firms and discussions with other logistics professionals. Significant resources spent on other approaches should be questioned, based on the results from this survey. In addition, while users are quite satisfied with their experiences to date, few envision contract providers as a means to enter new markets, develop new customers or expand their current offerings. Those contract logistics firms able to offer opportunities of such a nature may find their markets growing rapidly.

Too often, outsourcing has been characterized as an "all or nothing" proposition. As many of the respondents to this survey and other firms have learned, a mixed system may prove best. This approach can provide a balanced and controlled operation to ensure consistency and flexibility. The merging of best practice and industry expertise resulting from such an arrangement could provide leadership in logistics cost and value.

Notes and references

1. Gottliebsen, R.,"Taking stock of logistics", *Business Review Weekly*, 27 March 1995.
2. Richardson, H., "How much should you outsource?", *Transportation and Distribution,* September 1994.
3. Cooper, J, Browne, M. and Peters, M., *European Logistics: Markets, Management and Strategy*, Blackwell, Oxford, 1991.
4. Lieb, R. and Randall, H., "A comparison of the use of third-party logistics services by large American manufacturers, 1991 and 1994", *Journal of Business Logistics,* Vol. 17 No. 1, 1996.
5. Lieb, R., Millen, R. and Van Wassenhove, L., "The third man", *Logistics Europe,* Vol. 1 No. 2, April 1993.
6. "The pros and cons of contract distribution", *Materials Handling and Distribution,* January-February 1988.
7. "Logistics markets to continue 20 per cent growth", *Daily Commercial News*, 14 August 1995.
8. Lieb, R., "The use of third party logistics services by large American manufacturers", *Journal of Business Logistics,* Vol. 13 No. 2, 1992.
9. Previous studies on the use of third party logistics services reported response rates of 24 per cent in[4] and of 19 per cent in[5].
10. A paper is planned which will compare the Australian results with those obtained by previous studies of logistics outsourcing in the USA and Western Europe. The focus of this paper on the Australian experience only was selected given the Asia Pacific theme of the special issue.
11. The responses of firms using contract logistics services were separated on the basis of the number of employees, in order to examine whether size impacted usage patterns. Depending on the nature of the data, either a chi-square or student *t*-test was applied. No significant differences were found when the responses of smaller firms (less than 500 employees) were compared to those of larger firms (500 employees or more).
12. The usage of third party providers for freight payment services by Australian firms will appear very small to those familiar with the situation in other parts of the world. Until the late 1980s, freight payment services were not offered by banks and other intermediaries in Australia. Hence, many Australian firms developed their own systems, and, based on the data, continue to perform this service internally.

This article has been cited by:

1. Suhaiza Zailani, Mohd Rizaimy Shaharudin, Khairul Razmi, Mohammad Iranmanesh. 2017. Influential factors and performance of logistics outsourcing practices: an evidence of malaysian companies. *Review of Managerial Science* **11**:1, 53-93. [CrossRef]
2. Aicha Aguezzoul. 2014. Third-party logistics selection problem: A literature review on criteria and methods. *Omega* **49**, 69-78. [CrossRef]
3. Hokey Min. 2013. Examining logistics outsourcing practices in the United States: from the perspectives of third-party logistics service users. *Logistics Research* **6**:4, 133-144. [CrossRef]
4. Ali Diabat Engineering Systems and Management, Masdar Institute of Science and Technology, Abu Dhabi, United Arab Emirates Abdallah Khreishah Department of Computer and Information Sciences, Temple University, Philadelphia, Pennsylvania, USA Govindan Kannan Department of Business and Economics, University of Southern Denmark, Odense, Denmark Vinay Panikar Department of Mechanical Engineering, National Institute of Technology, Calicut, India Angappa Gunasekaran Department of Decision and Information Sciences, Charlton College of Business, University of Massachusetts – Dartmouth, North Dartmouth, Massachusetts, USA . 2013. Benchmarking the interactions among barriers in third-party logistics implementation. *Benchmarking: An International Journal* **20**:6, 805-824. [Abstract] [Full Text] [PDF]
5. Omprakash K. Gupta, S. Samar Ali, Rameshwar Dubey. 2013. Third Party Logistics. *International Journal of Strategic Decision Sciences* **2**:4, 29-60. [CrossRef]
6. Hokey MinDepartment of Management, College of Business Administration, Bowling Green State University, Bowling Green, Ohio, USA Sherrie DeMondJacobson Companies, Des Moines, Iowa, USA Seong-Jong JooHasan School of Business, Colorado State University-Pueblo, Pueblo, Colorado, USA. 2013. Evaluating the comparative managerial efficiency of leading third party logistics providers in North America. *Benchmarking: An International Journal* **20**:1, 62-78. [Abstract] [Full Text] [PDF]
7. Duangpun Kritchanchai, Albert Wee Kwan Tan, Peter Hosie. 2012. An Empirical Investigation of Third Party Logistics Providers in Thailand. *International Journal of Information Systems and Supply Chain Management* **3**:2, 68-83. [CrossRef]
8. Rebecca Aggarwal, Ming K. LimIncreasing competitiveness of third party logistics with RFID 437-444. [CrossRef]
9. Ana Núñez-CarballosaEconomia i Organització d'empreses, University of Barcelona, Barcelona, Spain Laura Guitart-TarrésEconomia i Organització d'empreses, University of Barcelona, Barcelona, Spain. 2011. Third-party logistics providers in Spain. *Industrial Management & Data Systems* **111**:8, 1156-1172. [Abstract] [Full Text] [PDF]
10. Emel Aktas, Berrin Agaran, Fusun Ulengin, Sule Onsel. 2011. The use of outsourcing logistics activities: The case of turkey. *Transportation Research Part C: Emerging Technologies* **19**:5, 833-852. [CrossRef]
11. Chiung-Lin Liu, Andrew C. Lyons. 2011. An analysis of third-party logistics performance and service provision. *Transportation Research Part E: Logistics and Transportation Review* **47**:4, 547-570. [CrossRef]
12. Shams RahmanSchool of Business IT and Logistics, RMIT University, Melbourne, Australia. 2011. An exploratory study of outsourcing 3PL services: an Australian perspective. *Benchmarking: An International Journal* **18**:3, 342-358. [Abstract] [Full Text] [PDF]
13. Hsin-I HsiaoDepartment of Business Administration, Wageningen University, Wageningen, The Netherlands Ron G.M. KempWageningen University and Research Centre, Wageningen The Netherlands, and Netherlands Competition Authority, The Hague, The Netherlands Jack G.A.J. van der VorstOperations Research and Logistics Group, Wageningen University, Wageningen, The Netherlands S.W.F. (Onno) OmtaDepartment of Business Administration, Wageningen University, Wageningen, The Netherlands. 2011. Logistics outsourcing by Taiwanese and Dutch food processing industries. *British Food Journal* **113**:4, 550-576. [Abstract] [Full Text] [PDF]
14. Michael Bourlakis and T.C. MelewarMichael BourlakisKent Business School, University of Kent, Canterbury, UK T.C. MelewarBrunel Business School, Brunel University, Uxbridge, UK. 2011. Marketing perspectives of logistics service providers. *European Journal of Marketing* **45**:3, 300-310. [Abstract] [Full Text] [PDF]
15. Michael Bourlakis and T.C. MelewarRuth BanomyongDepartment of International Business, Logistics and Transport, Faculty of Commerce and Accountancy, Thammasat University, Bangkok, Thailand Nucharee SupatnMartin de Tours School of Management, Assumption University, Bangkok, Thailand. 2011. Selecting logistics providers in Thailand: a shippers' perspective. *European Journal of Marketing* **45**:3, 419-437. [Abstract] [Full Text] [PDF]
16. R. Rajesh, S. Pugazhendhi, K. Ganesh, C. Muralidharan, R. Sathiamoorthy. 2011. Influence of 3PL service offerings on client performance in India. *Transportation Research Part E: Logistics and Transportation Review* **47**:2, 149-165. [CrossRef]
17. H.I. Hsiao, R.G.M. Kemp, J.G.A.J. van der Vorst, S.W.F. (Onno) Omta. 2010. A classification of logistic outsourcing levels and their impact on service performance: Evidence from the food processing industry. *International Journal of Production Economics* **124**:1, 75-86. [CrossRef]
18. ###, ###, Yong-ki Koh. 2010. An Empirical Study on the Determinant Factors of Logistic Partnership of manufacturers in Gyeongbuk-do Province. *International Commerce and Information Review* **12**:1, 123-152. [CrossRef]

19. Rohit BhatnagarNanyang Business School, Singapore, Singapore Singapore-MIT Alliance, Nanyang Technological University, Singapore, Singapore Chee-Chong TeoSchool of Civil and Environmental Engineering, Nanyang Technological University, Singapore, Singapore . 2009. Role of logistics in enhancing competitive advantage. *International Journal of Physical Distribution & Logistics Management* **39**:3, 202-226. [Abstract] [Full Text] [PDF]

20. Gengui ZhouCollege of Business Administration, Zhejiang University of Technology, Hangzhou, People's Republic of China Hokey MinDepartment of Management, College of Business Administration, Bowling Green State University, Bowling Green, Ohio, USA Chao XuCollege of Business Administration, Zhejiang University of Technology, Hangzhou, People's Republic of China Zhenyu CaoCollege of Business Administration, Zhejiang University of Technology, Hangzhou, People's Republic of China. 2008. Evaluating the comparative efficiency of Chinese third-party logistics providers using data envelopment analysis. *International Journal of Physical Distribution & Logistics Management* **38**:4, 262-279. [Abstract] [Full Text] [PDF]

21. Alessandra Marasco. 2008. Third-party logistics: A literature review. *International Journal of Production Economics* **113**:1, 127-147. [CrossRef]

22. Socrates J. Moschuris. 2008. Organizational participants in the make-or-buy process. *Industrial Marketing Management* **37**:2, 143-153. [CrossRef]

23. Konstantinos SelviaridisDepartment of Management Science, Lancaster University Management School, Lancaster, UK Martin SpringDepartment of Management Science, Lancaster University Management School, Lancaster, UK. 2007. Third party logistics: a literature review and research agenda. *The International Journal of Logistics Management* **18**:1, 125-150. [Abstract] [Full Text] [PDF]

24. Damien PowerFaculty of Economics and Commerce, Department of Management and Marketing, University of Melbourne, Parkville, Victoria, Australia Moosa SharafaliFaculty of Economics and Commerce, Department of Management and Marketing, University of Melbourne, Parkville, Victoria, Australia Vikram BhakooFaculty of Business and Economics, Department of Management, Monash University, Caulfield East, Victoria, Australia. 2007. Adding value through outsourcing. *Management Research News* **30**:3, 228-235. [Abstract] [Full Text] [PDF]

25. Socrates J. Moschuris. 2007. Triggering Mechanisms in Make-or-Buy Decisions: An Empirical Analysis. *The Journal of Supply Chain Management* **43**:1, 40-49. [CrossRef]

26. B.S. SahayManoj KumarApeejay College of Engineering, Sohna, Gurgaon, India Prem VratIndian Institute of Technology Roorkee, Roorkee, India Ravi ShankarDepartment of Management Studies, Indian Institute of Technology Delhi, New Delhi, India. 2006. A multi-objective 3PL allocation problem for fish distribution. *International Journal of Physical Distribution & Logistics Management* **36**:9, 702-715. [Abstract] [Full Text] [PDF]

27. B.S. SahayB.S. SahayInstitute of Management Technology, Ghaziabad, India Ramneesh MohanInstitute of Management Technology, Ghaziabad, India. 2006. 3PL practices: an Indian perspective. *International Journal of Physical Distribution & Logistics Management* **36**:9, 666-689. [Abstract] [Full Text] [PDF]

28. B.S. SahayM. Sadiq SohailDepartment of Management and Marketing, College of Industrial Management, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia Rohit BhatnagarNanyang Business School, Nanyang Technological University, Singapore Amrik S. SohalDepartment of Management, Faculty of Business and Economics, Monash University, Caulfield East, Australia. 2006. A comparative study on the use of third party logistics services by Singaporean and Malaysian firms. *International Journal of Physical Distribution & Logistics Management* **36**:9, 690-701. [Abstract] [Full Text] [PDF]

29. Eleonora BottaniDipartimento di Ingegneria Industriale, Università degli Studi di Parma, Parma, Italy Antonio RizziDipartimento di Ingegneria Industriale, Università degli Studi di Parma, Parma, Italy. 2006. A fuzzy TOPSIS methodology to support outsourcing of logistics services. *Supply Chain Management: An International Journal* **11**:4, 294-308. [Abstract] [Full Text] [PDF]

30. Andy C L Yeung. 2006. The Impact of Third-Party Logistics Performance on the Logistics and Export Performance of Users: An Empirical Study. *Maritime Economics & Logistics* **8**:2, 121-139. [CrossRef]

31. Shams-ur RahmanThe University of Wollongong, Wollongong, Australia. 2006. Quality management in logistics: an examination of industry practices. *Supply Chain Management: An International Journal* **11**:3, 233-240. [Abstract] [Full Text] [PDF]

32. Mohammed Sadiq SohailDepartment of Management and Marketing, College of Industrial Management, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia Obaid Saad Al-AbdaliDepartment of Management and Marketing, College of Industrial Management, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia. 2005. The usage of third party logistics in Saudi Arabia. *International Journal of Physical Distribution & Logistics Management* **35**:9, 637-653. [Abstract] [Full Text] [PDF]

33. Mohammad Sadiq Sohail, Syed Aziz Anwar, Jhinuk Chowdhury, Nadia Rifat Farhat. 2005. Logistics Outsourcing in the United Arab Emirates. *Journal of Marketing Channels* **13**:1, 21-36. [CrossRef]

34. Richard WildingCentre for Logistics and Supply Chain Management, Cranfield School of Management, Cranfield University, Cranfield, UK Rein JuriadoFaculty of Economics and Business Administration, Tartu University, Tartu, Estonia. 2004. Customer perceptions on logistics outsourcing in the European consumer goods industry. *International Journal of Physical Distribution & Logistics Management* **34**:8, 628-644. [Abstract] [Full Text] [PDF]

35. M.S. Sohail, A.S. Sohal. 2003. The use of third party logistics services: a Malaysian perspective. *Technovation* **23**:5, 401-408. [CrossRef]

36. Amrik S. SohalDepartment of Management, Faculty of Business and Economics, Monash University, Caulfield East, Victoria, Australia Robert MillenCollege of Business Administration, Northeastern University, Boston, Massachusetts, USA Simon MossMonash University, Caulfield East, Victoria, Australia. 2002. A comparison of the use of third-party logistics services by Australian firms between 1995 and 1999. *International Journal of Physical Distribution & Logistics Management* **32**:1, 59-68. [Abstract] [Full Text] [PDF]

37. Rohit BhatnagarNanyang Business School, Nanyang Technological University, Singapore S. ViswanathanNanyang Business School, Nanyang Technological University, Singapore. 2000. Re-engineering global supply chains. *International Journal of Physical Distribution & Logistics Management* **30**:1, 13-34. [Abstract] [Full Text] [PDF]

38. Rohit BhatnagarNanyang Business School, Nanyang Technological University, Singapore, Amrik S. SohalDepartment of Management, Monash University, Victoria, Australia, and Robert MillenCollege of Business Administration, Northeastern University, Boston, Massachusetts, USA. 1999. Third party logistics services: a Singapore perspective. *International Journal of Physical Distribution & Logistics Management* **29**:9, 569-587. [Abstract] [Full Text] [PDF]

39. Duangpun Kritchanchai, Albert Wee Kwan Tan, Peter HosieAn Empirical Investigation of Third Party Logistics Providers in Thailand 272-288. [CrossRef]

40. Omprakash K. Gupta, S. Samar Ali, Rameshwar DubeyThird Party Logistics 90-116. [CrossRef]

41. Socrates J. Moschuris, Socrates A. NikitasOutsourcing the Warehousing Function 120-133. [CrossRef]